GENESEE COUNTY PLANNING BOARD REFERRALS
NOTICE OF FINAL ACTION

GCDP Referral ID	**T-03-BER-07-24**
Review Date	**7/11/2024**
Municipality	**BERGEN, T.**
Board Name	**PLANNING BOARD**
Applicant's Name	**Geis Construction South LLC**
Referral Type	**Site Plan Review**
Variance(s)	**Area Variance(s)**
Description:	**Site Plan Review and Area Variance for an Approx.195,000 sq. ft. (Approx. 400 x 500 ft.) new farm equipment manufacturing facility (OXBO) and associated site improvements on existing agricultural land within Appletree Acres Business Park.** **Building Height** **Maximum allowed: 35 ft.** **Proposed: 42 ft.**
Location	**South Lake Rd. (NYS Rt. 19), Bergen**
Zoning District	**Interchange (INT-I) District**

PLANNING BOARD RECOMMENDS:

APPROVAL WITH MODIFICATION(S)

EXPLANATION:

The required modifications are: 1) The applicant obtain documentation from the State Historic Preservation Office (SHPO) as to the project's impacts on archaeological resources, and 2) The applicant obtain a driveway permit from NYS DOT before final approval. With these required modifications, the proposed development should pose no significant county-wide or intercommunity impact. It is recommended that 1) the applicant submits the enclosed application for 9-1-1 Address Verification to the Genesee County Sheriff's Office to ensure that the address of the proposed use meets Enhanced 9-1-1 standards, and 2) that the applicant respond to the review comments provided by MRB Group dated May 30, 2024 and June 21, 2024, and; 3) that all signage complies with the Town's zoning regulations.

Senior Planner

July 11, 2024
Date

If the County Planning Board disapproved the proposal, or recommends modifications, the referring agency shall NOT act contrary to the recommendations except by a vote of a majority plus one of all the members and after the adoption of a resolution setting forth the reasons for such contrary action. Within 30 days after the final action the referring agency shall file a report of final action with the County Planning Board. An action taken form is provided for this purpose and may be obtained from the Genesee County Planning Department.

SEND OR DELIVER TO:
GENESEE COUNTY DEPARTMENT OF PLANNING
3837 West Main Street Road
Batavia, NY 14020-9404
Phone: (585) 815-7901

DEPARTMENT USE ONLY:
GCDP Referral # T-03-BER-07-24

RECEIVED
Genesee County
Dept. of Planning
7/1/2024

* GENESEE COUNTY * PLANNING BOARD REFERRAL

Required According to:
GENERAL MUNICIPAL LAW ARTICLE 12B, SECTION 239 L, M, N
(Please answer ALL questions as fully as possible)

1. REFERRING BOARD(S) INFORMATION

Board(s) Town of Bergen Planning Board
Address 10 Hunter St
City, State, Zip Bergen, NY 14416
Phone ( ) - Ext.

2. APPLICANT INFORMATION

Name Geis Construction South LLC (GE Bergen Owner, LLC)
Address 10020 Aurora Hudson Rd
City, State, Zip Streetsboro, OH 44241
Phone (440) 454 - 5195 Ext. Email

MUNICIPALITY: ☐ City ☒ Town ☐ Village of Bergen

3. TYPE OF REFERRAL: (Check all applicable items)

- ☒ Area Variance
- ☐ Use Variance
- ☐ Special Use Permit
- ☒ Site Plan Review
- ☐ Zoning Map Change
- ☐ Zoning Text Amendments
- ☐ Comprehensive Plan/Update
- ☐ Other:

Subdivision Proposal
- ☐ Preliminary
- ☐ Final

4. LOCATION OF THE REAL PROPERTY PERTAINING TO THIS REFERRAL:

A. Full Address NYS Route 19 (South Lake Rd)
B. Nearest intersecting road Route 33
C. Tax Map Parcel Number SBL #13-1-63.1
D. Total area of the property 49.67 ac Area of property to be disturbed
E. Present zoning district(s) INT-I

5. REFERRAL CASE INFORMATION:

A. Has this referral been previously reviewed by the Genesee County Planning Board?

☒ NO ☐ YES If yes, give date and action taken

B. Special Use Permit and/or Variances refer to the following section(s) of the present zoning ordinance and/or law

variance needed for height of building- current code is 40ft requesting 42ft

C. Please describe the nature of this request

Building is being construcgted for OXBO industrial, the facility will replace theri excisting operation in Byron NY

The Facility will manufacture custom built, specialized farming equipment for the ag industry

6. ENCLOSURES – Please enclose copy(s) of all appropriate items in regard to this referral

- ☒ Local application
- ☒ Site plan
- ☐ Subdivision plot plans
- ☐ SEQR forms
- ☒ Zoning text/map amendments
- ☐ Location map or tax maps
- ☐ Elevation drawings
- ☒ Agricultural data statement
- ☐ New or updated comprehensive plan
- ☐ Photos
- ☐ Other:

7. CONTACT INFORMATION of the person representing the community in filling out this form (required information)

Name Gary Fink Title Chairperson Planning Phone ( ) - Ext.
Address, City, State, Zip 10 Hunter St. Bergen Ny 14416 Email

TOWN OF BERGEN
APPLICATION TO THE BOARD OF APPEALS

Appeal Number : SP-240002

Date : _____

OWNER

Name : Genesee County Economic Development Center
Address : 99 Med Tech Drive, Suite 106
Batavia, NY 14020
Telephone # : 585-343-4866

APPLICANT (If other than owner)

Name : Metzger Civil Engineering, PLLC
Address : on behalf of GCEDC
8245 Sheridan Drive,
Williamsville, NY 14221
Telephone # : 716-633-2601

1. Request to the Board of Appeals to overturn the Zoning Enforcement Officer's decision to DENY [redacted] GRANT [ ] an application for a Zoning Permit Application Number Building Permit Dated 5/7/24 .

2. APPLICATION FOR : Use Variance [ ] Other [ ]
Area Variance [redacted] Height variance to 42'
Interpretation [ ] Please Specify

3. Address of Project Site : TBD, Off NYS Route 19 (S. Lake Road) Bergen, NY
Tax Map Number : SBL # 13-1-63.1 Zoning District : Interchange Industrial INT-I

4. Has a previous appeal been filed pertaining to this parcel ? No [redacted]
Yes [ ] If yes, list Appeal No _____ Date _____ Purpose of Request :

5. Justification for Request : General Response Building is being constructed for OXBO, The building is required to have cranes with a 22' hook height. This height in combination with the depth of steel and roof structure puts the highest point of the building at 42'.

A more SPECIFIC RESPONSE should accompany this application on separate sheet(s) of paper. Address each of the statements listed on the back of the GOLD sheet which pertain to your specific appeal.

The Applicant shall submit with this appeal, appropriate supporting materials including, but not limited to, site plans, elevations, traffic circulation diagrams, neighborhood land use maps and any other material that will assist the Board in making a determination regarding this request.

CERTIFICATION : *I hereby certify that I have read and examined this application and supporting attachments and know the same to be true and correct. All provisions of laws and ordinances covering this type of work or use will be complied with whether specified herein or not. The granting of an appeal does not presume to give authority to violate or cancel the provisions of any other state or local ordinance or law regulating construction or performance of construction and/or use.*

Applicant's Signature

Owner's Signature (if other than applicant)

PROVISIONS of ZONING LAW APPEALED:

1. [ ] Article ____ Section ____
Subsection ____ Paragraph ____
state reason; _____

2. [ ] Schedule A - state reason; _____

OFFICE USE ONLY

FEE COLLECTED : Check #

Appeal Fee $

Public Hearing Fee $

TOTAL FEE $

Signature Zoning Enforcement Officer

Date

RAPatterson '97

COPY DISTRIBUTION : White - Z.E.O. Yellow - PLANNING BOARD Pink - BOARD OF APPEALS Gold - APPLICANT

Town of Bergen Zoning Board of Appeals

Variance and Special Use Findings and Decisions

Applicant: OXBO (Metzger Civil Engineering) 8245 Sheridan Dr. Williamsville NY 142 **Variance #** SP-2402

Published Noice on _____

Notice to County Sent on _____

Hearing Held on 6/20/24

Property Location SBL # 13-1-63.1

Requirement for which Variance is Requested

Schedule A →

Applicable Section of the Town Zoning Code _____

Factors Considered:

1. **Whether undesirable change would be produced in the character of the neighborhood or a detriment to nearby properties: YES** _____ **NO** X

   Reasons Industrial area

2. **Whether benefit sought by applicant can be achieved by a feasible alternative to the variance: YES** _____ **NO** X

   Reasons Equipment

3. **Whether the requested variance is substantial: YES** X **NO** _____

   Reasons NOT asking for more than they need

4. **Would the variance have an adverse impact on the physical or environmental conditions in the neighborhood? YES** _____ **NO** X

   Reasons Industrial area

5. **Whether the alleged difficulty was self-created: YES** X **NO** _____

   Reasons Violates code

Determination of the ZBA Based on the previous 5 Factors:

The ZBA, after taking into consideration the five factors from page 1, finds that:

- ✓ **The benefit to the applicant does not outweigh the detriment to the neighborhood or the community and therefore the variance is denied.**

- ○ **The benefit to the applicant does outweigh the detriment to the neighborhood or community.**

Reasons: Industrial ~~Area~~ Interchange

The ZBA further finds that a variance of 7' **from Section** Sch A **of the zoning code is the minimum variance that should be granted to preserve and protect the character of the neighborhood and the health, safety and welfare of the community because:**

Conditions: The ZBA finds that the following conditions are necessary to minimize adverse impacts upon the neighborhood or community, for the following reasons:

Condition #1 N/A

Condition #2

Condition #3

Adverse impact to be minimized:

Date: 6/20/2024 Paul Rapp

Chairman ZBA

APPLICATION FOR ZONING ☐ and/or BUILDING ☒ PERMIT

TOWN OF BERGEN, N. Y. 14416

APPLICATION NUMBER: BP-15-24

APPLICATION DATE: 5/7/24

OWNER
Name: GE Bergen Owner, LLC
Address: 10020 Aurora Hudson Road
Streetsboro, OH 44241
Phone #: 440-454-5195

APPLICANT (if different than owner)
Name: Geis Construction South LLC
Address: 10020 Aurora Hudson Road
Streetsboro, OH 44241
Phone #: 440-454-5195

MUST BE FILLED IN ▶▶▶▶▶▶▶▶▶▶▶▶ **PROJECT SITE LOCATION:** NYS Route 19 (S. Lake Road) **Tax Map # (TMP)** SBL# 13-1-63.1 (Check w/ local Assessor or Tax Bill)

INSTRUCTIONS: *Using a ball point pen please fill out this application as completely as possible. Submit additional Attachment(s) [listed on the back of the Gold sheet] and the completed application to the Zoning Enforcement Officer (Z.E.O.). This application is NON-TRANSFERRABLE and is NOT a permit to commence work.*

1. Application for Use: RESIDENTIAL ☐; COMMERCIAL ☐; INDUSTRIAL ☒; RECREATIONAL ☐; SITE PLAN ☐; AG. ☐
2. Permit for: NEW CONSTRUCTION ☒; ADDITION ☐; ALTERATION ☐; REPAIR ☐; CHANGE IN USE ☐
3. Is this parcel? ; A corner lot: YES ☐ NO ☒; In a Sewer District? YES ☒ NO ☐; In a Water District? YES ☒ NO ☐
4. List the DIMENSIONS of the parcel: 1809' x 14701'± and/or TOTAL PARCEL AREA (Acres) 49.67
5. What are the parcel setbacks [Ft.] from the project. FRONT 80' ; REAR 35' & SIDE yards (a) 40' (b) 40'
6. Total % of coverage of ALL buildings on the parcel (including the proposed project): 9.24 TOTAL %
7. Does this project require County Health Department approval? NO ☐ YES ☒ , If yes, submit attachment F. RPZ
8. Is this parcel properly subdivided? NO ☐ YES ☒ , If yes, provide approved survey map.
9. Do you give the Town VALID CONSENT to do the required inspections? YES ☒ NO ☐ , If no, what procedures?
10. Name of Architect/Engineer GDOT Design, LLC Telephone # 330-528-3500
    Address 10020 Aurora Hudson Road, Streetsboro, OH 44241
11. Name of Contractor(s) Geis Construction South, LLC Telephone # 440-454-5195
    Address 10020 Aurora Hudson Road, Streetsboro, OH 44241
12. Estimated cost of the project? $35,000,000. *[Substantiation may be required]*
13.

PROPOSED PROJECT	HEIGHT	LENGTH	WIDTH	SQ. FT.
HOUSE (1st. floor)				
OTHER (or 2nd floor)				
GARAGE				
ACCESSORY BUILDING				
SWIMMING POOL				
DECK				
COMMERCIAL/INDUSTRIAL	42'	400'	450'	195,000.
TOTAL SQ. FT.				195,000.

14. Total Dwelling units: 0
15. Will electric be installed? Yes ☒ No ☐
16. Describe the proposed project and use:
Building is being constructed for OXBO Industrial. The facility will replace their existing operation in Byron, NY. The facility will manufacture custom built, specialized farming equipment for the agricultural industry.

[Use additional sheet(s) for more information]

I hereby certify that I have read the instructions and examined this application and supporting attachments and know the same to be true and correct. All provisions of laws and ordinances covering this type of work or use will be complied with whether specified herein or not. The granting of a permit does not presume to give authority to violate or cancel provisions of any other state or local law or ordinance regulating construction or performance of construction.

Signature - OWNER (Geis Authorized Representative) Date 5/7/24

Signature - APPLICANT (if different than owner) Joseph Schaal, CFO, Geis Construction South LLC Date 5/7/24

OFFICE USE ONLY

Action taken by Zoning Enforcement Officer : APPROVED ☐ DENIED ☐ , Action necessary: SPECIAL USE: ☐ SITE PLAN: ☐ SCHEDULE A: ☐ VARIANCE: Area ☐ Use ☐

Article ____ Section ____ Subsection ____ Paragraph ____ Briefly Describe: ____

Zoning District: ____

Attachments Required: ____

Z.E.O. ____ Signature

Date of Action: ____

	YES	NO
Wetlands	☐	☐
Flood Plain	☐	☐

FEES

Zoning	$ ____
Building	$ ____
Electric	$ ____
Late	$ ____
TOTAL	$ ____

Cash: ____
Check #: ____
Receipt #: ____

COPY DISTRIBUTION: White - Z.E.O. Canary - CLERK Pink - C.E.O. Gold - APPLICANT

METZGER CIVIL ENGINEERING, PLLC

May 7, 2024

Gerald Wood, CEO, ZEO
Town of Bergen
10 Hunter Street
Bergen, NY 14416

RE: OXBO
Area Variance Request

Dear Mr. Wood:

Enclosed herewith, please find the following materials in support of a needed area variance for the subject project. The project involves the construction of a 195,000 square foot facility for the manufacture of custom built specialized farming equipment to serve the agricultural industry. This facility will allow for the continued growth of this business that was started here in Genesee County and has expanded worldwide. The owner and design team have been able to develop a site that is in full compliance with every aspect of the town's zoning ordinance with one exception and that is the building height. The maximum allowed building height in the Interchange Industrial Zoning classification is 35'. There is a need for cranes in the building with a 22' hook height. Once crane lift height, steel framing for the cranes and the roof structure are factored in the building height needs to be 42'. As such we respectfully request an area variance of 7' to allow for the facility to be constructed.

Enclosed you will find:

- Building Permit Application
- Application to the Zoning Board of Appeals
- Form acknowledging understanding of the owner's responsibility to contact the Genesee County Planning Dept, regarding qualification for public water
- Project conceptual site plan
- Building elevation plan
- Conceptual building rendering
- Property survey

Upon review of the enclosed materials and after careful consideration of the project, its needs and answers to the five standard questions to be considered when assessing an area variance request:

1. that no undesirable change will be produced in the character of the neighborhood and no detriment to nearby properties will be created by the granting of the requested area variance and

8245 Sheridan Drive, Williamsville, NY 14221 **Phone 716-633-2601/Fax 716-633-2704**

2. that the benefit sought by the applicant cannot be achieved by some other method other than an area variance and

3. that the area variance is not substantial in the context of the overall project and

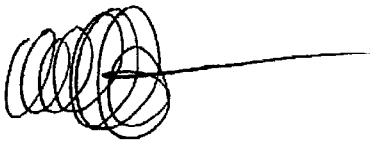
4. that the proposed variance will have no adverse effect or impact on the physical or environmental conditions in the neighborhood or district and

5. that the alleged difficulty is not self created in that it is a condition necessary for this type of operation;

such that in conclusion it will be determined that the benefit to the applicant outweighs any perceived detriment to the health, safety and welfare of the neighborhood or community and thus the requested area variance should be granted.

It would be greatly appreciated if you would forward these materials to the Zoning Board of Appeals and place the request on the agenda of the Zoning Board of Appeals for their May 16, 2024 meeting. Please contact the undersigned should you have any questions and thank you for your ongoing assistance.

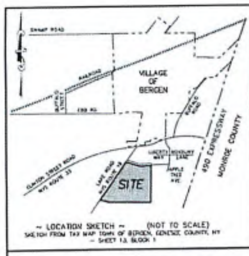
Yours Truly,



Michael J. Metzger, P.E.

CC: David R. Ciurzynski
Kevin Watts
Zoning Board of Appeals

letters/M-2405VarianceRequest0Xbow-5-07-24.doc



– LEGEND –
● = IRON PIN/PIPE FOUND
FIRE HYDRANT
UTILITY POLE
LIGHT POLE
PIPELINE MARKER
CATCH BASIN
D&M = DEED & MEASURED
M&M = MAP & MEASURED
D/M/M = DEED, MAP & MEASURED

– FLOOD ZONE NOTE –
PROPERTY IS LOCATED WITHIN ZONE C
– AREA OUTSIDE 500-YEAR FLOOD
TOWN OF BERGEN, GENESEE COUNTY, NEW YORK
COMMUNITY 361378, PANEL 08
EFFECTIVE DATE: JULY 6, 1984

PRELIMINARY ALTA/NSPS LAND TITLE SURVEY OF LOT 7 OF THE APPLE TREE ACRES CORPORATE PARK

PENDING RECEIPT OF TITLE DOCUMENTS
BEING PART OF LOTS 10 & 11, SECTION 6, TOWNSHIP 2 OF THE TRIANGLE TRACT
SITUATE IN THE

TOWN OF BERGEN, GENESEE COUNTY, NEW YORK

MARCH 26, 2024
REVIEWED/REFERENCED ABSTRACT: APRIL 9, 2024

– CERTIFICATION –
This is to certify that this map or plan and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 1, 3, 4, 6, 8, 11(a), 13, 14, 15, 17, 18, and 19 of Table A thereof. The fieldwork was completed on March 20, 2024.

Date of Plat or Map: March 26, 2024

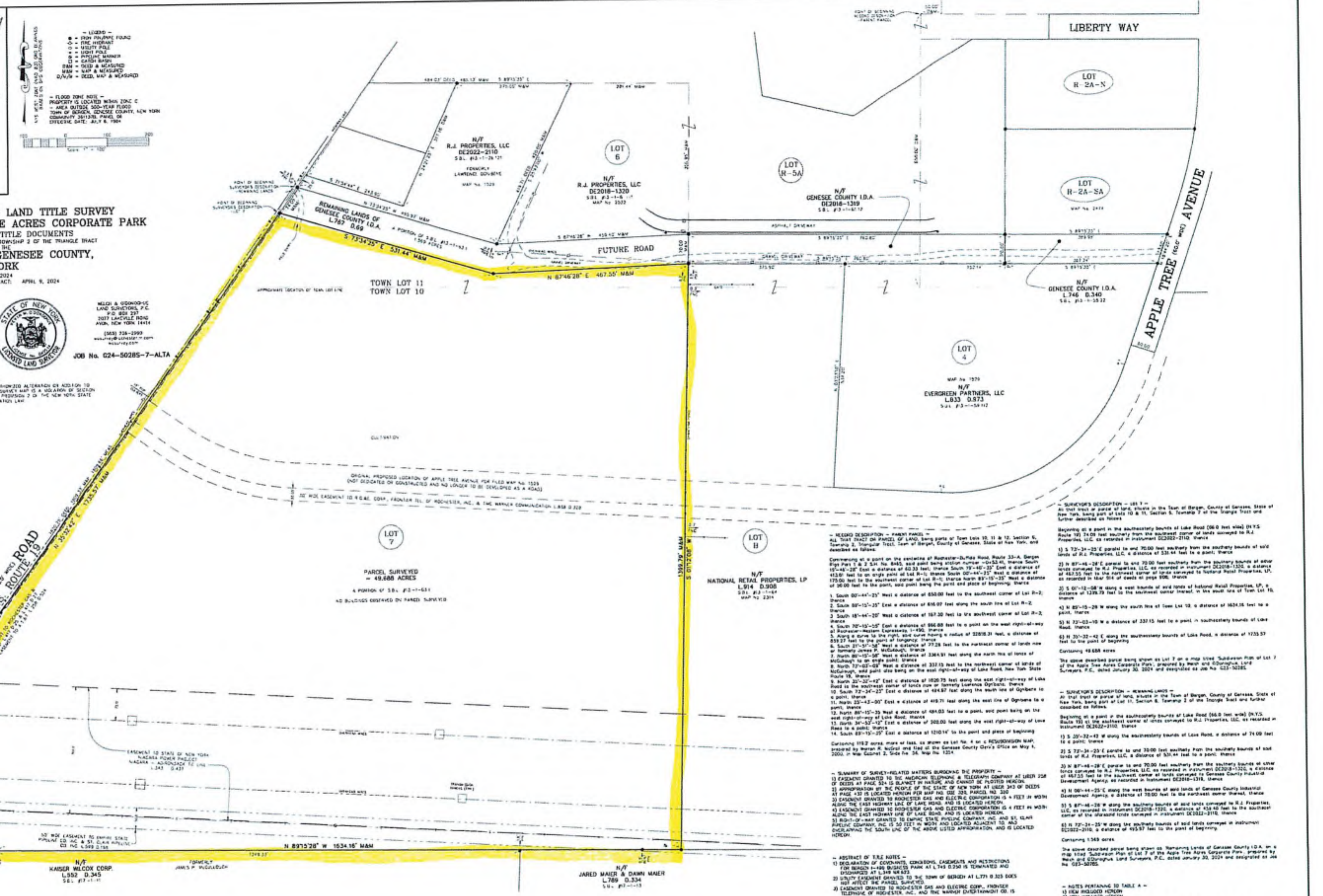
KEVIN M. O'DONOGHUE, P.L.S.
Registered Land Surveyor No. 049514 in the State of New York

WELCH & O'DONOGHUE LAND SURVEYORS, P.C.
P.O. BOX 297
2037 LAKEVILLE ROAD
AVON, NEW YORK 14414
(585) 226-2990

JOB No. G24-50285-7-ALTA

– REFERENCES –
1) DEED TO GENESEE COUNTY INDUSTRIAL DEVELOPMENT AGENCY L.767 D.69
2) SUBDIVISION PLAN OF LOT 7 OF THE APPLE TREE ACRES CORPORATE PARK
PREPARED BY WELCH & O'DONOGHUE, LAND SURVEYORS, P.C.
DATED: JANUARY 30, 2024
JOB No. G23-50285
3) FILED MAPS Nos. 1529, 2310, 2314, 2474 & 2532
4) STEWART TITLE INSURANCE COMPANY
ABSTRACT No. 81337168
DATED: MARCH 27, 2024

NOTE:
UNAUTHORIZED ALTERATION OR ADDITION TO THIS SURVEY MAP IS A VIOLATION OF SECTION 7209 PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW



– RECORD DESCRIPTION – PARENT PARCEL –
ALL THAT TRACT OR PARCEL OF LAND, being parts of Town Lots 10, 11 & 12, Section 6, Township 2, Triangular Tract, Town of Bergen, County of Genesee, State of New York, and described as follows:

Commencing at a point on the centerline of Rochester-Buffalo Road, Route 33-A, Bergen Elgn Part 1 & 2 S.H. No. 8463, said point being station number –0+53.41; thence South 19°-46'-28" East a distance of 60.33 feet; thence South 19°-40'-33" East a distance of 413.61 feet to an angle point of Lot R-1; thence South 00°-44'-25" West a distance of 175.00 feet to the southeast corner of Lot R-1; thence North 89°-15'-35" West a distance of 36.00 feet to the point, said point being the point and place of beginning; thence

1. South 00°-44'-25" West a distance of 650.00 feet to the southeast corner of Lot R-2; thence
2. South 89°-15'-35" East a distance of 616.07 feet along the south line of Lot R-2; thence
3. South 18°-44'-20" West a distance of 167.30 feet to the southwest corner of Lot R-3; thence
4. South 70°-15'-55" East a distance of 666.88 feet to a point on the west right-of-way of Rochester-Western Expressway, I-490; thence
5. Along a curve to the right, said curve having a radius of 22818.31 feet, a distance of 859.27 feet to the point of tangency; thence
6. South 21°-51'-58" West a distance of 77.28 feet to the northeast corner of lands now or formerly James P. McCullough; thence
7. North 89°-15'-58" West a distance of 3364.91 feet along the north line of lands of McCullough to an angle point; thence
8. North 73°-03'-09" West a distance of 337.15 feet to the northwest corner of lands of McCullough, said point also being on the east right-of-way of Lake Road, New York State Route 19; thence
9. North 35°-32'-42" East a distance of 1820.75 feet along the east right-of-way of Lake Road to the southwest corner of lands now or formerly Lawrence Ognibene; thence
10. South 73°-34'-25" East a distance of 484.87 feet along the south line of Ognibene to a point; thence
11. North 25°-43'-00" East a distance of 419.71 feet along the east line of Ognibene to a point; thence
12. North 89°-15'-35 West a distance of 484.03 feet to a point, said point being on the east right-of-way of Lake Road; thence
13. North 34°-53'-12" East a distance of 302.00 feet along the east right-of-way of Lake Road to a point; thence
14. South 89°-15'-25" East a distance of 1210.14' to the point and place of beginning

Containing 119.2 acres, more or less, as shown as Lot No. 4 on a RESUBDIVISION MAP, prepared by Warren R. McGrail and filed at the Genesee County Clerk's Office on May 4, 2000, in Map Cabinet 2, Slide No. 34, Map No. 1354

– SUMMARY OF SURVEY-RELATED MATTERS BURDENING THE PROPERTY –
1) EASEMENT GRANTED TO THE AMERICAN TELEPHONE & TELEGRAPH COMPANY AT LIBER 258 OF DEEDS AT PAGE 524 IS BLANKET IN NATURE AND CANNOT BE PLOTTED HEREON.
2) APPROPRIATION BY THE PEOPLE OF THE STATE OF NEW YORK AT LIBER 343 OF DEEDS AT PAGE 437 IS LOCATED HEREON PER MAP NO. 000 320, PARCEL NO. 320
3) EASEMENT GRANTED TO ROCHESTER GAS AND ELECTRIC CORPORATION IS 4 FEET IN WIDTH ALONG THE EAST HIGHWAY LINE OF LAKE ROAD, AND IS LOCATED HEREON.
4) EASEMENT GRANTED TO ROCHESTER GAS AND ELECTRIC CORPORATION IS 4 FEET IN WIDTH ALONG THE EAST HIGHWAY LINE OF LAKE ROAD, AND IS LOCATED HEREON.
5) RIGHT-OF-WAY GRANTED TO EMPIRE STATE PIPELINE COMPANY, INC. AND ST. CLAIR PIPELINE COMPANY, INC. IS 50 FEET IN WIDTH AND LOCATED ADJACENT TO, AND OVERLAPPING THE SOUTH LINE OF THE ABOVE LISTED APPROPRIATION, AND IS LOCATED HEREON.

– ABSTRACT OF TITLE NOTES –
1) DECLARATION OF COVENANTS, CONDITIONS, EASEMENTS AND RESTRICTIONS FOR BERGEN I-490 BUSINESS PARK AT L.749 D.250 IS TERMINATED AND DISCHARGED AT L.349 MR.673
2) UTILITY EASEMENT GRANTED TO THE TOWN OF BERGEN AT L.771 D.325 DOES NOT AFFECT THE PARCEL SURVEYED.
3) EASEMENT GRANTED TO ROCHESTER GAS AND ELECTRIC CORP., FRONTIER TELEPHONE OF ROCHESTER, INC., AND TIME WARNER ENTERTAINMENT CO. IS PLOTTED HEREON.

– SURVEYOR'S DESCRIPTION – LOT 7 –
All that tract or parcel of land, situate in the Town of Bergen, County of Genesee, State of New York, being part of Lots 10 & 11, Section 6, Township 2 of the Triangle Tract and further described as follows:

Beginning at a point in the southeasterly bounds of Lake Road (66.0 feet wide) (N.Y.S. Route 19) 74.09 feet southerly from the southwest corner of lands conveyed to R.J. Properties, LLC, as recorded in instrument DE2022-2110; thence

1) S 73°-34'-25" E parallel to and 70.00 feet southerly from the southerly bounds of said lands of R.J. Properties, LLC, a distance of 531.44 feet to a point; thence

2) N 87°-46'-28" E parallel to and 70.00 feet southerly from the southerly bounds of other lands conveyed to R.J. Properties, LLC, as recorded in instrument DE2018-1320, a distance of 467.55 feet to the northwest corner of lands conveyed to National Retail Properties, LP, as recorded in liber 914 of deeds at page 908; thence

3) S 01°-12'-08" W along a west bounds of said lands of National Retail Properties, LP, a distance of 1359.79 feet to the southwest corner thereof, in the south line of Town Lot 10; thence

4) N 89°-15'-28" W along the south line of Town Lot 10, a distance of 1634.16 feet to a point; thence

5) N 73°-03'-10" W a distance of 337.15 feet to a point in southeasterly bounds of Lake Road; thence

6) N 35°-32'-42" E along the southeasterly bounds of Lake Road, a distance of 1735.57 feet to the point of beginning

Containing 49.688 acres

The above described parcel being shown as Lot 7 on a map titled "Subdivision Plan of Lot 7 of the Apple Tree Acres Corporate Park", prepared by Welch and O'Donoghue, Land Surveyors, P.C., dated January 30, 2024 and designated as Job No. G23-50285.

– SURVEYOR'S DESCRIPTION – REMAINING LANDS –
All that tract or parcel of land, situate in the Town of Bergen, County of Genesee, State of New York, being part of Lot 11, Section 6, Township 2 of the Triangle Tract and further described as follows:

Beginning at a point in the southeasterly bounds of Lake Road (66.0 feet wide) (N.Y.S. Route 19) at the southwest corner of lands conveyed to R.J. Properties, LLC, as recorded in instrument DE2022-2110; thence

1) S 35°-32'-42" W along the southeasterly bounds of Lake Road, a distance of 74.09 feet to a point; thence

2) S 73°-34'-25" E parallel to and 70.00 feet southerly from the southerly bounds of said lands of R.J. Properties, LLC, a distance of 531.44 feet to a point; thence

3) N 87°-46'-28" E parallel to and 70.00 feet southerly from the southerly bounds of other lands conveyed to R.J. Properties, LLC, as recorded in instrument DE2018-1320, a distance of 467.55 feet to the southwest corner of lands conveyed to Genesee County Industrial Development Agency, as recorded in instrument DE2018-1319; thence

4) N 00°-44'-25" E along the west bounds of said lands of Genesee County Industrial Development Agency, a distance of 70.00 feet to the northwest corner thereof; thence

5) S 87°-46'-28" W along the southerly bounds of said lands conveyed to R.J. Properties, LLC, as recorded in instrument DE2018-1320, a distance of 459.40 feet to the southwest corner of the aforesaid lands conveyed in instrument DE2022-2110; thence

6) N 73°-34'-25" W along the southerly bounds of said lands conveyed in instrument DE2022-2110, a distance of 495.97 feet to the point of beginning.

Containing 1.565 acres

The above described parcel being shown as "Remaining Lands of Genesee County I.D.A." on a map titled "Subdivision Plan of Lot 7 of the Apple Tree Acres Corporate Park", prepared by Welch and O'Donoghue Land Surveyors, P.C., dated January 30, 2024 and designated as Job No. G23-50285.

– NOTES PERTAINING TO TABLE A –
1) ITEM INCLUDED HEREON
3) ITEM INCLUDED HEREON
4) ITEM INCLUDED HEREON
6) NO ZONING REPORT OR LETTER PROVIDED TO SURVEYOR BY CLIENT OR CLIENT'S REPRESENTATIVE
8) ITEM INCLUDED HEREON
11a) UNDERGROUND GAS LINE, WATER LINE, AND STORM CULVERTS INCLUDED HEREON PER Topo_Survey_CAD.dwg PROVIDED BY CPL PER EMAIL ON FEBRUARY 10, 2024
13) ITEM INCLUDED HEREON
14) ITEM NOT SPECIFIED BY CLIENT
15) NO EVIDENCE OBSERVED IN THE PROCESS OF CONDUCTING FIELDWORK
17) NO PROPOSED CHANGES MADE AVAILABLE TO SURVEYOR. NO EVIDENCE OBSERVED IN THE PROCESS OF CONDUCTING FIELDWORK.
18) ITEM INCLUDED HEREON. SEE SUMMARY OF SURVEY-RELATED MATTERS BURDENING THE PROPERTY.
19) ITEM NOT ADDRESSED HEREON

AGRICULTURAL DATA STATEMENT

NYS Agricultural and Markets Law requires the submission of an agricultural data statement by an applicant to the municipality for a rezoning, special use permit, site plan approval, use variance, or subdivision of parcel(s) occurring on property within an agricultural district containing a farm operation or on property within 500 feet of an active farm operation located in an agricultural district.

Applicant's Name & Address	Owner's Name & Address *(if different from applicant)*
METZGER CIVIL ENGINEERING - AGENT	GEIS CONSTRUCTION SOUTH, LLC
8245 SHERIDAN DRIVE	10020 AURORA - HUDSON ROAD
WILLIAMSVILLE NY 14221	STREETSBORO, OHIO 44241
716-633-2601	

Type of Application			
	☐ Rezoning	☐ Special Use Permit	☒ Site Plan Approval
	☐ Use Variance	☐ Subdivision Approval	

Project Description:

OXBO MANUFACTURING FACILITY - 195,000 ± SQ FT
7015 SOUTH LAKE ROAD, TOWN OF BERGEN NY
- A NEW MANUFACTURING BUILDING, DRIVEWAYS,
PARKING AND RELATED INFRASTRUCTURE

Project Address: 7015 SOUTH LAKE ROAD, BERGEN, NEW YORK

Project Location: EAST SIDE OF SLAKE ROAD WITHIN THE
(Example: west side of Main Street or 250 feet south of Second Avenue)
APPLETREE ACRES BUSINESS PARK.

Project Size: 49.7 ACRES
(Square footage, acreage, etc.)

Current Use of Site: AGRICULTURE
(Identify: idle, hay, pasture, crop, brushland, forest, dairy, tilled, orchard, single residence, etc.)

History of Farming on Site:
(Last year farmed, type of activity, number of acres, by owner or another, etc.)

SITE IS CURRENTLY BEING FARMED

Other Site Information:
(Drainage direction and features, e.g. ditches, tiles, streams, gullies, proposed changes, etc.)

WETLAND ON SOUTH OF SITE - TO BE PRESERVED

Include a tax or other map with project boundaries clearly marked and with nearby farm operations indicated. *(Municipal assessor or County tax office may be able to assist with this requirement.)*

Use the space below to provide the full mailing address of all farm operations within 500 feet of this project, including lands used in agricultural production. If necessary, please continue on a separate sheet. *(Municipal assessor or County tax office may be able to assist with this requirement.)*

MARY BISSEL SBL 13-1-21.1 + 24.1
0 CLINTON STREET ROAD

EUNICE ELY SBL 13-1-19.11
0 SOUTH LAKE ROAD

Applicant Signature: _____

Owner Signature: _____
(If different from applicant)

THE MUNICIPALITY MUST REFER A COPY OF THIS STATEMENT TO THE ERIE COUNTY DEPARTMENT OF ENVIRONMENT & PLANNING, 95 FRANKLIN STREET, BUFFALO, NY 14202 AND TO ALL ADDRESSES ON THE FARM OPERATION MAILING LIST

TOWN OF BERGEN

10 HUNTER STREET
BERGEN, NY 14416

OXBO MANUFACTURING FACILITY PROJECT
7015 SOUTH LAKE ROAD

STATE ENVIRONMENTAL QUALITY REVIEW (SEQR)
LEAD AGENCY COORDINATION
PACKAGE

JUNE 2024

Prepared by

MRB group
Engineering, Architecture & Surveying, D.P.C.

THE CULVER ROAD ARMORY
145 CULVER ROAD, SUITE 160, ROCHESTER, NEW YORK 14620
TELEPHONE: (585) 381-9250 FACSIMILE: (585) 381-1008

June 6, 2024

To: Involved Agencies under SEQR (Distribution List Attached)
RE: Town of Bergen – Oxbo Manufacturing Facility – 7015 South Lake Road
MRB Group Project No. 0202.24000.000 – Phase 008

Pursuant to the State Environmental Quality Review (SEQR) Act, please be advised that the Town of Bergen Planning Board (hereinafter referred to as "Planning Board") intends to establish itself as Lead Agency for the purpose of implementing the SEQR requirements with respect to the project described below. Enclosed for your review is Part I of the SEQR Full Environmental Assessment Form (EAF), Lead Agency Coordination Request Form, and Project Information.

The project involves the construction of a new 195,000 +/- square foot manufacturing facility for OXBO that will consist of driveways, parking, and related infrastructure improvements to service the new building. The building will be located on South Lake Road (Route 19) south of Clinton Street Road (Route 33). The new development will be located on a currently undeveloped 49.7-acre parcel in the Town of Bergen, NY.

In accordance with 6NYCRR Part 617, all involved agencies must agree upon the Lead Agency designation within 30 calendar days of the date of receipt of this letter and the enclosed Full EAF Part 1. To facilitate such an agreement and to provide for sufficient time for discussion, if any, the Planning Board requests that all response forms to this notice be returned to the noted address as soon as possible.

In the event that a response is not received at or before **12:00 PM on Monday, July 8, 2024** your agency will be deemed to have no objection to the Town of Bergen Planning Board assuming Lead Agency status for the purpose of this project. To facilitate your response, please complete the enclosed SEQR Lead Agency Coordination Request Form and return it as part of your response.

Sincerely,

Wiley Little

Wiley Little, P.E.
MRB Group, Engineering, Architecture, Surveying, D.P.C.

C Gary Fink, Planning Board Chairman – Town of Bergen
Teresa Robinson, Town Clerk – Town of Bergen
Ernie Haywood, Town Supervisor – Town of Bergen
Matthew Sousa – MRB Group, Engineering, Architecture, Surveying, D.P.C.
Scott Mattison, P.E. – MRB Group, Engineering, Architecture, Surveying, D.P.C.
All Involved Agencies

TOWN OF BERGEN
OXBO MANUFACTURING FACILITY PROJECT
7015 SOUTH LAKE ROAD

SEQR LEAD AGENCY COORDINATION REQUEST FORM

__X__ This Agency has no objection to the Town of Bergen Planning Board assuming Lead Agency status for this action.

_____ This Agency wishes to be considered for Lead Agency for this action.

_____ Other (see comments below)

Comments: **The Genesee County Planning Board will comment via the GML 239 referral process.**

Genesee County Planning Board c/o Department of Planning

Agency

Signature

Director of Planning

Title

6/6/2024

Date

PLEASE RETURN TO: Town of Bergen
Attn: Gary Fink, Planning Board Chairperson
10 Hunter Street
Bergen, NY 14416
PH (585) 355-0135
gcfink@hotmail.com

NOTE:
If this form is not returned at or before **12:00 PM on Monday, July 8, 2024** your agency will be deemed to have no objection to the Town of Bergen Planning Board assuming Lead Agency status for this action.

TOWN OF BERGEN

10 HUNTER STREET
BERGEN, NY 14416

OXBO MANUFACTURING FACILITY PROJECT
7015 SOUTH LAKE ROAD

STATE ENVIRONMENTAL QUALITY REVIEW (SEQR)
LEAD AGENCY COORDINATION
PACKAGE

JUNE 2024

Prepared by

MRB group
Engineering, Architecture & Surveying, D.P.C.

THE CULVER ROAD ARMORY
145 CULVER ROAD, SUITE 160, ROCHESTER, NEW YORK 14620
TELEPHONE: (585) 381-9250 FACSIMILE: (585) 381-1008

June 6, 2024

To: Interested Agencies under SEQR (Distribution List Attached)
RE: Town of Bergen – Oxbo Manufacturing Facility – 7015 South Lake Road
MRB Group Project No. 0202.24000.000 – Phase 008

The Town of Bergen Planning Board is currently in the process of establishing itself as Lead Agency under the State Environmental Quality Review (SEQR). The enclosed information has been sent to your agency because it has been determined that you may have some interest in the project.

The project involves the construction of a new 195,000 +/- square foot manufacturing facility for OXBO that will consist of driveways, parking, and related infrastructure improvements to service the new building. The building will be located on South Lake Road (Route 19) south of Clinton Street Road (Route 33). The new development will be located on a currently undeveloped 49.7-acre parcel in the Town of Bergen, NY.

If you would like more information on the project, please feel free to contact the Town of Bergen Town Hall at (585) 494-1121.

Sincerely,

Wiley Little

Wiley Little, P.E.
MRB Group, Engineering, Architecture, Surveying, D.P.C.

C Gary Fink, Planning Board Chairman – Town of Bergen
Teresa Robinson, Town Clerk – Town of Bergen
Ernie Haywood, Town Supervisor – Town of Bergen
Matthew Sousa – MRB Group, Engineering, Architecture, Surveying, D.P.C.
Scott Mattison, P.E. – MRB Group, Engineering, Architecture, Surveying, D.P.C.
All Interested Agencies

SEQR - INVOLVED AGENCY LIST

Monroe County Water Authroity
Attn: Nicholas A. Noce Executive Director
475 Norris Dr,
Rochester, NY 14610
information@mcwa.com

Gensee County Highway Department
53 Cedar Street
Batavia, NY 14020
highway@co.genesee.ny.us

Genesee County Public Health Department
Attn: Director Paul Pettit
3837 West Main Street Road,
Batavia, NY 14020
health@co.genesee.ny.us

New York State Department of Environmental Conservation
Region 8
Attn: Regional Permit Administrator
6274 East Avon-Lima Rd.
Avon, NY 14414
Dep.r8@dec.ny.gov

New York State Department of Agriculture & Markets
Attn: Michael Latham
Division of Land and Water Resources
10B Airline Drive
Albany, New York 12235
michael.latham@agriculture.ny.gov

New York Department of Transportation
Attn: Denise Willard, Region 4 Permits Coordinator
1530 Jefferson Road
Rochester, New York 14623-3161
Denise.Willard@dot.ny.gov

New York State Department of Health
Attn: Sheryl Robbins, P.E.
Geneva District Office
624 Pre-Emption Road
Geneva, NY 14456-1334
scr04@health.state.ny.us

U.S. Army Corps of Engineers
Department of Army Buffalo District, Corps of Engineers
Attn: Regional Permit Administrator
1776 Niagara Street
Buffalo, New York 14207
June.M.Lathrop@usace.army.mil

U.S. Department of Interior
Fish and Wildlife Service

Attn: Robyn Niver
3817 Luker Road
Cortland, New York 13045
fw5es_nyfo@fws.gov

Town of Bergen Highway Department
18 Gates St,
Bergen, NY 14416
(585) 494-1362
highwaysup@bergenny.org

Village of Bergen Sewer Department
Chris Fay
PO Box 100
11 North Lake Avenue
Bergen, NY 14416
(585) 353-3659
cfay@villageofbergen.com

Genesee County Planning Board
County Building 2
3837 West Main Street Road
Batavia, NY 14020Batavia, NY 14020
Felipe.Oltramari@co.genesee.ny.us

Bergen Fire Department
10 Hunter Street
PO Box 428
Bergen, NY 14416
(585) 494-2100
kevin.bruton.jr@bergenfd.org

SEQR – INTERESTED AGENCIES

NYS Office of Parks, Recreation and Historic Preservation
Attn: Nancy Herter, program Leader/Native American Liaison
Peebles Island Resource Center
Waterford, New York 12188-0189
Note that SHPO is corresponded with through the use of their Cultural Resource Information System (CRIS)

Byron-Bergen Central School District
6917 West Bergen Road
Bergen, NY 14416
Phone: (585) 494-1220
McGee, Patrick, Superintendent
PMcGee@bbschools.org

Genesee County Agricultural Development Board
County Building 2
3837 West Main Street Road
Batavia, NY 14020Batavia, NY 14020
Felipe.Oltramari@co.genesee.ny.us

Full Environmental Assessment Form
Part 1 - Project and Setting

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: OXBO Manufacturing Facility		
Project Location (describe, and attach a general location map): 7015 South Lake Road, Bergen, New York		
Brief Description of Proposed Action (include purpose or need): The project consists of the construction of a new 195,000 +/- square foot manufacturing facility for OXBO in the Town of Bergen, New York. The building will be located on South Lake Road (Route 19) south of Clinton Street Road (Route 33) within the Appletree business park . The project will include driveways, parking and related infrastructure to service the new manufacturing building. The new development will sit on a 49.7 acre parcel, which is currently undeveloped.		
Name of Applicant/Sponsor: Geis Construction South, LLC	Telephone: 440.454.5195 E-Mail: www.geisco.net	
Address: 10020 Aurora - Hudson Road		
City/PO: Streetsboro	State: Ohio	Zip Code: 44241
Project Contact (if not same as sponsor; give name and title/role): Michael J Metzger, Project Engineer	Telephone: 716.633.2601 E-Mail: meteng@roadrunner.com	
Address: 8245 Sheridan Drive		
City/PO: Williamsville	State: New York	Zip Code: 14221
Property Owner (if not same as sponsor): Genesse County Economic Development Center, Attn: Mark Masse	Telephone: 585.343.4866 E-Mail: gcedc@gcedc.com	
Address: 99 Med Tech Drive - STE 106		
City/PO: Batavia	State: New York	Zip Code: 14020

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)		
Government Entity	**If Yes: Identify Agency and Approval(s) Required**	**Application Date (Actual or projected)**
a. City Counsel, Town Board, or Village Board of Trustees ☐Yes☑No		
b. City, Town or Village Planning Board or Commission ☑Yes☐No	Town of Bergen, Planning Board - Site plan	05.20.24
c. City, Town or Village Zoning Board of Appeals ☑Yes☐No	Town of Bergen ZBA - Building height variance	05.07.24
d. Other local agencies ☑Yes☐No	Monroe County Water - RPZ and service tap	05.20.24
e. County agencies ☑Yes☐No	Genesee County Health Department	05.20.24
f. Regional agencies ☑Yes☐No	Genesee County Planning Board	05.20.24
g. State agencies ☑Yes☐No	NYSDOT - ROW work permit NYSDEC - Stormwater SPDES permit - air quality	05.20.24
h. Federal agencies ☐Yes☑No		

i. Coastal Resources.
i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☑Yes☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☐Yes☑No

If Yes, identify the plan(s):

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes☑No

If Yes, identify the plan(s):

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
Interchange Industrial (Int-I)

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? Byron - Bergen Central School District

b. What police or other public protection forces serve the project site?
Genesee County Sheriffs

c. Which fire protection and emergency medical services serve the project site?
Bergen Fire Department

d. What parks serve the project site?
Hickory Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Commercial - light industrial

b. a. Total acreage of the site of the proposed action? 49.7 acres
b. Total acreage to be physically disturbed? 25.0 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 49.7 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: _____ months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____ year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☐Yes ☑No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				
At completion of all phases				

g. Does the proposed action include new non-residential construction (including expansions)? ☑Yes ☐No

If Yes,

i. Total number of structures 1

ii. Dimensions (in feet) of largest proposed structure: 42 height; 500 width; and 450 length

iii. Approximate extent of building space to be heated or cooled: 100 % square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐Yes ☑No

If Yes,

i. Purpose of the impoundment:

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐Other specify:

iii. If other than water, identify the type of impounded/contained liquids and their source.

iv. Approximate size of the proposed impoundment. Volume: million gallons; surface area: acres

v. Dimensions of the proposed dam or impounding structure: height; length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? (Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite) ☐Yes ☑No

If Yes:

i .What is the purpose of the excavation or dredging?

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards):
- Over what duration of time?

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

iv. Will there be onsite dewatering or processing of excavated materials? ☐Yes ☐No

If yes, describe.

v. What is the total area to be dredged or excavated? acres

vi. What is the maximum area to be worked at any one time? acres

vii. What would be the maximum depth of excavation or dredging? feet

viii. Will the excavation require blasting? ☐Yes ☐No

ix. Summarize site reclamation goals and plan:

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐Yes ☑No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description):

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐Yes ☐No

If Yes, describe:

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐Yes ☐No

If Yes:

- acres of aquatic vegetation proposed to be removed:
- expected acreage of aquatic vegetation remaining after project completion:
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access):
- proposed method of plant removal:
- if chemical/herbicide treatment will be used, specify product(s):

v. Describe any proposed reclamation/mitigation following disturbance:

c. Will the proposed action use, or create a new demand for water? ☑Yes ☐No

If Yes:

i. Total anticipated water usage/demand per day: 3375 gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☑Yes ☐No

If Yes:

- Name of district or service area: Monroe County Water District
- Does the existing public water supply have capacity to serve the proposal? ☑Yes ☐No
- Is the project site in the existing district? ☑Yes ☐No
- Is expansion of the district needed? ☐Yes ☑No
- Do existing lines serve the project site? ☐Yes ☑No

iii. Will line extension within an existing district be necessary to supply the project? ☐Yes ☑No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project:
- Source(s) of supply for the district:

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☑No

If, Yes:

- Applicant/sponsor for new district:
- Date application submitted or anticipated:
- Proposed source(s) of supply for new district:

v. If a public water supply will not be used, describe plans to provide water supply for the project:

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☑Yes ☐No

If Yes:

i. Total anticipated liquid waste generation per day: 3,375 gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each):

Sanitary Wastewater

iii. Will the proposed action use any existing public wastewater treatment facilities? ☑Yes ☐No

If Yes:

- Name of wastewater treatment plant to be used: Village of Bergen Sewage treatment plant - 6593 N Lake Road
- Name of district: Town of Bergen
- Does the existing wastewater treatment plant have capacity to serve the project? ☑Yes ☐No
- Is the project site in the existing district? ☑Yes ☐No
- Is expansion of the district needed? ☐Yes ☑No

- Do existing sewer lines serve the project? ☑Yes ☐No
- Will a line extension within an existing district be necessary to serve the project? ☐Yes ☑No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: A new private forcemain will be connected to the existing 12" municipal gravity sewer at Appletree Avenue approximately 1800 ' to the east of the project site.

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☑No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑Yes ☐No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or 11.4 acres (impervious surface)

_____ Square feet or 49.7 acres (parcel size)

ii. Describe types of new point sources. Roof drains, parking areas and driveways

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

Runoff will sheet flow to a gravel diaphragm, grass filter strip, level spreader, bioretention filter bed, dry detetnion area before being released via restricting outlet control structure.

- If to surface waters, identify receiving water bodies or wetlands: _____
- Will stormwater runoff flow to adjacent properties? ☑Yes ☐No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☑Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☑Yes ☐No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

Typical construction equipment

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

Gensrators, heaters

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

Back up generator, test driving of heavy equipment

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☑Yes ☐No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☑No

ii. In addition to emissions as calculated in the application, the project will generate:

- _____ Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____ Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____ Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____ Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____ Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- 10 Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☑Yes ☐No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☑ Morning ☑ Evening ☐Weekend
☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): 5 trucks per day

iii. Parking spaces: Existing 0 Proposed 169 Net increase/decrease 169

iv. Does the proposed action include any shared use parking? ☐Yes ☑No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe: Private driveway

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☑No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☑No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☑No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☑Yes ☐No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: 5 MW

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other): Village of Bergen

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☑No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 7am -7pm
- Saturday: 7am -7pm
- Sunday: None
- Holidays: None

ii. During Operations:

- Monday - Friday: 5 am -4:30pm
- Saturday: 5 am-12pm
- Sunday: None
- Holidays: None

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

Typical construction noises, mild truck traffic during operation and sound of agricultural equipment during testing.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☑ No

Describe:

n. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

Wall packs on the building, pole lights in parking areas will be shielded to contain the light spread

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☑ No

Describe:

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☑ Yes ☐ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures:

Construction equipment during construction, equipment fumes from test track, mild paint fumes

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☑ Yes ☐ No

If Yes:

i. Product(s) to be stored Diesel fuel (1,000 gallons) , Gasoline (1,000 gallons), Hyraulic fluild - (two 1,000 gallon tanks)

ii. Volume(s) _____ per unit time 4 months (e.g., month, year)

iii. Generally, describe the proposed storage facilities:

Above ground tanks with self contained dikes.

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☑ Yes ☐ No

If Yes:

i. Describe proposed treatment(s):

Lawn maintenance products

ii. Will the proposed action use Integrated Pest Management Practices? ☑ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: 10 tons per Month (unit of time)
- Operation : 10 tons per Month (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: Dumpsters for trash and recyclable materials
- Operation: Dumpsters for trash and recyclable materials

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: Dumpsters to be claimed by a licensed hauler
- Operation: Dumpsters to be claimed by a licensed hauler

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☑ Industrial ☑ Commercial ☑ Residential (suburban) ☑ Rural (non-farm)
☐ Forest ☑ Agriculture ☐ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

The site is located in a business park with other commercial and light industrial uses. There are farming activities, commercial businesses and some residences nearby.

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0	11.4	+11.4
• Forested			
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	16.7	16.7	0
• Agricultural (includes active orchards, field, greenhouse etc.)	33.0	0	-33.0
• Surface water features (lakes, ponds, streams, rivers, etc.)			
• Wetlands (freshwater or tidal)			
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: Lawn and landscaping	0	21.6	+21.6

c. Is the project site presently used by members of the community for public recreation? ☐Yes ☑No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☐Yes ☑No

If Yes,

i. Identify Facilities:

_____

_____

e. Does the project site contain an existing dam? ☐Yes ☑No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

_____

_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐Yes ☑No

If Yes:

i. Has the facility been formally closed? ☐Yes ☐ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

_____

_____

iii. Describe any development constraints due to the prior solid waste activities: _____

_____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐Yes ☑No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

_____

_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☐Yes ☑ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐Yes ☐No

☐ Yes – Spills Incidents database — Provide DEC ID number(s): _____

☐ Yes – Environmental Site Remediation database — Provide DEC ID number(s): _____

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures: _____

_____

_____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☑Yes ☐No

If yes, provide DEC ID number(s): 819004

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

A landfill operated in the mid 1970s. The site was properly cleaned and was delisted in January of 1983. The site poses no environmental concerns for the proposed project.

v. Is the project site subject to an institutional control limiting property uses? ☐Yes ☐No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐Yes ☐No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? >6.5 feet

b. Are there bedrock outcroppings on the project site? ☐Yes ☑No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____ %

c. Predominant soil type(s) present on project site:

Lima silt loam	74.3 %
Appleton silt loam	12.9 %
Lyons soils	6.4 %

d. What is the average depth to the water table on the project site? Average: 1.5 feet

e. Drainage status of project site soils:

☑ Well Drained:	2 % of site
☑ Moderately Well Drained:	92 % of site
☑ Poorly Drained	6 % of site

f. Approximate proportion of proposed action site with slopes:

☑ 0-10%:	94 % of site
☑ 10-15%:	6 % of site
☐ 15% or greater:	% of site

g. Are there any unique geologic features on the project site? ☐Yes ☑No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☐Yes ☑No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑Yes ☐No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑Yes ☐No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name Federal wetlands Approximate Size 0.362 ac
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐Yes ☑No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐Yes ☑No

j. Is the project site in the 100-year Floodplain? ☐Yes ☑No

k. Is the project site in the 500-year Floodplain? ☐Yes ☑No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☐Yes ☑No
If Yes:

i. Name of aquifer: _____

m. Identify the predominant wildlife species that occupy or use the project site:

Deer	Skunk	Rabbit
Squirrel	Opossum	Various Insect species
Chipmunk	Mice	Various Bird species

n. Does the project site contain a designated significant natural community? ☐Yes ☑No

If Yes:

i. Describe the habitat/community (composition, function, and basis for designation): _____

ii. Source(s) of description or evaluation: _____

iii. Extent of community/habitat:

- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☐ Yes ☑No

If Yes:

i. Species and listing (endangered or threatened): _____

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐Yes ☑No

If Yes:

i. Species and listing: _____

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐Yes ☑No

If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐Yes ☑No

If Yes, provide county plus district name/number: _____

b. Are agricultural lands consisting of highly productive soils present? ☑Yes ☐No

i. If Yes: acreage(s) on project site? 45

ii. Source(s) of soil rating(s): USDA

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐Yes ☑No

If Yes:

i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature

ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐Yes ☑No

If Yes:

i. CEA name: _____

ii. Basis for designation: _____

iii. Designating agency and date: _____

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☐ Yes ☑ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☐ Yes ☑ No

If Yes:

i. Identify resource: _____

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____

iii. Distance between project and resource: _____ miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

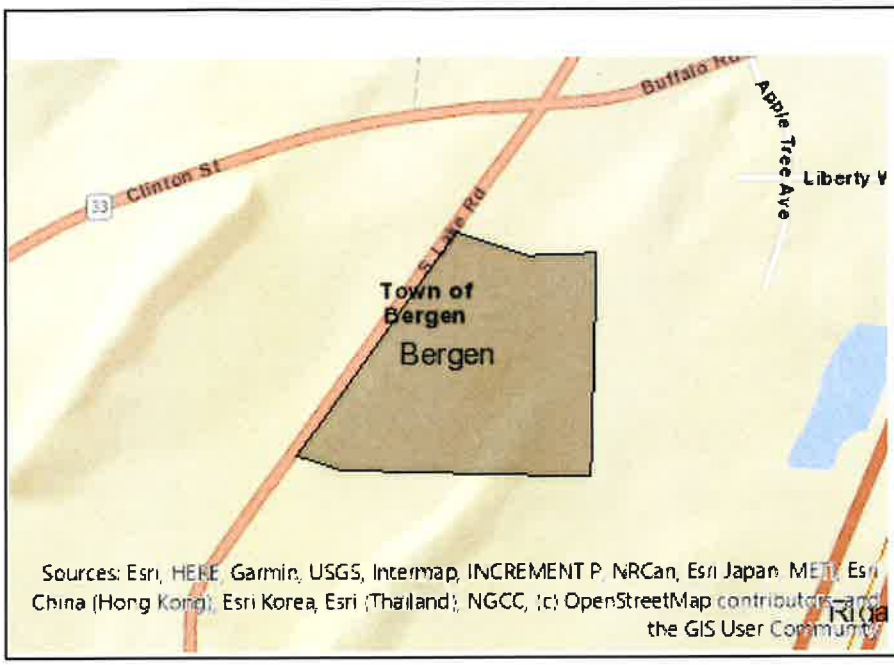
Applicant/Sponsor Name Kevin Watts Date 5/17/24

Signature Kevin Watts Title V.P. of construction

PRINT FORM

EAF Mapper Summary Report

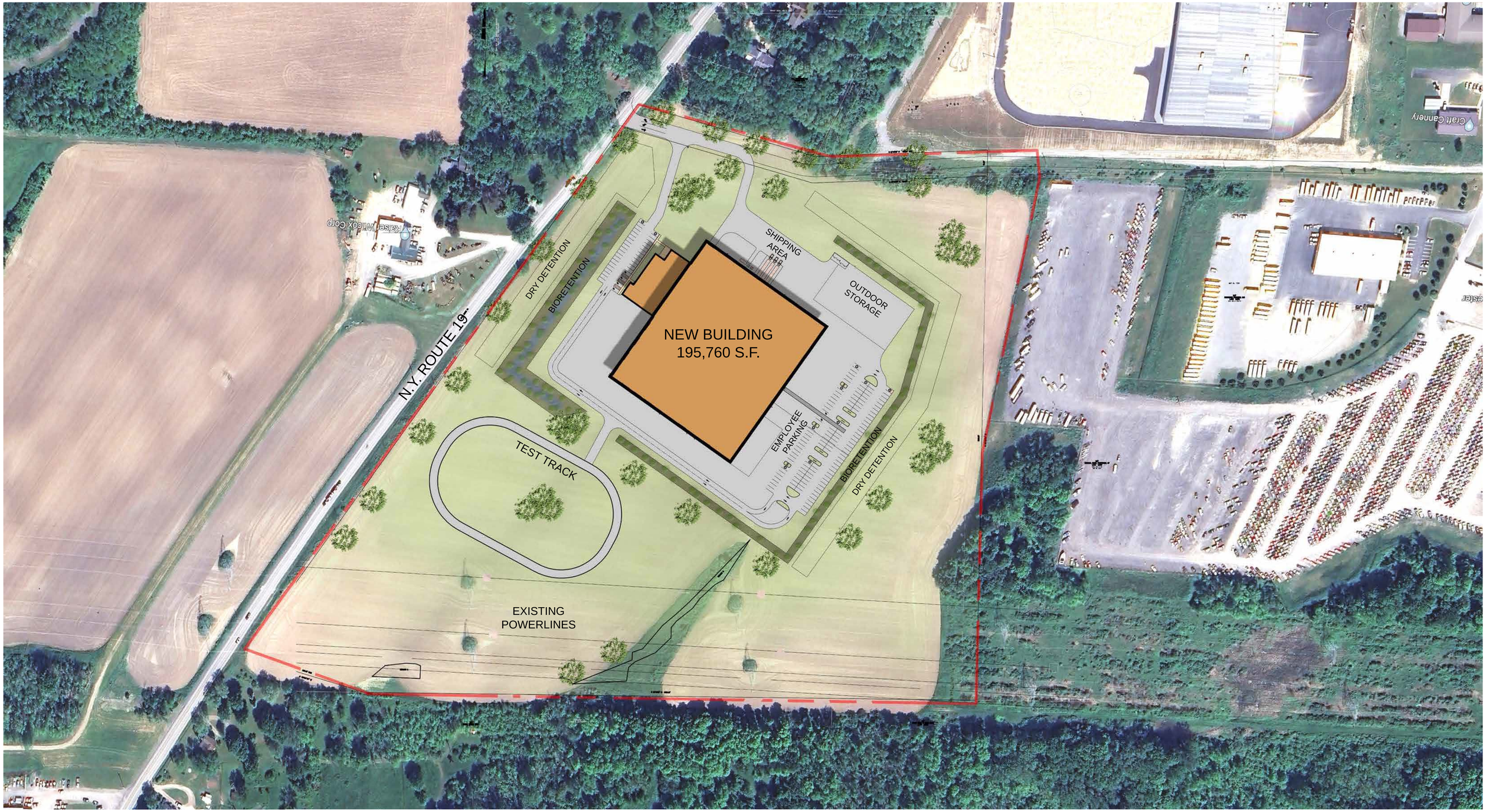
Tuesday, May 14, 2024 3:16 PM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.

B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	Yes
E.1.h.iii [Within 2,000' of DEC Remediation Site - DEC ID]	819004
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	No
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.j. [100 Year Floodplain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.k. [500 Year Floodplain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.l. [Aquifers]	No

E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	No
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No



GEIS COMPANIES

CONCEPTUAL SITE PLAN

OXBO

MAY 16, 2024

CONCEPTUAL SITE RENDERING

MAY 16, 2024

GEIS COMPANIES

CONCEPTUAL RENDERING

OXBO

MAY 16, 2024

WEST ELEVATION
SCALE: 1'-0" = 20'-0"
D
A-300

EAST ELEVATION
SCALE: 1'-0" = 20'-0"
B
A-300

GEIS COMPANIES

CONCEPTUAL ELEVATIONS

OXBO

MAY 16, 2024

NORTH ELEVATION
SCALE: 1/16" = 1'-0"
A
A-300

SOUTH ELEVATION
SCALE: 1/16" = 1'-0"
C
A-300

GEIS COMPANIES

CONCEPTUAL ELEVATIONS

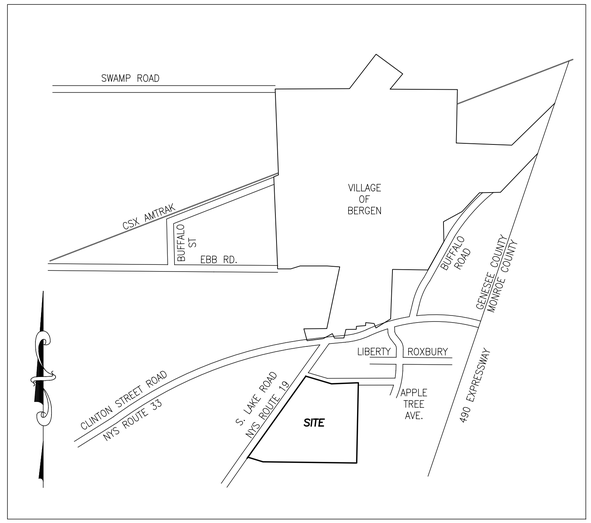
OXBO

MAY 16, 2024

OXBO

MANUFACTURING FACILITY

7015 SOUTH LAKE ROAD
TOWN OF BERGEN, GENESSE COUNTY, NEW YORK



LOCATION MAP
NTS

SCHEDULE OF DRAWINGS:

PROJECT LEGEND

EXISTING FEATURES*		PROPOSED FEATURES*	
	PROJECT BOUNDARY LINE		STORM CATCH BASIN
	CENTERLINE	WV	WATER VALVE
MB	MAIL BOX	SA SA	SANITARY SEWER LATERAL
	SIGN	ST ST	STORM SEWER LINE
ELEC. M.H. E	ELECTRIC MANHOLE	W W	WATERLINE
TELE. M.H. T	TELEPHONE MANHOLE		SIGN
SA SA	SANITARY MANHOLE & LINE	× 575.75	SPOT ELEVATION
W	WATER LINE		FLOW DIRECTION
	UTILITY POLE		SILT SOCK
WV	WATER VALVE		STABILIZED CONSTRUCTION ENTRANCE
	HYDRANT		
G	GAS LINE		
OH	OVERHEAD WIRES		

* WHERE APPLICABLE

DEVELOPER:

GEIS CONSTRUCTION SOUTH LLC
10020 AURORA-HUDSON ROAD
STREETSBORO, OHIO 44241

Phone No. (440) 454-5195

CIVIL ENGINEER:

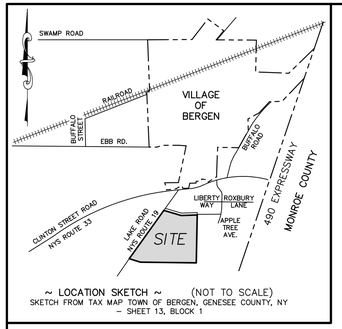
METZGER CIVIL ENGINEERING, PLLC.
8245 SHERIDAN DRIVE
WILLIAMSVILLE, NEW YORK 14221

PHONE No. (716) 633-2601

METENG@ROADRUNNER.COM

METZGER CIVIL ENGINEERING, PLLC

SCALE:	NTS
DATE:	MAY 20, 2024
JOB NO:	M-2405
SHEET NO:	CS-1



~ LOCATION SKETCH ~ (NOT TO SCALE)
SKETCH FROM TAX MAP TOWN OF BERGEN, GENESEE COUNTY, NY – SHEET 13, BLOCK 1

NYS WEST ZONE (NAD 83) GRID BEARINGS BASED ON GPS OBSERVATIONS

~ LEGEND ~
- ● = IRON PIN/PIPE FOUND
- ⊹ = FIRE HYDRANT
- ○ = UTILITY POLE
- ● = LIGHT POLE
- ⊹ = PIPELINE MARKER
- □ = CATCH BASIN
- D&M = DEED & MEASURED
- M&M = MAP & MEASURED
- D/M/M = DEED, MAP & MEASURED

~ FLOOD ZONE NOTE ~
PROPERTY IS LOCATED WITHIN ZONE C – AREA OUTSIDE 500–YEAR FLOOD TOWN OF BERGEN, GENESEE COUNTY, NEW YORK COMMUNITY 3611378, PANEL 06 EFFECTIVE DATE: JULY 6, 1984

100 0 100 200
Scale: 1" = 100'

PRELIMINARY ALTA/NSPS LAND TITLE SURVEY OF LOT 7 OF THE APPLE TREE ACRES CORPORATE PARK

PENDING RECEIPT OF TITLE DOCUMENTS

BEING PART OF LOTS 10 & 11, SECTION 6, TOWNSHIP 2 OF THE TRIANGLE TRACT SITUATE IN THE

TOWN OF BERGEN, GENESEE COUNTY, NEW YORK

MARCH 26, 2024

REVIEWED/REFERENCED ABSTRACT: APRIL 9, 2024

~ CERTIFICATION ~
This is to certify that this map or plan and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 1, 3, 4, 6, 8, 11(a), 13, 14, 16, 17, 18, and 19 of Table A thereof. The fieldwork was completed on March 20, 2024.

Date of Plat or Map: March 26, 2024

KEVIN M. O'DONOGHUE, P.L.S.
Registered Land Surveyor No. 049514 in the State of New York

STATE OF NEW YORK · KEVIN M. O'DONOGHUE · LICENSE No. 049514 · LICENSED LAND SURVEYOR

WELCH & O'DONOGHUE
LAND SURVEYORS, P.C.
P.O. BOX 297
2077 LAKEVILLE ROAD
AVON, NEW YORK 14414

(585) 226–2990
wosurvey@rochester.rr.com
wosurvey.com

JOB No. G24–5028S–7–ALTA

~ REFERENCES ~
1) DEED TO GENESEE COUNTY INDUSTRIAL DEVELOPMENT AGENCY L.767 D.69
2) SUBDIVISION PLAN OF LOT 7 OF THE APPLE TREE ACRES CORPORATE PARK
   PREPARED BY WELCH & O'DONOGHUE, LAND SURVEYORS, P.C.
   DATED: JANUARY 30, 2024
   JOB No. G23–5028S
3) FILED MAPS Nos. 1529, 2310, 2314, 2474 & 2532
4) STEWART TITLE INSURANCE COMPANY
   ABSTRACT No. 81287108
   DATED: MARCH 27, 2024

NOTE:
UNAUTHORIZED ALTERATION OR ADDITION TO THIS SURVEY MAP IS A VIOLATION OF SECTION 7209 PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

PARCEL SURVEYED
= 49.688 ACRES

A PORTION OF S.B.L. #13.–1–63.1

NO BUILDINGS OBSERVED ON PARCEL SURVEYED

~ RECORD DESCRIPTION – PARENT PARCEL ~
ALL THAT TRACT OR PARCEL OF LAND, being parts of Town Lots 10, 11 & 12, Section 6, Township 2, Triangular Tract, Town of Bergen, County of Genesee, State of New York, and described as follows:

Commencing at a point on the centerline of Rochester–Buffalo Road, Route 33–A, Bergen Riga Port 1 & 2 S.H. No. 8465, said point being station number –04+53.41, thence South 19°–46'–28" East a distance of 60.33 feet; thence South 19°–40'–35" East a distance of 413.81 feet to an angle point of Lot R–1; thence South 00°–44'–25" West a distance of 175.00 feet to the southwest corner of Lot R–1; thence North 89°–15'–35" West a distance of 50.00 feet to the point, said point being the point and place of beginning; thence

1. South 00°–44'–25" West a distance of 650.00 feet to the southwest corner of Lot R–2; thence
2. South 89°–15'–35" East a distance of 616.02 feet along the south line of Lot R–2; thence
3. South 18°–44'–20" West a distance of 167.30 feet to the southwest corner of Lot R–3; thence
4. South 70°–15'–55" East a distance of 966.88 feet to a point on the west right–of–way of Rochester–Western Expressway, I–490; thence
5. Along a curve to the right, said curve having a radius of 22818.31 feet, a distance of 859.27 feet to the point of tangency; thence
6. South 21°–51'–58" West a distance of 77.28 feet to the northeast corner of lands now or formerly James P. McCullough; thence
7. North 89°–15'–58" West a distance of 3364.91 feet along the north line of lands of McCullough to an angle point; thence
8. North 73°–03'–09" West a distance of 337.15 feet to the northwest corner of lands of McCullough, said point also being on the east right–of–way of Lake Road, New York State Route 19; thence
9. North 35°–32'–42" East a distance of 1820.75 feet along the east right–of–way of Lake Road to the southwest corner of lands now or formerly Lawrence Ognibene; thence
10. South 72°–34'–23" East a distance of 494.97 feet along the south line of Ognibene to a point; thence
11. North 25°–43'–00" East a distance of 419.71 feet along the east line of Ognibene to a point; thence
12. North 89°–15'–35 West a distance of 484.03 feet to a point, said point being on the east right–of–way of Lake Road; thence
13. North 34°–53'–12" East a distance of 202.00 feet along the east right–of–way of Lake Road to a point; thence
14. South 89°–15'–35" East a distance of 1210.14' to the point and place of beginning.

Containing 119.2 acres, more or less, as shown as Lot No. 4 on a RESUBDIVISION MAP, prepared by Warren R. McGrail and filed at the Genesee County Clerk's Office on May 4, 2000, in Map Cabinet 2, Slide No. 56, Map No. 1354.

~ SUMMARY OF SURVEY–RELATED MATTERS BURDENING THE PROPERTY ~
1) EASEMENT GRANTED TO THE AMERICAN TELEPHONE & TELEGRAPH COMPANY AT LIBER 258 OF DEEDS AT PAGE 524 IS BLANKET IN NATURE AND CANNOT BE PLOTTED HEREON.
2) APPROPRIATION BY THE PEOPLE OF THE STATE OF NEW YORK AT LIBER 343 OF DEEDS AT PAGE 437 IS LOCATED HEREON PER MAP NO. GBE 320, PARCEL NO. 320.
3) EASEMENT GRANTED TO ROCHESTER GAS AND ELECTRIC CORPORATION IS 4 FEET IN WIDTH ALONG THE EAST HIGHWAY LINE OF LAKE ROAD, AND IS LOCATED HEREON.
4) EASEMENT GRANTED TO ROCHESTER GAS AND ELECTRIC CORPORATION IS 4 FEET IN WIDTH ALONG THE EAST HIGHWAY LINE OF LAKE ROAD, AND IS LOCATED HEREON.
5) RIGHT–OF–WAY GRANTED TO EMPIRE STATE PIPELINE COMPANY, INC. AND ST. CLAIR PIPELINE COMPANY, INC. IS 50 FEET IN WIDTH AND LOCATED ADJACENT TO, AND OVERLAPPING THE SOUTH LINE OF THE ABOVE LISTED APPROPRIATION, AND IS LOCATED HEREON.

~ ABSTRACT OF TITLE NOTES ~
1) DECLARATION OF COVENANTS, CONDITIONS, EASEMENTS AND RESTRICTIONS FOR BERGEN I–490 BUSINESS PARK AT L.749 D.250 IS TERMINATED AND DISCHARGED AT L.349 MR.623.
2) UTILITY EASEMENT GRANTED TO THE TOWN OF BERGEN AT L.771 D.325 DOES NOT AFFECT THE PARCEL SURVEYED.
3) EASEMENT GRANTED TO ROCHESTER GAS AND ELECTRIC CORP., FRONTIER TELEPHONE OF ROCHESTER, INC., AND TIME WARNER ENTERTAINMENT CO. IS PLOTTED HEREON.

~ SURVEYOR'S DESCRIPTION – LOT 7 ~
All that tract or parcel of land, situate in the Town of Bergen, County of Genesee, State of New York, being part of Lots 10 & 11, Section 6, Township 2 of the Triangle Tract and further described as follows.

Beginning at a point in the southeasterly bounds of Lake Road (66.0 feet wide) (N.Y.S. Route 19) 74.09 feet southerly from the southwest corner of lands conveyed to R.J. Properties, LLC, as recorded in instrument DE2022–2110; thence

1) S 73°–34'–25"E parallel to and 70.00 feet southerly from the southerly bounds of said lands of R.J. Properties, LLC, a distance of 531.44 feet to a point; thence

2) N 87°–46'–28"E parallel to and 70.00 feet southerly from the southerly bounds of other lands conveyed to R.J. Properties, LLC, as recorded in instrument DE2018–1320, a distance of 467.55 feet to the northwest corner of lands conveyed to National Retail Properties, LP, as recorded in liber 914 of deeds at page 908; thence

3) S 01°–12'–08"W along a west bounds of said lands of National Retail Properties, LP, a distance of 1399.79 feet to the southwest corner thereof, in the south line of Town Lot 10; thence

4) N 89°–15'–28"W along the south line of Town Lot 10, a distance of 1634.16 feet to a point; thence

5) N 73°–03'–10"W a distance of 337.15 feet to a point in southeasterly bounds of Lake Road; thence

6) N 35°–32'–42"E along the southeasterly bounds of Lake Road, a distance of 1735.57 feet to the point of beginning.

Containing 49.688 acres.

The above described parcel being shown as Lot 7 on a map titled 'Subdivision Plan of Lot 7 of the Apple Tree Acres Corporate Park', prepared by Welch and O'Donoghue, Land Surveyors, P.C., dated January 30, 2024 and designated as Job No. G23–5028S.

~ SURVEYOR'S DESCRIPTION – REMAINING LANDS ~
All that tract or parcel of land, situate in the Town of Bergen, County of Genesee, State of New York, being part of Lot 11, Section 6, Township 2 of the Triangle Tract and further described as follows.

Beginning at a point in the southeasterly bounds of Lake Road (66.0 feet wide) (N.Y.S. Route 19) at the southwest corner of lands conveyed to R.J. Properties, LLC, as recorded in instrument DE2022–2110; thence

1) S 35°–32'–42"W along the southeasterly bounds of Lake Road, a distance of 74.09 feet to a point; thence

2) S 73°–34'–25"E parallel to and 70.00 feet southerly from the southerly bounds of said lands of R.J. Properties, LLC, a distance of 531.44 feet to a point; thence

3) N 87°–46'–28"E parallel to and 70.00 feet southerly from the southerly bounds of other lands conveyed to R.J. Properties, LLC, as recorded in instrument DE2018–1320, a distance of 467.55 feet to the southwest corner of lands conveyed to Genesee County Industrial Development Agency, as recorded in instrument DE2018–1319; thence

4) N 00°–44'–25"E along the west bounds of said lands of Genesee County Industrial Development Agency, a distance of 70.00 feet to the northwest corner thereof; thence

5) S 87°–46'–28"W along the southerly bounds of said lands conveyed to R.J. Properties, LLC, as recorded in instrument DE2018–1320, a distance of 459.40 feet to the southeast corner of the aforesaid lands conveyed in instrument DE2022–2110; thence

6) N 73°–34'–25"W along the southerly bounds of said lands conveyed in instrument DE2022–2110, a distance of 495.97 feet to the point of beginning.

Containing 1.569 acres.

The above described parcel being shown as 'Remaining Lands of Genesee County I.D.A.' on a map titled 'Subdivision Plan of Lot 7 of the Apple Tree Acres Corporate Park', prepared by Welch and O'Donoghue, Land Surveyors, P.C., dated January 30, 2024 and designated as Job No. G23–5028S.

~ NOTES PERTAINING TO TABLE A ~
1) ITEM INCLUDED HEREON
3) ITEM INCLUDED HEREON
4) ITEM INCLUDED HEREON
6) NO ZONING REPORT OR LETTER PROVIDED TO SURVEYOR BY CLIENT OR CLIENT'S REPRESENTATIVE
8) ITEM INCLUDED HEREON
11a) UNDERGROUND GAS LINE, WATER LINE, AND STORM CULVERTS INCLUDED HEREON PER Topo_Survey_CAD.dwg PROVIDED BY CPL PER EMAIL ON FEBRUARY 19, 2024.
13) ITEM INCLUDED HEREON
14) ITEM NOT SPECIFIED BY CLIENT
16) NO EVIDENCE OBSERVED IN THE PROCESS OF CONDUCTING FIELDWORK
17) NO PROPOSED CHANGES MADE AVAILABLE TO SURVEYOR. NO EVIDENCE OBSERVED IN THE PROCESS OF CONDUCTING FIELDWORK.
18) ITEM INCLUDED HEREON. SEE SUMMARY OF SURVEY–RELATED MATTERS BURDENING THE PROPERTY.
19) ITEM NOT ADDRESSED HEREON

CLINTON STREET ROAD

S LAKE ROAD

SITE

SITE LOCATION MAP
NOT TO SCALE

N

GRID NORTH

LEGEND

- PIN OR REBAR FOUND
- DECIDUOUS TREE
- ONE OR TWO POST SIGN
- BOL/POST ⊙ BOLLARD OR POST
- MB MAILBOX
- GLM GAS LINE MARKER POST
- UTILITY POLE
- GP GUY POLE
- GW GUY WIRE
- HYD HYDRANT
- WV WATER VALVE
- INV INVERT OR INVERT WITH END SECTION
- CP1 SURVEY CONTROL POINT
- EDGE OF WOODS
- CHAIN LINK FENCE
- SAN SANITARY SEWER LINE
- ST STORM SEWER LINE
- W UNDERGROUND WATER LINE
- G UNDERGROUND GAS LINE
- UT UNDERGROUND TELEPHONE LINE
- UE UNDERGROUND ELECTRIC LINE
- FO UNDERGROUND FIBER OPTIC LINE
- CTV UNDERGROUND CABLE TV LINE
- OH OVERHEAD UTILITY WIRE
- 670 MAJOR CONTOUR (5' INTERVAL)
- 669 MINOR CONTOUR (1' INTERVAL)

BENCHMARK
X-CUT IN SOUTH BONNET BOLT OF HYDRANT
ELEV.=672.35' (NAVD88)

N/F
GENESEE COUNTY INDUSTRIAL DEVELOPMENT AGENCY
TAX ID 13-1-63.1
L. 767, P. 69

NOTES:

1) THE UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON AN INSTRUMENT LOCATION OF THE ABOVE GROUND FEATURES (MANHOLES, VALVES, HYDRANTS, ETC.) ALONG WITH RECORD UTILITY PLANS AND STAKEOUT IN THE FIELD BY THEIR RESPECTIVE COMPANIES. UNDERGROUND UTILITIES ARE NOT CERTIFIED TO THEIR LOCATION OR COMPLETENESS.

2) THE HORIZONTAL DATUM IS REFERENCED TO THE NEW YORK STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD 83) THROUGH GPS OBSERVATIONS.

3) THE VERTICAL DATUM IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) THROUGH GPS OBSERVATIONS.

4) NO ABSTRACT OF TITLE PROVIDED. PROPERTY IS SUBJECT TO ANY EASEMENTS, ENCUMBRANCES OR RESTRICTIONS THAT AN ABSTRACT OF TITLE WOULD SHOW.

5) NO PROPERTY OR RIGHT OF WAY LINES ARE SHOWN AS A BOUNDARY SURVEY WAS NOT PART OF THIS PROJECT SCOPE.

SURVEY CONTROL POINT TABLE				
POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP 1	1118796.47	1317217.56	671.94	REBAR AND CAP
CP 2	1119114.76	1317428.75	669.35	REBAR AND CAP

SCALE BAR
1" = 80'
0 80 160 240 FT

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Colliers
Engineering & Design
www.colliersengineering.com

BERGMANN

811 PROTECT YOURSELF AND STAND BECOME NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
Know what's below. Call before you dig.
FOR STATE SPEOIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

REV	DATE	DRAWN BY	DESCRIPTION
-	-	-	-

TOPOGRAPHIC SURVEY

FOR

LeChase Construction Services, LLC

Town of Bergen
Genesee County
New York

Colliers Engineering & Design
ROCHESTER (BA)
280 East Broad Street
Suite 200
Rochester, NY 14604
Phone:585.232.5135
COLLIERS ENGINEERING & DESIGN CT, P.C.

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
1" = 80'	12/06/2023	CCW	ABM

PROJECT NUMBER: 23007920A
DRAWING NAME: TOPO SURVEY CAD_3-5-24

SHEET TITLE: TOPOGRAPHIC SURVEY

SHEET NUMBER: 1 of 1

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

SITE DATA TABLE
SBL = 13–1–63.1
ADDRESS = 7015 SOUTH LAKE ROAD, BERGEN, NEW YORK
SIZE = 49.7 ACRES
ZONING = INTERCHANGE INDUSTRIAL

	REQUIRED	PROVIDED
MIN LOT SIZE	40,000	2,164,932 SQFT
MIN FRONTAGE	200'	1735'
FRONT SETBACK	80'	260'
SIDE SETBACK	40'	224.8'
REAR SETBACK	35'	416'
MAX LOT COVERAGE	35%	9.0%
MAX BLD. HEIGHT	35'	42' (VARIANCE REQUIRED)

NOTES

1) THIS PLAN IS BASED ON SURVEY BY WELCH AND O'DONOHUE AND CONCEPT PLAN BY GEIS CONSTRUCTION.
THIS IS NOT A PROPERTY OR TOPOGRAPHIC SURVEY.

Designed By: ARH
Drawn By: ARH
Checked By: JCM
Cad File: M–2405

NOTE:
UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING IS A VIOLATION OF SECTION 7209, PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW

REVISION	BY/CK	DATE

METZGER CIVIL ENGINEERING, PLLC
8245 SHERIDAN DR.
WILLIAMSVILLE, NY 14221
PH: 716–633–2601
FAX: 716–633–2704
CIVIL ENGINEERING
LAND PLANNING
SITE DESIGN
MUNICIPAL ENGINEERING

STATE OF NEW YORK · MICHAEL J. METZGER · No. 0066786 · LICENSED PROFESSIONAL ENGINEER

OXBO

TOWN OF BERGEN, GENESEE COUNTY, NEW YORK

SITE PLAN

SCALE: 1"=60'
DATE: May 20, 2024
JOB NO: M–2405
SHEET NO: SP–1

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NOTES

1) THIS PLAN IS BASED ON SURVEY BY WELCH AND O'DONOHUE AND CONCEPT PLAN BY GEIS CONSTRUCTION.
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Designed By:	ARH
Drawn By:	ARH
Checked By:	JCM
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MUNICIPAL ENGINEERING

STATE OF NEW YORK — MICHAEL J. METZGER — 066786 — LICENSED PROFESSIONAL ENGINEER

OXBO

TOWN OF BERGEN, GENESEE COUNTY, NEW YORK

GRADING, DRAINAGE AND EROSION & SEDIMENT CONTROL PLAN 1

SCALE:	1"=50'
DATE:	May 20, 2024
JOB NO:	M-2405
SHEET NO:	GD-1

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NOTES

1) THIS PLAN IS BASED ON SURVEY BY WELCH AND O'DONOHUE AND CONCEPT PLAN BY GEIS CONSTRUCTION.
THIS IS NOT A PROPERTY OR TOPOGRAPHIC SURVEY.

Designed By:	ARH
Drawn By:	ARH
Checked By:	JCM
Cad File:	M–2405

NOTE:
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REVISION	BY/CK	DATE

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LAND PLANNING
SITE DESIGN
MUNICIPAL ENGINEERING

STATE OF NEW YORK · MICHAEL J. METZGER · No. 066786 · LICENSED PROFESSIONAL ENGINEER

OXBO

TOWN OF BERGEN, GENESEE COUNTY, NEW YORK

GRADING, DRAINAGE AND EROSION & SEDIMENT CONTROL PLAN 2

SCALE:	1"=50'
DATE:	May 20, 2024
JOB NO:	M–2405
SHEET NO:	GD–2

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10" DI TAP, VALVE AND CURB BOX (SEE DETAIL)

GAS SERVICE AND TWO 4" DATA LINE CONDUITS TO BE INSTALLED

4" DOMESTIC WATER SERVICE

HOT BOX (SEE DETAIL)

HYD #1

4" SDR-35 PVC FIRE SERVICE

4" SDR-35 PVC DOMESTIC SEWER

4"DIA

SAN LIFT STATION RIM 669.00 (SEE DETAIL)

1800' 4" SAN FORCE MAIN TO APPLE TREE SEWER (BY OTHERS)

180' 6" PVC @ 1%

OVERHEAD WIRES

GRAVEL DRIVEWAY

SA

FULL DEPTH STONE BACKFILL UNDER ALL PAVED SURFACES (TYP)

10" SDR-18 PVC FIRE SERVICE

45° BEND

2500 GALLON OIL INTERCEPTOR

10" SDR-18 PVC FIRE SERVICE

10"x6" TEE W/ REDUCER

HYD #2

NOTES

1) THIS PLAN IS BASED ON SURVEY BY WELCH AND O'DONOHUE AND CONCEPT PLAN BY GEIS CONSTRUCTION. THIS IS NOT A PROPERTY OR TOPOGRAPHIC SURVEY.

Designed By:	ARH
Drawn By:	ARH
Checked By:	JCM
Cad File:	M-2405

NOTE: UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING IS A VIOLATION OF SECTION 7209, PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW

REVISION	BY/CK	DATE

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LAND PLANNING
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MUNICIPAL ENGINEERING

STATE OF NEW YORK — MARK C. METZGER — 066788 — LICENSED PROFESSIONAL ENGINEER

OXBO

TOWN OF BERGEN, GENESEE COUNTY, NEW YORK

SANITARY AND WATER PLAN

SCALE:	1"=50'
DATE:	May 20, 2024
JOB NO:	M-2405
SHEET NO:	SW-1

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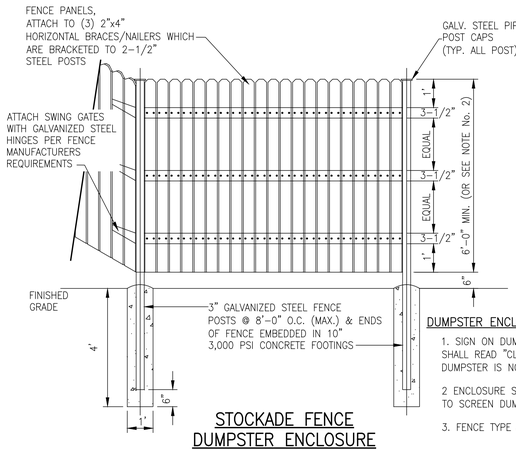
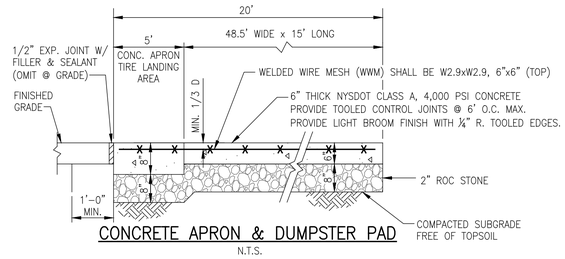


STOCKADE FENCE DUMPSTER ENCLOSURE

N.T.S.

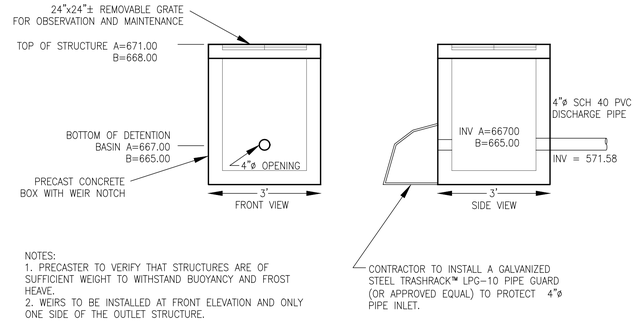
DUMPSTER ENCLOSURE NOTES:

1. SIGN ON DUMPSTER ENCLOSURE SHALL READ "CLOSE WHENEVER DUMPSTER IS NOT BEING SERVICED".
2. ENCLOSURE SHALL BE HIGH ENOUGH TO SCREEN DUMPSTER(S) WITHIN.
3. FENCE TYPE AND COLOR SELECTED BY OWNER.



CONCRETE APRON & DUMPSTER PAD

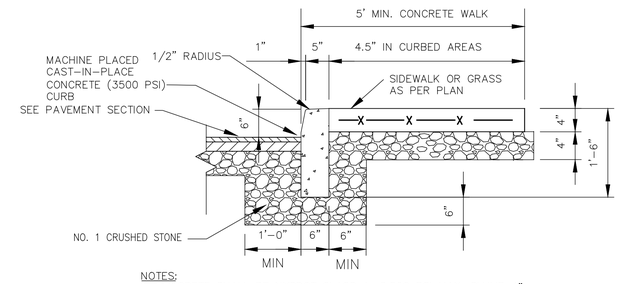
N.T.S.



NOTES:
1. PRECASTER TO VERIFY THAT STRUCTURES ARE OF SUFFICIENT WEIGHT TO WITHSTAND BUOYANCY AND FROST HEAVE.
2. WEIRS TO BE INSTALLED AT FRONT ELEVATION AND ONLY ONE SIDE OF THE OUTLET STRUCTURE.

OUTLET STRUCTURES A & B

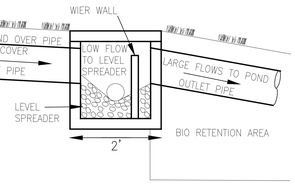
N.T.S



NOTES:
1. CONCRETE SHALL BE NYSDOT CLASS A, 3,500 PSI MAX. SLUMP 4"
2. WELDED WIRE MESH (WWM) SHALL BE W2.9xW2.9, 6"x6".
3. INSTALL 2" DEEP SAW CUT CONTROL JOINTS @ 10' INTERVALS. WITHIN 24 HOURS OF PLACEMENT.
4. PROVIDE 1/2" PREFORMED BITUMINOUS EXPANSION JOINTS AT 30" O.C.
5. PROVIDE LIGHT BROOM FINISH WITH ¼" R. TOOLED EDGES.
6. SLOPE TOP OF CURB DOWN TO MEET EXISTING ELEVATION WITHIN 4' WHERE CURBING ENDS.
7. ALL CONCRETE PLACED AS PART OF THIS CONTRACT SHALL BE SEALED AS SOON AS POSSIBLE AFTER INSTALLATION.

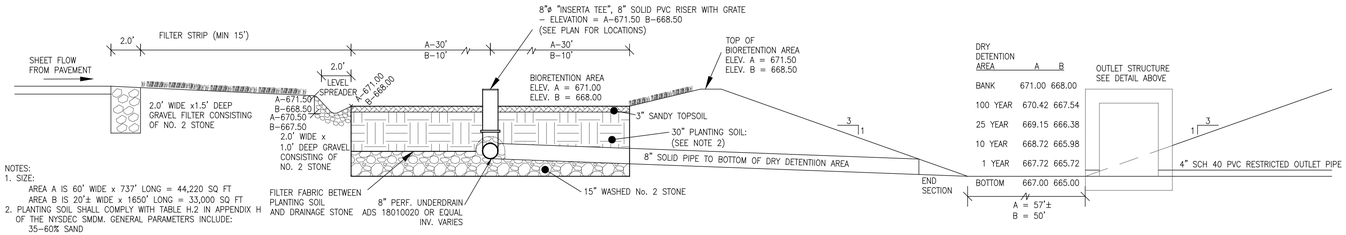
STANDARD CURB DETAIL

N.T.S.



FLOW SPLITTER / DIVERSION STRUCTURE (FSDS)

FSDS	RIM	INLET & OUTLET INVERT	INLET & OUTLET DIA	LOW FLOW PIPE(S) INVERT	LOW FLOW PIPES(S)	TOP OF OF WEIR WALL
1	672.50	670.50	18""	670.50	(2) 5' 6" HDPE	671.70
2	670.50	668.50	18"	668.50	(2) 5' 6" HDPE	669.70
3	672.50	670.50	18"	670.50	(2) 5' 6" HDPE	671.70
4	670.50	668.50	18"	668.50	(2) 5' 6" HDPE	669.70



DRY DETENTION AREA	A	B
BANK	671.00	668.00
100 YEAR	670.42	667.54
25 YEAR	669.15	666.38
10 YEAR	668.72	665.98
1 YEAR	667.72	665.72
BOTTOM	667.00	665.00

OUTLET STRUCTURE SEE DETAIL ABOVE

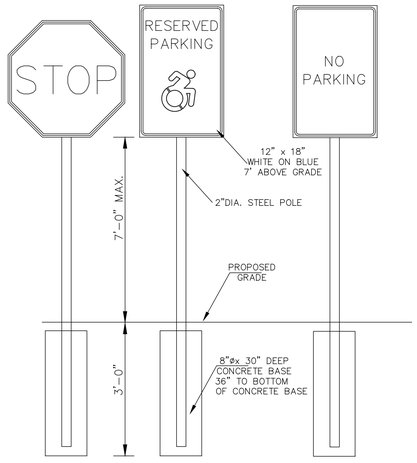
4" SCH 40 PVC RESTRICTED OUTLET PIPE

A = 57'±
B = 50'

NOTES:
1. SIZE:
   AREA A IS 60' WIDE x 737' LONG = 44,220 SQ FT
   AREA B IS 20'± WIDE x 1650' LONG = 33,000 SQ FT
2. PLANTING SOIL SHALL COMPLY WITH TABLE H.2 IN APPENDIX H OF THE NYSDEC SMDM. GENERAL PARAMETERS INCLUDE:
   35-60% SAND
   30-55% SILT
   10-25% CLAY
   1-4% ORGANIC MATTER
3. CONTRACTOR SHALL PLANT THE ERNEST SEED COMPANY'S "RAIN GARDEN SEED MIX" IN BIORETENTION AREA WITH AN OVER CROP OF ANNUAL RYE GRASS AT A RATE OF 25-50 LBS/AC. SEED TO BE COVERED AND WATERED UNTIL ESTABLISHED.

BIO RETENTION AND POND AREAS DETAIL

N.T.S



SIGNAGE

N.T.S.

Designed By:	ARH
Drawn By:	ARH
Checked By:	JCM
Cad File:	M-2405

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REVISION	BY/CK	DATE

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SITE DESIGN
MUNICIPAL ENGINEERING

STATE OF NEW YORK — MICHAEL R. METZGER — 066798 — LICENSED PROFESSIONAL ENGINEER

OXBO

TOWN OF BERGEN, GENESEE COUNTY, NEW YORK

DETAILS – 1

SCALE:	AS NOTED
DATE:	May 20, 2024
JOB NO:	M-2405
SHEET NO:	DT-1

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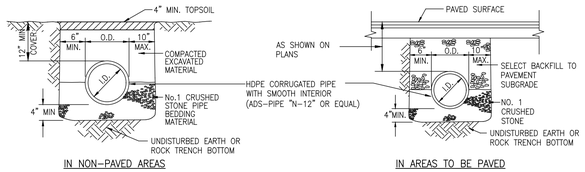
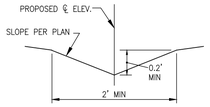


STORM SEWER TRENCH DETAILS

N.T.S.



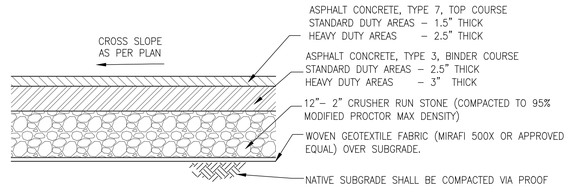
NOTES:

1) USE DIMENSIONS SHOWN IN THIS DETAIL UNLESS INDICATED OTHERWISE ON PLANS.

2) CONTRACTOR SHALL NOT OVER-EXCAVATE CHANNEL, SO AS TO, PREVENT EROSION.

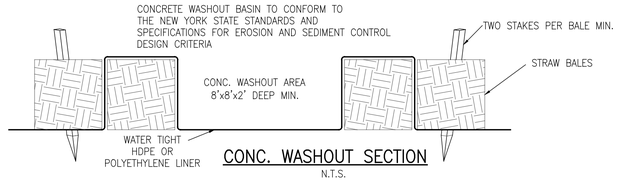
TYPICAL SWALE

N.T.S.



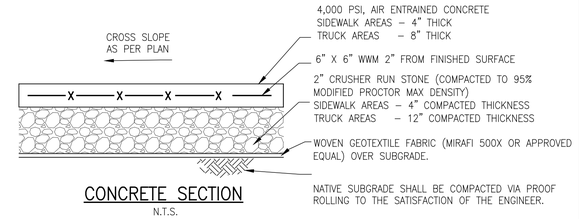
ASPHALT PAVING SECTION

N.T.S.



CONC. WASHOUT SECTION

N.T.S.

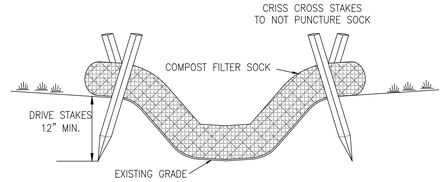


CONCRETE SECTION

N.T.S.

NOTES:

1. CONCRETE SHALL BE NYSDOT CLASS A, 4,000 PSI, MAX. SLUMP 4", AIR 5–7%, FIBERMESH
2. WELDED WIRE MESH (WWM) SHALL BE W2.9xW2.9, 6"x6".
3. INSTALL 2" DEEP MIN. SAW CUT CONTROL JOINTS @ 10' INTERVALS. WITHIN 24 HOURS OF PLACEMENT.
4. PROVIDE 1/2" PREFORMED BITUMINOUS EXPANSION JOINTS AT 30" O.C.
5. PROVIDE LIGHT BROOM FINISH WITH ¼" R. TOOLED EDGES.
6. ALL CONCRETE PLACED AS PART OF THIS CONTRACT SHALL BE SEALED AS SOON AS POSSIBLE AFTER INSTALLATION.

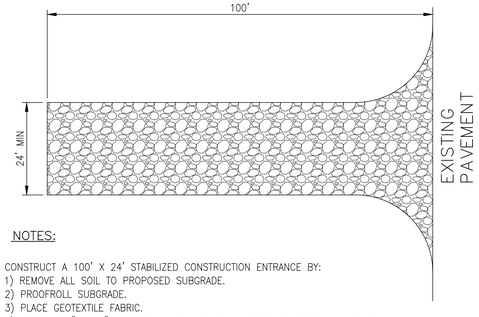


NOTES:

1. COMPOST FILTER SOCK MUST CONFORM TO NYS STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL (FILTREXX SILTSOXX OR APPROVED EQUAL).
2. INSTALL 3' LONG 2"x2" HARDWOOD STAKES AT 10' INTERVALS OR AS SPECIFIED BY THE SOCK MANUFACTURER.
3. WOODEN STAKES TO BE INSTALLED IN A CRISS CROSS PATTERN SO AS NOT TO PUNCTURE THE SOCK.
4. WOODEN STAKES TO BE DRIVEN AT LEAST 12" INTO GROUND.
5. ABUTTING ENDS MUST BE OVERLAPPED TO PROVIDE CONTINUOUS PROTECTION.
6. ALL SOCK SHALL BE 12".

COMPOST FILTER "SILT SOCK" / CHECK DAM

N.T.S.



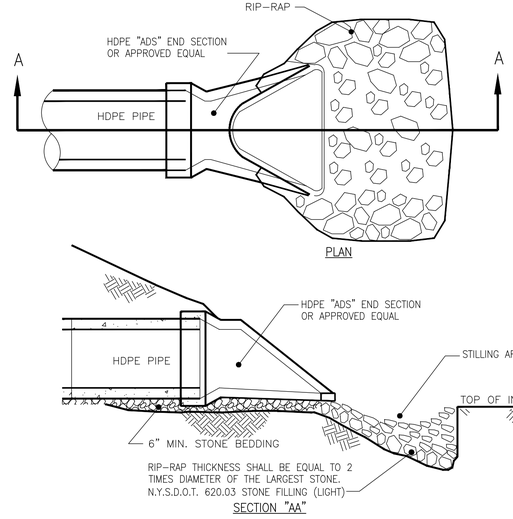
NOTES:

CONSTRUCT A 100' X 24' STABILIZED CONSTRUCTION ENTRANCE BY:

1) REMOVE ALL SOIL TO PROPOSED SUBGRADE.
2) PROOFROLL SUBGRADE.
3) PLACE GEOTEXTILE FABRIC.
4) INSTALL 12" OF 2" ROC STONE TO ULTIMATELY SERVE AS DRIVEWAY SUBBASE
5) SURFACE WATER--ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A SWALE OR MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
6) MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO ROCKLAND. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO THE ROADWAY MUST BE REMOVED IMMEDIATELY.
7) WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
8) INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED CONTINUOUSLY DURING CONSTRUCTION.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

N.T.S.



END SECTION WITH RIP–RAP DETAIL

N.T.S.

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Drawn By:	ARH
Checked By:	JCM
Cad File:	M–2405

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REVISION	BY/CK	DATE

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LAND PLANNING
SITE DESIGN
MUNICIPAL ENGINEERING

STATE OF NEW YORK — MATTHEW J. METZGER — 096788 — LICENSED PROFESSIONAL ENGINEER

OXBO

TOWN OF BERGEN, GENESEE COUNTY, NEW YORK

DETAILS – 2

SCALE:	AS NOTED
DATE:	May 20, 2024
JOB NO:	M–2405
SHEET NO:	DT–2

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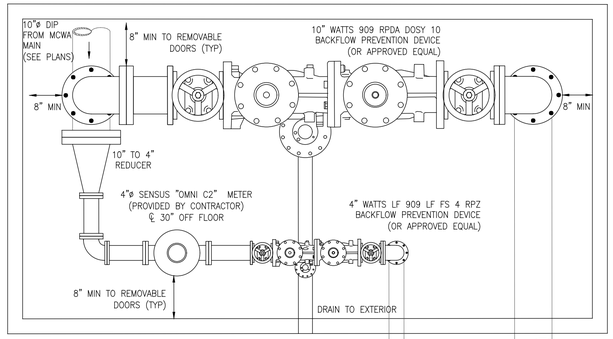
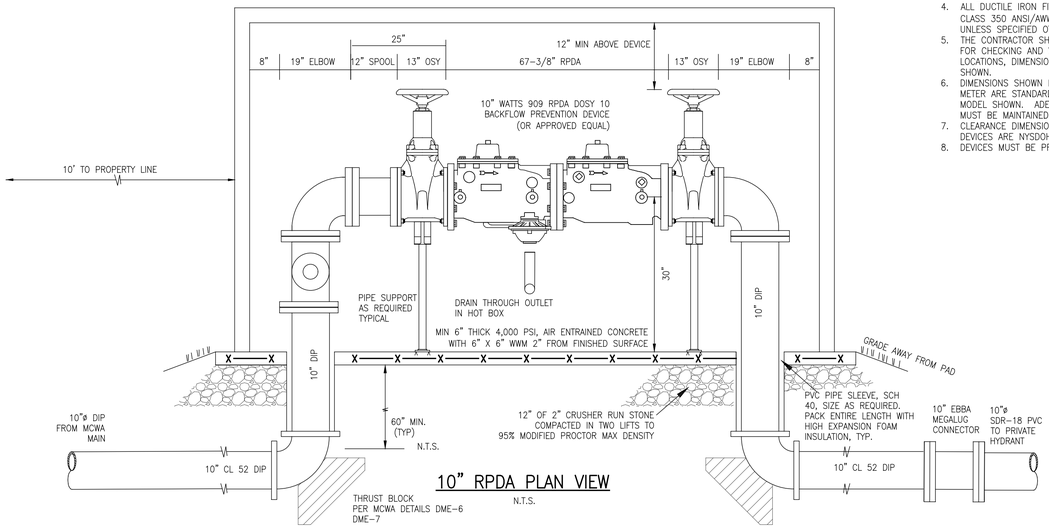


10" RPDA & 4" METER AND RPZ PLAN VIEW

N.T.S.

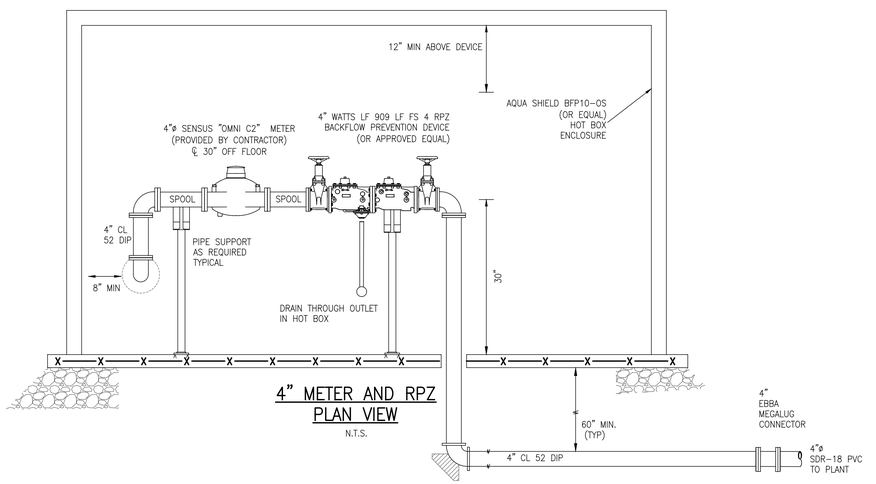
RPZ/DCDA MISCELLANEOUS NOTES:

1. AIR GAPS SHALL BE 2 TIMES THE DIAMETER OF THE DRAIN PORT WITH A MINIMUM OF 1".
2. MATERIALS USED, LOCATION AND MISCELLANEOUS APPURTENANCES SHALL BE GOVERNED BY THE MONROE COUNTY WATER AUTHORITY SPECIFICATIONS AND LOCAL ORDINANCES.
3. ALL DUCTILE IRON PIPE SHALL BE THICKNESS CLASS 52 UNLESS SPECIFIED OTHERWISE.
4. ALL DUCTILE IRON FITTINGS SHALL BE CLASS 350 ANSI/AWWA C110/A21.01-62 UNLESS SPECIFIED OTHERWISE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING AND VERIFYING ALL LOCATIONS, DIMENSIONS AND ELEVATIONS SHOWN.
6. DIMENSIONS SHOWN FOR THE WATER METER ARE STANDARD FOR THE SIZE AND MODEL SHOWN. ADEQUATE CLEARANCES MUST BE MAINTAINED ON ALL SIDES.
7. CLEARANCE DIMENSIONS SHOWN FOR THE DEVICES ARE NYSDOH STANDARDS.
8. DEVICES MUST BE PROPERLY SUPPORTED.



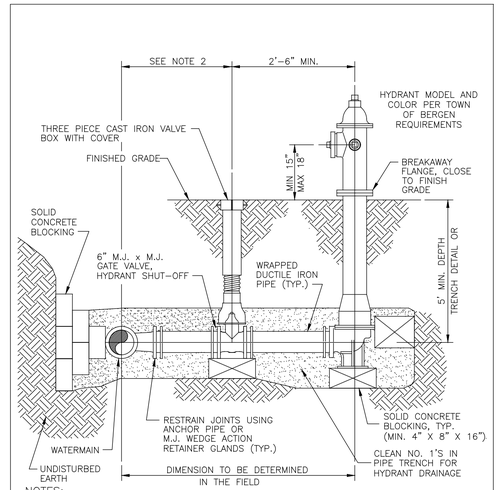
10" RPDA PLAN VIEW

N.T.S.



4" METER AND RPZ PLAN VIEW

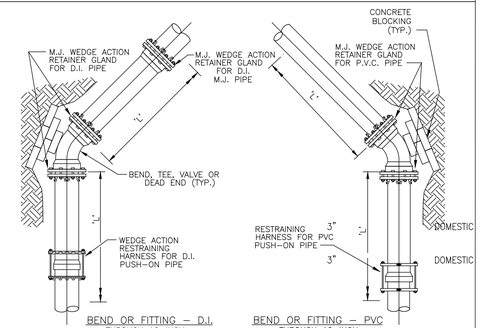
N.T.S.



NOTES:

1. HYDRANT RISER SHALL BE INSTALLED PLUMB.
2. VALVE BOX SHALL NOT BE PLACED IN PAVEMENT.
3. HYDRANT FACE TO BE A MINIMUM OF 3' FROM THE BACK FACE OF ALL CURBS OR A MINIMUM OF 5' FROM ALL EDGES OF PAVEMENT (IF NO CURB).

STANDARD DETAIL
FIRE HYDRANT



BEND OR FITTING - D.I. THROUGH 12-INCH

BEND OR FITTING - PVC THROUGH 10-INCH

RESTRAINED JOINT SCHEDULE					
PIPE SIZE	PIPE TYPE	11.25° ELBOW 'L'	22.5° ELBOW 'L'	45° ELBOW 'L'	TEE BRANCH, 90° BEND, VALVE OR DEAD END 'L'
6"	PVC	13'	25'	50'	120'
8"	PVC	16'	30'	60'	160'
8"	DIP	10'	20'	38'	88'
10"	PVC	20'	39'	76'	220'

NOTES:

1. DIMENSION 'L' REPRESENTS THE LENGTH OF RESTRAINED PIPE REQUIRED IN FEET EACH SIDE OF THE PIPE FITTING.

PLAN
N.T.S.

STANDARD DETAIL
RESTRAINED JOINT SCHEDULE

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Drawn By:	ARH
Checked By:	JCM
Cad File:	M-2405

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REVISION	BY/CK	DATE

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STATE OF NEW YORK — MARK J. METZGER — 086748 — LICENSED PROFESSIONAL ENGINEER

OXBO

TOWN OF BERGEN, GENESEE COUNTY, NEW YORK

DETAILS - 3

SCALE:	AS NOTED
DATE:	May 20, 2024
JOB NO:	M-2405
SHEET NO:	DT-3

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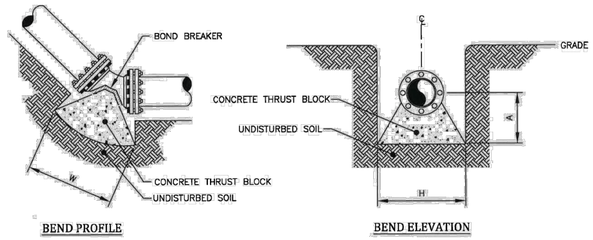
PIPE DIAMETER	BEND OR FITTING															
	11¼ DEGREE			22½ DEGREE			45 DEGREE			90 DEGREE			TEE*, CAP OR PLUG		
	H (FT)	W (FT)	A (FT)	H (FT)	W (FT)	A (FT)	H (FT)	W (FT)	A (FT)	H (FT)	W (FT)	A (FT)	H (FT)	W (FT)	A (FT)
10"	2.0	2.0	1.5	2.5	2.5	1.5	3.0	4.0	2.0	4.0	5.5	2.5	3.5	4.5	2.0
8"	2.0	2.0	1.5	2.5	2.5	1.5	3.0	4.0	2.0	4.0	5.5	2.5	3.5	4.5	2.0

* SIZE BLOCK BASED ON BRANCH DIAMETER.

SOIL BEARING STRENGTH - PSF

PSI TEST PRESSURE

HORIZONTAL AND VERTICAL UP THRUST BLOCKS

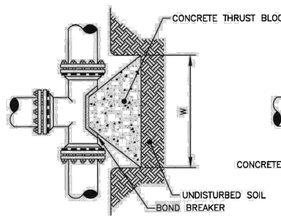


BEND PROFILE

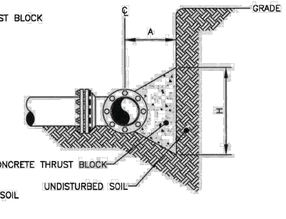
BEND ELEVATION

VERTICAL UP THRUST BLOCKS

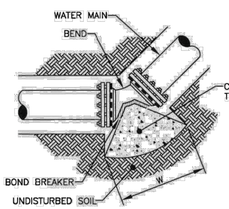
NOT TO SCALE



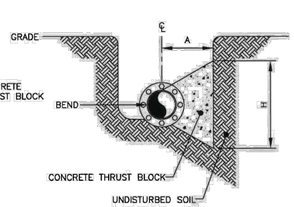
TEE PLAN



TEE ELEVATION



BEND PLAN



BEND ELEVATION

HORIZONTAL THRUST BLOCKS

NOT TO SCALE

MONROE COUNTY WATER AUTHORITY ROCHESTER, NEW YORK	SEPT 2016 DATE
	DME 6

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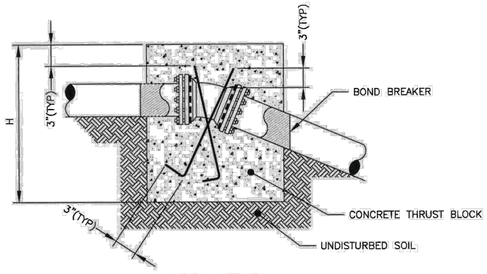
PIPE DIAMETER	BEND															
	11¼ DEGREE				22½ DEGREE				45 DEGREE				90 DEGREE			
	L (FT)	W (FT)	H (FT)	VOL (CY)	L (FT)	W (FT)	H (FT)	VOL (CY)	L (FT)	W (FT)	H (FT)	VOL (CY)	L (FT)	W (FT)	H (FT)	VOL (CY)
10"	2.0	2.0	2.5	0.50	2.5	2.5	3.0	0.75	3.0	4.0	2.0	1.0	4.0	5.5	2.5	2.0
8"	2.0	2.0	2.5	0.50	2.5	2.5	3.0	0.75	3.0	4.0	2.0	1.0	4.0	5.5	2.5	2.0

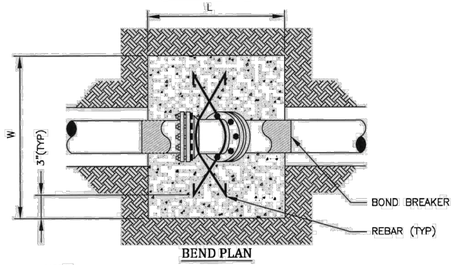
SOIL BEARING STRENGTH - PSF

PSI TEST PRESSURE

VERTICAL DOWN THRUST BLOCKS



BEND ELEVATION



BEND PLAN

NOTES:
1. THRUST BLOCKS SHALL BE CENTERED HORIZONTALLY ON BENDS.
2. VOLUMES SHOWN IN CHART ARE MINIMUMS.

VERTICAL DOWN THRUST BLOCKS

NOT TO SCALE

MONROE COUNTY WATER AUTHORITY ROCHESTER, NEW YORK	SEPT 2016 DATE
	DME 7

4" AND LARGER WATER SERVICE LINE NOTES

1. Water service lines shall be constructed in accordance with the regulations and specifications of the Water Authority.
2. Water service lines shall have a minimum of five feet of cover from finished grade in lawn areas and six feet of cover from finished grade in paved areas.
3. Water service lines shall be separated at least ten feet, measured from the outside of the pipes, from sewer mains or septic systems.
4. Water service lines shall be identified as:

DESCRIPTION	SIZE	MATERIAL[a]	TYPE [b]
MCWA Portion: from the water main to and including the control valve on the ROW/property/easement line	10"	D.I.P.*	CMB
Private Portion: from the control valve to the meter	10"	D.I.P.*	CMB

[a]Acceptable material is *Class 52 cement mortar lined Ductile Iron Pipe.
[b]Service Types include: Domestic = DS, Fire = FS, or Combined = CMB

5. The Water Authority's portion of the water service line shall be installed prior to the private portion of the service line.
6. Water meter(s) to be located on the interior of exterior walls(s) immediately upon service entrance into the building(s). A by-pass assembly is not required around the installation of 5/8-inch through 1-inch meters. 1 ½-inch + 2-inch Meter installations may require a by-pass assembly around the meter. Meter installation 3-inch or greater require a bypass assembly around the meter.
7. Water service lines sized 4-inches or greater shall be:
   - Pressure tested in accordance with the latest specifications of the Monroe County Water Authority. **A Water Authority representative must witness this test.**
   - Disinfected by using the continuous feed method according to AWWA Standard Specifications. After flushing and disinfecting the service line, water samples shall be collected in accordance with the Department of Health that has jurisdiction of the areas requirements. Approval and notification by the Health Department of passing health sample test(s) must be received before the service will be activated by the Water Authority.

MONROE COUNTY WATER AUTHORITY ROCHESTER, NEW YORK	DEC 2020 DATE
	DME 26

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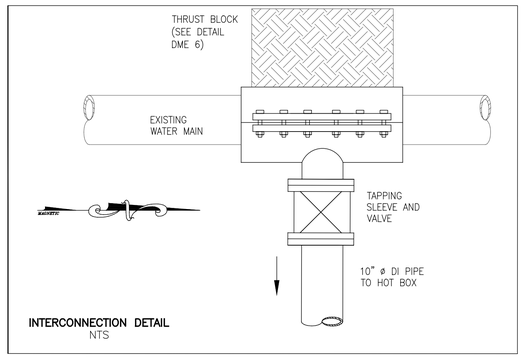

INTERCONNECTION DETAIL
NTS

Designed By:	ARH
Drawn By:	ARH
Checked By:	JCM
Cad File:	M-2405

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SITE DESIGN
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STATE OF NEW YORK — MICHAEL C. METZGER — 066788 — LICENSED PROFESSIONAL ENGINEER

OXBO

TOWN OF BERGEN, GENESEE COUNTY, NEW YORK

DETAILS – 4

SCALE:	AS NOTED
DATE:	May 20, 2024
JOB NO:	M-2405
SHEET NO:	DT-4

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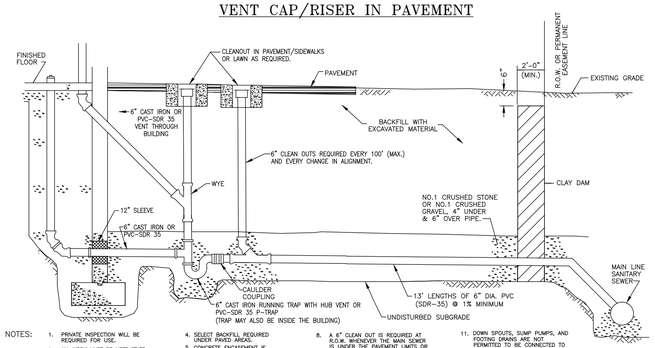
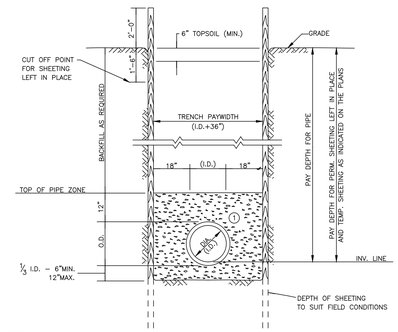
TYPICAL COMMERCIAL SERVICE WITHOUT BASEMENT DETAIL
VENT CAP/RISER IN PAVEMENT



NOTES:

1. PRIVATE INSPECTION WILL BE REQUIRED FOR USE.
2. ALL WORK MUST BE MEET STATE, COUNTY AND TOWN CODES.
3. PVC PIPE MATERIAL SHALL BE MANUFACTURED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST EDITION OF ASTM D-3033/D-3034. CAST IRON PIPE MATERIAL SHALL BE EXTRA HEAVY CAST IRON MEETING THE REQUIREMENTS OF ASTM A74-42.
4. SELECT BACKFILL REQUIRED UNDER PAVED AREAS.
5. CONCRETE ENCASEMENT IF COVER DEPTH IS LESS THAN 4'-0" UNDER PAVED AREAS
6. MIN. DEPTH OF COVER 3'-0"
7. CLEAN OUT MEASUREMENTS SHALL START FROM CENTERLINE OF MAIN SEWER FOR HOUSESIDE LATERALS AND FROM THE CURB FOR CURB SIDE CONNECTIONS. A CLEAN OUT MAY BE REQUIRED FOR ANY ABRUPT CHANGES IN LATERAL DIRECTION FLOW
8. A 6" CLEAN OUT IS REQUIRED AT R.O.W. WHENEVER THE MAIN SEWER IS UNDER THE PAVEMENT LIMITS OR AT FAR SIDE OF OF PAVEMENT.
9. ANY SEWER LAID THROUGH OR OVER A SEPTIC TANK MUST BE CAST IRON AND THE TRENCH MUST BE FILLED WITH BANK RUN GRAVEL.
10. ANY EXCAVATION TO BE LEFT OPEN OVERNIGHT SHALL BE COMPLETELY ENCLOSED IN FENCING, OR WHERE NECESSARY, COVERED WITH STEEL PLATES.
11. DOWN SPOUTS, SUMP PUMPS, AND FOOTING DRAINS ARE NOT PERMITTED TO BE CONNECTED TO THE LATERAL.
12. FOR NEW STRUCTURES, NO CONNECTION SHALL BE MADE UNTIL BUILDING ROOF IS ERECTED AND BASEMENT FLOOR IS POURED.

SHEETED TRENCH



NOTES:

1. MAINTAIN 18" BETWEEN PIPE AND INSIDE FACE OF TEMPORARY SHEETING. IF SHEETING EXTENDS BELOW PIPE INVERT AS SHOWN, WHEN PVC PIPE MATERIAL IS USED, COMPACT MATERIAL (1) BEFORE PULLING THE SHEETING.
2. SHEETED TRENCH OPERATIONS SHALL INCLUDE ALL NECESSARY DEWATERING EQUIPMENT.
3. SHEETING DRIVEN BELOW THE INVERT OF THE PIPE FOR BEDDING MATERIAL AND TOE SUPPORT WILL NOT BE CONSIDERED IN THE FORMULA FOR PAYMENT BUT SHOULD BE FIGURED BY THE CONTRACTOR IN DETERMINING HIS UNIT BID PRICE PER SQUARE FOOT OF SHEETING.
4. WHERE INDICATED ON THE PLANS OR AS ORDERED BY THE ENGINEER, TEMPORARY SHEETING WILL BE PAID FOR UNDER THE APPLICABLE BID ITEM. OTHER AREAS WHERE THE CONTRACTOR ELECTS TO USE TEMPORARY SHEETING NOT PREVIOUSLY AUTHORIZED BY THE ENGINEER SHALL BE AT HIS OPTION AND EXPENSE.

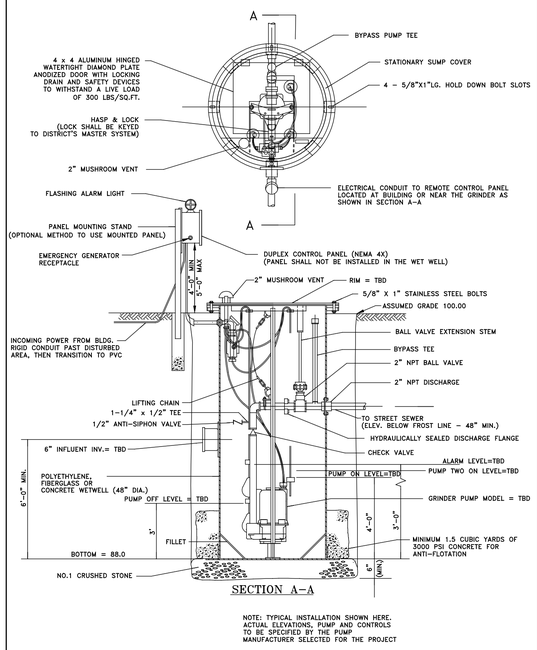
MATERIALS

PIPE BEDDING MATERIAL (NYSDOT LATEST EDITION)

(1) NO.1 CRUSHED STONE WITH A GRADATION CONFORMING WITH NYSDOT SECTION 703-02. THE CRUSHED STONE SHALL BE WELL GRADED WITH NO PARTICLES LARGER THAN 1" AND HAVING A MAXIMUM GRADATION MEETING THE LIMITS DESCRIBED IN THE SPECIFICATIONS. THE BEDDING SHALL BE COMPACTED IN 6" LIFTS WITH EQUIPMENT ACCEPTABLE TO THE PIPE MANUFACTURER.

NOTE: SLAG SHALL NOT BE ALLOWED FOR MATERIALS (1)

DUPLEX LOW PRESSURE GRINDER PUMP



SECTION A-A

NOTE: TYPICAL INSTALLATION SHOWN HERE. ACTUAL ELEVATIONS, PUMP AND CONTROLS TO BE SPECIFIED BY THE PUMP MANUFACTURER SELECTED FOR THE PROJECT

Designed By:	ARH
Drawn By:	ARH
Checked By:	JCM
Cad File:	M-2405

NOTE: UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING IS A VIOLATION OF SECTION 7209, PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW

REVISION	BY/CK	DATE

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STATE OF NEW YORK MICHAEL C. METZGER 066788 LICENSED PROFESSIONAL ENGINEER

OXBO

TOWN OF BERGEN, GENESEE COUNTY, NEW YORK

DETAILS - 5

SCALE:	AS NOTED
DATE:	May 20, 2024
JOB NO:	M-2405
SHEET NO:	DT-5

GENERAL NOTES FOR SANITARY SEWER CONSTRUCTION

1. THE PRIVATE INSPECTOR MUST BE IN SITE AS REQUIRED BY SAID INSPECTOR AND IS TO BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF THE INSTALLATION OF ANY SEWER COMPONENT.
2. CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL STATE, COUNTY AND TOWN RULES AND REGULATIONS.
3. ALL PERMITS REQUIRED BY THE FEDERAL, STATE, COUNTY, CITY AND/OR TOWN GOVERNMENTS TO PERFORM WORK MUST BE OBTAINED PRIOR TO THE START OF WORK, AND PAID FOR BY THE CONTRACTOR
4. IF EASEMENT AND/OR OUT OF DISTRICT AGREEMENTS ARE REQUIRED, THEY MUST BE COMPLETE AND READY TO BE FILED BEFORE THE PROJECT WILL BE APPROVED FOR CONSTRUCTION.
5. THE CONTRACTOR SHALL COMPLY IN ALL RESPECTS TO THE INDUSTRIAL CODE PART (RULE NO.) 53 RELATING TO CONSTRUCTION, EXCAVATION, AND DEMOLITION OPERATIONS AT OR NEAR UNDERGROUND FACILITIES, AS ISSUED BY THE STATE OF NEW YORK DEPARTMENT OF LABOR, BOARD OF STANDARD AND APPEALS.
6. THE CONSTRUCTION OF THE SANITARY SEWER FACILITIES SHALL BE UNDER THE SUPERVISION OF A PERSON OR FIRM QUALIFIED TO PRACTICE PROFESSIONAL ENGINEERING IN NEW YORK STATE UNDER THE EDUCATION LAW OF THE STATE, WHENEVER ENGINEERING SERVICES ARE REQUIRED BY SUCH LAW FOR SUCH PURPOSES.
7. WHERE SUCH SANITARY SEWER FACILITIES ARE UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER, HE SHALL CERTIFY THAT THE CONSTRUCTED FACILITIES HAVE BEEN UNDER HIS SUPERVISION AND THAT THE WORK HAS BEEN FULLY COMPLETED IN ACCORDANCE WITH THE APPROVED ENGINEERING REPORTS, PLANS, SPECIFICATIONS, AND APPROVALS.
8. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL SITE SAFETY. THE CONTRACTOR'S EQUIPMENT AND METHODS OF OPERATION SHALL BE IN FULL COMPLIANCE WITH OSHA STANDARDS AND SATISFY ALL FEDERAL, STATE AND LOCAL HEALTH AND SAFETY REGULATIONS.
9. THE CONTRACTOR IS ADVISED A TRENCH SHIELD AND/OR SHORING DESIGNED IN ACCORDANCE WITH OSHA STANDARDS SHALL BE USED IN ALL OPEN TRENCH EXCAVATIONS.
10. ANY CONTRACTOR AND/OR PLUMBER PERFORMING WORK IN A CONFINED SPACE (I.E. MANHOLES, WETWELLS, AND CHAMBERS) MUST CERTIFY TO THE TOWN THAT THEY HAVE THEIR OWN CONFINED SPACE ENTRY PROGRAM THAT MEETS OR EXCEEDS OSHA'S REGULATIONS. CERTIFICATION MUST BE NOTARIZED BY A NOTARY REPUBLIC.
11. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AHEAD OF THE PIPE LAYING OPERATION, SO IF MINOR ADJUSTMENTS MUST BE MADE IN THE PIPE ELEVATION AND/OR ALIGNMENT DUE TO INTERFERENCE FROM THESE UTILITIES, SAID CHANGES CAN BE MADE IN ADVANCE OF THE WORK.
12. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A QUALIFIED TREE EXPERT TO REMOVE, WHERE NECESSARY, BRANCHES WHICH INTERFERE WITH THE CONSTRUCTION OPERATION, OR TO REPAIR TREES HAVING SUFFERED DAMAGE BY CONSTRUCTION ACTIVITIES. THE COST INVOLVED IS TO BE INCLUDED IN THE VARIOUS ITEMS OF THE CONTRACT.
13. THE SANITARY SEWER PIPE SHALL BE POLYVINYL CHLORIDE (PVC) SEWER PIPE CONFORMING TO THE LATEST REVISIONS OF AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) DESIGNATION D3034, SDR-35, INSTALLED IN ACCORDANCE WITH THE ASTM DESIGNATION D-2321-83A OR THE LATEST REVISION THEREOF, OR APPROVED EQUAL.
14. SEWERS SHALL BE LAID WITH STRAIGHT ALIGNMENT BETWEEN MANHOLES AND SHALL BE CHECKED BY USING A LASER BEAM OR LAMPING.
15. SHOULD A FLUID CONDITION BE ENCOUNTERED AT THE TRENCH BOTTOM, THE CONTRACTOR IS TO UNDERCUT THE TRENCH AND PROVIDE SUITABLE FILL MATERIAL (STONE & FABRIC) TO STABILIZE THE TRENCH BOTTOM.
16. SANITARY SEWER BEDDING MATERIAL SHALL BE NO.1 CRUSHED STONE WITH A GRADATION CONFORMING TO THE DOT SPECIFICATIONS.
17. BACKFILL SHALL BE OF A SUITABLE MATERIAL REMOVED FROM THE EXCAVATION EXCEPT WHERE OTHER MATERIAL IS SPECIFIED. DEBRIS, FROZEN MATERIAL, LARGE CLODS OR STONES, ORGANIC MATTER, OR OTHER UNSTABLE MATERIALS SHALL NOT BE USED FOR BACKFILL WITHIN TWO (2') FEET OF THE TOP OF THE PIPE.
18. ALL PIPES CROSSING UNDER PAVED AREAS ARE TO BE BACKFILLED TO SUB-GRADE WITH COMPACTED SELECT MATERIAL (NO.2 CRUSHED STONE) TO FIVE (5') FEET OUTSIDE THE PAVEMENT EDGES OR AS REQUIRED BY THE HIGHWAY PERMIT. IF ANY PROPOSED SEWER RUNS UNDER PAVED AREAS AND HAS LESS THAN FOUR (4) FEET OF COVER, THEN CONCRETE ENCASEMENT IS REQUIRED.
19. SEWERS PARALLEL TO WATERMAINS – TEN STATE STANDARDS, LATEST EDITION, CHAPTER 30, SECTION 38.31, PAGE 30-11: SEWERS SHALL BE LAID AT LEAST TEN (10') FEET (THREE (3) METERS) HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAIN. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. IN CASES WHERE IT IS NOT PRACTICAL TO MAINTAIN A TEN (10') FOOT SEPARATION, THE APPROPRIATE REVIEWING AGENCY MAY ALLOW DEVIATION ON A CASE-BY-CASE BASIS, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER. SUCH DEVIATION MAY ALLOW INSTALLATION OF THE SEWER CLOSER TO A WATER MAIN, PROVIDED THAT THE WATER MAIN IS IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER AND AT AN ELEVATION SO THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES (460 MM) ABOVE THE TOP OF THE SEWER. IF IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS DESCRIBED ABOVE, BOTH THE WATER MAIN AND SEWER MUST BE CONSTRUCTED OF SLIP-ON OR MECHANICAL JOINT PIPE COMPLYING WITH PUBLIC WATER SUPPLY DESIGN STANDARDS OF THE REGULATORY AGENCY AND BE PRESSURE TESTED TO 150 POUNDS PER SQUARE INCH (PSI) (L034 KPA) TO ASSURE WATER TIGHTNESS PRIOR TO BACKFILLING.
20. SEWERS CROSSING WATERMAINS – TEN STATE STANDARDS, LATEST EDITION, CHAPTER 30, SECTION 38.32, PAGE 30-11 TO 30-12: SEWERS CROSSING WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18-INCHES (460 MM) BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER. THIS SHALL BE THE CASE WHERE THE WATER MAIN IS EITHER ABOVE OR BELOW THE SEWER. THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER MAIN JOINTS. WHERE A WATER MAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO MAINTAIN LINE AND GRADE.
21. WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS STIPULATED ABOVE, ONE OF THE FOLLOWING METHODS MUST BE SPECIFIED:

a. THE SEWER SHALL BE DESIGNED AND CONSTRUCTED EQUAL TO WATER PIPE, AND SHALL BE PRESSURE TESTED AT 150 PSI (1034 KPA) TO ASSURE WATER TIGHTNESS PRIOR TO BACKFILLING.

b. EITHER THE WATER MAIN OR THE SEWER LINE MAY BE ENCASED IN A WATERTIGHT CARRIER PIPE WHICH EXTENDS TEN (10') FEET (THREE (3) METERS) ON BOTH SIDES OF THE CROSSING, MEASURED PERPENDICULAR TO THE WATER MAIN. THE CARRIER PIPE SHALL BE OF MATERIALS APPROVED BY THE REGULATORY AGENCY FOR USE IN WATER MAIN CONSTRUCTION.

c. THE SEWER SHALL BE ENCASED IN CONCRETE. TYPICAL FOR ENCASEMENT

22. THE MANHOLE COVERS ARE TO BEAR THE INSCRIPTION "SANITARY" AND COMPLY WITH THE STANDARD FRAME AND COVER DETAIL.
23. BUILDING SANITARY SEWER VENTS MUST BE INSTALLED IN THE BUILDING OR SIX (6) INCHES ABOVE FINISHED GRADE IN A GRASSY AREA WITH A MUSHROOM CAP. IF THE VENT IS IN A SIDEWALK OR PAVED AREA, THEN PROTECT WITH 6" DIAMETER BOLLARDS (2 MINIMUM).
24. CLEANOUTS (C.O.) ARE REQUIRED ON EVERY ONE HUNDRED FEET, AND AT EVERY CHANGE OF ALIGNMENT.
25. ABANDONED BUILDING SEWER CONNECTIONS FROM THE SITE, IF ANY, REQUIRE PROOF OF A PERMIT FOR DISCONNECTION PRIOR TO THE NEW CONNECTION BEING MADE.
26. THE FOLLOWING PERTAINS ONLY FOR DIRECT REPLACEMENT OF IN SERVICE SANITARY SEWERS:

a. EACH NEW PIPE JOINT SHALL BE ULTRASONIC TESTED AFTER IT IS LAID, BUT BEFORE THE NEXT PIPE IS LAID. ALL TESTS SHALL BE IN ACCORDANCE WITH THE TESTING EQUIPMENT MANUFACTURE RECOMMENDATIONS.

b. THE ULTRASONIC TEST SHALL BE PERFORMED IN LIEU OF THE HYDROSTATIC TEST.

c. A VIDEO INSPECTION OF THE ENTIRE SEWER SHALL BE PERFORMED IN LIEU OF THE AIR TEST. FORWARD THE VIDEO INSPECTION TAPE AND RELATED PAPERWORK TO DSM FOR REVIEW AND APPROVAL.

d. A DEFLECTION TEST IS REQUIRED IN ALL CASES.

27. FOR ALL SANITARY SEWER INSTALLATIONS, A WRITTEN CERTIFICATE OF CONSTRUCTION COMPLETENESS AND COMPLIANCE, INCLUDING THE RESULTS OF THE HYDROSTATIC LEAKAGE TEST, LAMP TEST, DEFLECTION TEST, AIR TEST, ETC. SHALL BE SUBMITTED WITHIN THIRTY (30) DAYS AFTER COMPLETION OF CONSTRUCTION.
28. FOR ALL PUBLIC AND PRIVATE 8" OR LARGER SANITARY SEWER INSTALLATIONS, THE DEVELOPER/CONTRACTOR MUST PROVIDE ONE (1) SET OF RECORD DRAWINGS ON "D" SIZE PAPER (24" X 36") AND IN AN ELECTRONIC FILE FORMAT (CD) COMPATIBLE WITH AUTOCAD, RELEASE 2007.
29. ALL PUBLIC SEWER EXTENSION PROJECTS THAT CONSIST OF MORE THAN 750 LF OF 8" PIPE OR LARGER, SHALL FURNISH A 2 YEAR MAINTENANCE BOND AS REQUIRED BY THE TOWN.
30. FINAL CERTIFICATION WILL BE ISSUED UPON THE FULL COMPLETENESS AND COMPLIANCE OF THE PROJECT INCLUDING ANY REQUIREMENT(S) OF I/I REMEDIAL WORK

3.02 AIR TESTS, ALIGNMENT, INSPECTION, INFILTRATION OR EXFILTRATION AND DEFLECTION REQUIREMENTS

A. Requirements

1. After backfilling and prior to the final acceptance of the project, the Contractor will be required to perform the following four tests on all sewers to be built under this project:

a) Air Tests
b) Alignment
c) Infiltration or Exfiltration
d) Deflection Test (15" dia. and smaller).

2. No more than 1,000 linear feet of installed sewer shall be allowed to remain untested.

3. In view of the fact that house laterals and riser pipes often contribute considerable infiltration, such laterals and risers are to be installed and capped, tied and blocked as the work progresses prior to the air testing of the lines.

4. The Contractor's testing procedures shall be completed in accordance with OSHA Standards for confined space entry. The Contractor will be required to provide and operate all equipment necessary for full compliance for his operation. Equipment such as gas detectors, safety harnesses, ventilating blowers, respirators etc. shall be provided by the contractor.

B. Air Tests (Required for All Diameters up to and including 36")

1) The procedure for air testing shall be as specified herein. The minimum allowable time for the test pressure to decrease from 3.5 psi to 3.0 psi shall be not less than as called for in the following table:

Minimum Acceptance Times For Length Shown (min:sec)

Pipe Diameter	Up to 100'	100–200 '	200–300'	300–400'
6"	2:50	2:50	2:50	2:51
8"	3:47	3:47	3:48	5:04
10"	4:43	4:43	5:56	7:54
12"	5:40	5:42	8:33	11:24
15"	7:05	8:54	13:21	17:48
18"	8:30	12:49	19:14	25:38
21"	9:55	17:27	26:11	34:54
24"	11:24	22:48	34:11	45:35
27"	14:25	28:51	43:16	57:42
30"	17:48	35:37	53:25	71:13
33"	21:33	43:56	64:38	86:10
36"	25:39	51:17	76:55	102:34

2) Pipe lines in sizes up to 36 inches in diameter can be air tested from manhole to manhole for distances not to exceed 400 ± feet.

3) In wet trenches where pumping to lower the water table is impractical, approved perforated pipe (with approved cap) shall be placed at each manhole to extend from a point 6 inches below the lowest invert to the top of the ground. Ground water elevations will be measured at each manhole in order to calculate the groundwater pressure acting on the pipe exterior. The initial air test pressure shall be increased as necessary to overcome the calculated groundwater pressure.

4) The testing procedure outlined shall be strictly adhered to during construction.

5) All testing equipment shall be supplied by the Contractor. For the Contractor's information, some of the major equipment required for air tests is the following:

a). Stop watch graduated in tenths of a second.
e) Compressor of 50 to 100 psi capacity.
f) Bulkheads for pipe.
g) Approximately 100 feet of 3/8" diameter air hose.
h) Pressure gauge – 0 to 5 psi graduated in 1/16th of a pound increments.
i) Three 3/8 inch diameter check valves.

C. Visual Inspection

1. All Sewers under 36" in diameter shall be lamped manhole to manhole prior to final acceptance. The lamp shall have an output of between 250 and 500 candlepower. Lamping shall be performed after the sewer has been flushed and the inside surface wet to allow for light reflection. If fifty percent (50%) of the lamp cannot be seen from the other manhole, the contractor will be required to televise that section at his expense.

2. All pipes 36" in diameter and larger shall be entered and visually inspected by the Engineer prior to installation. All equipment required for the inspection shall be furnished by the Contractor. After installation is totally complete, the contractor shall complete an internal television inspection of the pipe conduit,. the television inspection shall be completed with the engineer present and a full inspection shall be recorded on a vhs tape. a copy of said tape shall be provided to the engineer. some items of inspection are as follows:

a) Pipe free from obstructions and debris
b) Pipe free from cracks
c) Pipe joints properly sealed
d) Pipe invert is smooth and free of sags or high points
e) Hookups, diversions and connections properly made
f) Concrete pipe walls free from structural defects
g) Pipes and joints free from visible signs of leakage
h) Specified coatings properly installed.

3. Pipe sections and joints not meeting all of the above requirements shall be replaced or repaired as directed by the engineer at the contractors expense.

D. Infiltration Tests (Applicable Only if Ground Water is Above Pipe)

1. Infiltration tests for all sewers to be constructed under this project shall not exceed 100 gallons per inch diameter per mile of sewer, per 24 hours. Each individual run of sewer (from one manhole to the next manhole) shall comply with the allowable rate of infiltration. All equipment for the tests shall be furnished by the Contractor.

2. The allowable rate of infiltration given in gallons per mile is not to be construed as a commitment on the part of the Owner to accept an entire line, where overall infiltration is less than the allowable, while one or more runs contribute excessive infiltration.

3. The infiltration test is intended to measure the water tightness of a sewer, as related to the infiltration of ground water, and, therefore, is only applicable if the water table level is 2 feet above the top of the pipe.

a) Approved perforated pipe (with an approved cap) shall be placed at each manhole to extend from a point 6 inches below the lowest invert to the top of the ground. Ground water elevations will be measured at each manhole so that the ground water level an be correlated with the infiltration measurements.

b) Before conducting the tests, the water table should be allowed to stabilize at its normal level such that the water completely surrounds the pipe during the test period. The test is usually conducted between adjacent manholes with the upstream end of the sewer bulkheaded in a suitable manner to isolate the test section. All service laterals, stubs and fittings should be properly plugged or capped at the connections to the test pipe section to prevent the entrance of ground water at these locations.

c) A V notch weir or other suitable measuring device should be installed in the inlet pipe to the downstream manhole. Infiltrating water is then allowed to build up and level off behind the weir until steady, uniform flow is obtained. When steady flow occurs over the weir, leakage is determined by direct reading consecutively for five (5) days from graduations on the weir and converting the flow quantity to gallons per unit length of pipe per unit of time.

d) An important factor in applying the test criteria is to properly correlate the variable water head over the length of sewer being tested to the high ground water level. The downstream end of the test section will almost always be subjected to a greater external water pressure than the upstream end. To compensate for this variable external pressure, the test pressure should be that pressure corresponding to the average head of water over the test section. A minimum of 2 feet of water over the pipe is required at the upper manhole before the infiltration test will be allowed.

4. After the advent of the first wet weather season, and prior to the acceptance of the project, the owner will require that sections showing excessive infiltration be tested again and defective pipes, manholes, and connections be replaced or repaired at the contractors expense

5. When a sewer run between two consecutive manholes or chambers is found to contribute infiltration at a rate above the allowable, inspection by television or other cameras may be made by the Contractor and at the contractors expense during wet weather, so that the defective section of sewer can be located and repaired. Each individual run of sewer (from one manhole to the next manhole) shall comply with the allowable rate of infiltration of 100 gallons per inch diameter per mile of sewer per 24 hours.

A. Exfiltration Tests

1. The exfiltration test for all diameter sewers shall be as described below. Although actual infiltration will normally be less than that indicated by the water exfiltration test, the test does provide a positive means of subjecting the completed sewer system to an actual pressure test. Since sanitary sewers are not designed or expected to operate as a pressure system, care must be exercised in conducting the test and correlating the results with the allowable exfiltration limit. All equipment required for the tests shall be furnished by the contractor.

a) The test is usually conducted between adjacent manholes. Prior to the test, all service laterals, stubs and fittings within the test section should be plugged or capped and adequately braced or blocked to withstand the water pressure resulting from the test.

b) If manholes are to be included in the test, the inlet pipe to each manhole should be bulkheaded and the test section filled with water through the upstream manhole. To allow air to escape from the sewer, the flow should be at a steady rate until the water level in the upstream manhole provides an average pressure of 5 psi (11.6' head) at the center point of the test section or the upstream manhole is filled. If necessary, provisions should be made to bleed off entrapped air during the filling of the test section.

c) Once the test section is filled, the water should be allowed to stand for an adequate period of time (one day minimum) to allow for water absorption by the pipe and manhole. After water absorption has stabilized, the water level in the upstream manhole is brought up to the proper test level and this level established by measuring down from the manhole cover or other convenient datum point. After 24 hours, the water elevation should be measured from the same reference point and the loss of water during the test period calculated, or the water can be restored to the level existing at the beginning of the test, and the amount added used to determine the leakage.

d) To exclude both manholes from the test it is necessary to bulkhead the outlet pipe of the upstream manhole. Provision must be made in the bulkhead for filling the pipe and expelling trapped air.

e) The water level at the upstream manhole shall be computed and varies above the top of the pipe. Since the sewer is installed on a grade, the test section downstream will most likely be subjected to a greater pressure. Therefore, the test pressure head at the upstream manhole should be adjusted such that the maximum pressure on the pipe being tested is no greater than 10 psi.

3. When a sewer run between two consecutive manholes or chambers is found to exfiltrate at a rate above the allowable, inspection by television or other cameras may be made by the Contractor during wet weather, so that the defective section of sewer can be located and repaired. Each individual run of sewer (from one manhole to the next manhole) shall comply with the allowable rate of infiltration of 100 gallons per inch diameter per mile of sewer per 24 hours.

B. Deflection Test

All PVC sewers constructed under this project shall be internally checked, no earlier than 30 calendar days after the trenches are backfilled, with a five percent (5%) deflection "go-no-go pig" to determine if the pipes are deflecting excessively. Any section of pipe unable to pass the deflection test "pig test" shall be removed and replaced at the contractors expense.

Deflection testing mandrels or pig shall be pulled through the pipe by hand or hand operated winch. Power winches or drives are not permitted.

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Drawn By: ARH
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Cad File: M-2405

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OXBO

TOWN OF BERGEN, GENESEE COUNTY, NEW YORK

DETAILS – 6

SCALE: AS NOTED
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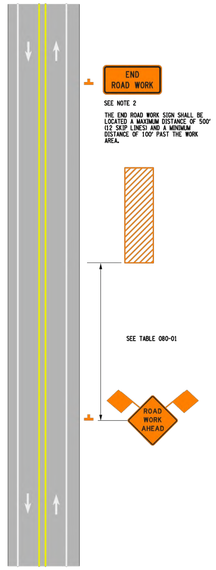


NOT TO SCALE

NOTES:

1. THIS SETUP IS A SPECIAL OPERATION, AND CAN BE USED REGARDLESS OF THE WORK DURATION WHEN WORK IS PERFORMED BEYOND THE SHOULDERS WITHIN THE RIGHT-OF-WAY.

2. END ROAD WORK SIGN MAY BE OMITTED IF WORK DURATION IS LESS THAN 1 HOUR.

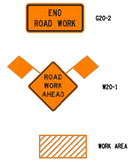


TABLE 080-01: ADVANCE PLACEMENT SIGN DISTANCE

ROAD TYPE	DISTANCE BETWEEN SIGNS
URBAN (≤ 30 MPH)	100
URBAN (35-40 MPH)	200
URBAN (≥ 45 MPH)	350
RURAL	500
FREEWAY	1000

* PRECONSTRUCTION POSTED SPEED LIMIT

TABLE 080-02: REQUIRED SIGN SIZES*

SIGN	NON-FREEWAY	FREEWAY
G20-1	36x18	48x24
W20-1	36x36	48x48
WARNING FLAG	18x18	18x18

*FREEWAY SIZES MAY BE USED ON NON-FREEWAY, IF SPACE CONSTRAINTS DO NOT EXIST.

NEW YORK STATE OF OPPORTUNITY. **Department of Transportation**

U.S. CUSTOMARY STANDARD SHEET

WORK ZONE TRAFFIC CONTROL
ALL ROADWAYS
WORK BEYOND SHOULDER

APPROVED DECEMBER 2, 2021	ISSUED UNDER EI 21-028
Robert Limoges	619-080
ROBERT LIMOGES, P.E. DIRECTOR, OTSM	

Region 4 Standard General Plan Notes

1. ROAD TO BE KEPT CLEAN OF MUD AND DEBRIS AT ALL TIMES.
2. ROADSIDE DRAINAGE TO BE MAINTAINED AT ALL TIMES.
3. MATERIALS, EQUIPMENT AND VEHICLES ARE NOT TO BE STORED OR PARKED WITHIN THE NEW YORK STATE RIGHT-OF-WAY.
4. MAINTENANCE AND PROTECTION OF TRAFFIC MUST COMPLY WITH THE CURRENT NATIONAL MUTCD WITH NYS SUPPLEMENT, SECTION 619 OF THE CURRENT NYSDOT STANDARD SPECIFICATIONS, THESE PLANS AND AS ORDERED BY THE ASSISTANT RESIDENT ENGINEER, ON A NYSDOT CONSTRUCTION PROJECT, MAINTENANCE AND PROTECTION OF TRAFFIC MUST COMPLY WITH THESE PLANS AND BE IN ACCORDANCE WITH THE NYSDOT CONTRACT DOCUMENTS AS DEEMED NECESSARY BY THE NYS ENGINEER-IN-CHARGE.
5. NOTIFY THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION'S ASSISTANT RESIDENT ENGINEER AT THE APPROPRIATE NUMBER, AS NOTED BELOW, FIVE (5) WORK DAYS PRIOR TO WORKING WITHIN THE STATE RIGHT-OF-WAY.

GENESEE CO. -	(585) 343-0502	LIVINGSTON CO. -	(585) 346-3036
MONROE CO. -	WEST OF GENESEE RIVER (585) 352-3471	MONROE CO. -	EAST OF GENESEE RIVER (585) 586-4514
ONTARIO CO. -	(585) 396-4957	ORLEANS CO. -	(585) 589-6655
WAYNE CO. -	(315) 332-4000	WYOMING CO. -	(585) 786-3310

IN ADDITION, THE PERMITTEE SHALL NOTIFY NYSDOT REGIONAL TRAFFIC OPERATIONS CENTER (RTOC) OF ALL LANE AND SHOULDER CLOSURES AT LEAST THREE (3) DAYS IN ADVANCE OF THE PROPOSED WORK UTILIZING RTOC'S CONSTRUCTION NOTIFICATION FORM.

PROPOSED CLOSURES WILL BE REVIEWED FOR CONCURRENT AND OVERLAPPING CLOSURE OR INCIDENT CONFLICTS AND WILL BE ENTERED INTO 511NY.ORG. CLOSURES INCLUDED IN THE NOTIFICATION SHALL CONFORM TO TIME, DATE, AND LOCATION RESTRICTIONS IN THE PERMIT. RTOC MAY DISALLOW OR REDUCE CLOSURES DUE TO OTHER CLOSURES OR WORK, EVENTS, OR INCIDENTS FOUND IN CONFLICT WITH THE PROPOSED CLOSURE(S). ALL LANE AND SHOULDER CLOSURES SHALL BE REMOVED DURING NON-WORKING HOURS, EXCEPT WHERE AUTHORIZED BY THE NYSDOT REGIONAL TRAFFIC ENGINEER OR DESIGNEE.

6. NOTIFY THE NYSDOT TRAFFIC SIGNAL MAINTENANCE ENGINEER AT (585) 753-7793 5 DAYS PRIOR TO WORKING WITHIN 350' OF A SIGNALIZED INTERSECTION. NOTIFY DIG SAFELY NEW YORK 2 WORK DAYS PRIOR TO DIGGING, DRILLING OR BLASTING AT 811 FOR A UTILITY STAKE-OUT.
7. WORK ZONE TRAFFIC CONTROL STANDARD SHEETS NOT INCLUDED IN THE PERMIT PACKAGE SHALL NOT BE UTILIZED UNLESS APPROVED BY THE REGIONAL TRAFFIC ENGINEER.
8. ALL MATERIALS USED WITHIN THE STATE RIGHT-OF-WAY MUST COMPLY WITH THE CURRENT NEW YORK STATE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS ALONG WITH ANY APPROPRIATE CURRENT NYS DEPARTMENT OF TRANSPORTATION'S STANDARD SHEETS.
9. QUALITY CONTROL OF ASPHALT CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 401 OF THE STANDARD SPECIFICATIONS. ALL ASPHALT PRODUCED AS PART OF SECTION 401 WILL BE PAID AT A FINAL QUANTITY ADJUSTMENT FACTOR OF 1.0. ASPHALT COURSE DEPTHS SHOWN ON THE PLANS ARE COMPACTED DEPTHS.
10. NO NIGHT WORK SHALL BE ALLOWED UNLESS APPROVED PRIOR TO START OF PROJECT. ADDITIONAL MAINTENANCE AND PROTECTION OF TRAFFIC MAY BE REQUIRED INCLUDING THE ADDITION OF REFLECTIVE MATERIALS AND LIGHTING.
11. HAZARDOUS WASTE NOTIFICATION - THE PERMITTEE ACCEPTS THE RIGHT-OF-WAY OF THE STATE HIGHWAY IN ITS "AS IS" CONDITION. THE DEPARTMENT OF TRANSPORTATION MAKES NO REPRESENTATION AS TO THE ABSENCE OF UNDERGROUND TANKS, STRUCTURES, FEATURES OR SIMILAR IMPEDIMENTS TO THE COMPLETION OF THE WORK PERMITTED HEREUNDER. SHOULD PERMITTEE FIND SOME PREVIOUSLY UNKNOWN UNDERGROUND IMPEDIMENTS TO ITS WORK, THE DEPARTMENT OF TRANSPORTATION SHALL HAVE NO OBLIGATION TO CURE, REMOVE, REMEDY OR OTHERWISE DEAL WITH SUCH PREVIOUSLY UNKNOWN UNDERGROUND IMPEDIMENTS. THE PERMITTEE IS REQUIRED TO REMOVE, MODIFY OR OTHERWISE DEAL WITH SUCH UNDERGROUND TANKS, STRUCTURES, FEATURES OR IMPEDIMENTS IN A MANNER WHICH MEETS ACCEPTABLE ENGINEERING PRACTICE AND IS APPROVED BY THE DEPARTMENT OF TRANSPORTATION.
12. ADA COMPLIANCE – ALL WORK SHALL BE IN ACCORDANCE WITH THE AMERICANS DISABILITY ACT (ADA) AND THE REQUIREMENTS OF THE 2013 PROPOSED ACCESSIBILITY GUIDELINES FOR PEDESTRIAN FACILITIES (PROWAG). REFER TO STANDARD SHEET 608-01 FOR DETAILS.
13. ANY DAMAGE TO ROADWAY FEATURES CAUSED DIRECTLY OR INDIRECTLY BY THE CONTRACTOR'S OPERATIONS WITHIN NYS ROW SHALL BE REPAIRED TO MEET NYSDOT STANDARDS AT THE CONTRACTOR'S EXPENSE.
14. NYSDOT OPERATIONS TAKE PRECEDENCE OVER HIGHWAY WORK PERMIT OPERATIONS. CONTRACTOR SHALL NOT HAVE WORK OPERATIONS IN PAVEMENT DURING INCLEMENT WEATHER CONDITIONS OR DURING SNOW AND ICE REMOVAL OPERATIONS ON STATE HIGHWAYS.

10/2023

SPECIAL NOTE
TEMPORARY LANE/SHOULDER CLOSURE RESTRICTIONS FOR MAJOR HOLIDAYS

There shall be no temporary lane/shoulder closures on roadway facilities owned and/or maintained by NYSDOT on the major holidays listed below.

Construction activities that will result in temporary lane/shoulder closures shall be suspended to minimize travel delays associated with road work for major holidays as follows:

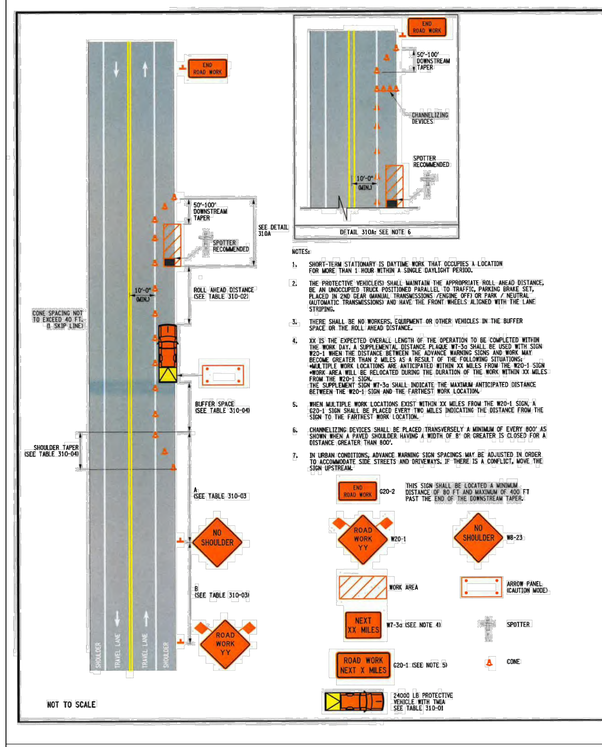
Holiday	Falls on	Temporary lane closures are NOT allowed from
New Year's Day Independence Day Christmas Day	Sunday or Monday	6:00 AM Friday before to 6:00 AM Tuesday after
	Tuesday	6:00 AM Saturday before to 6:00 AM Wednesday after (starting at 6:00 AM Friday before to 6:00 AM Wednesday after for Christmas Day)
	Wednesday	6:00 AM Tuesday before to 6:00 AM Thursday after (starting at 6:00 AM Saturday before to 6:00 AM Thursday after for Christmas Day)
	Thursday	6:00 AM Thursday to 6:00 AM Monday after (starting at 6:00 AM Wednesday before to 6:00 AM Monday after for Christmas Day)
	Friday or Saturday	6:00 AM Thursday before to 6:00 AM Monday after

Holiday	Falls on	Temporary lane closures are NOT allowed from
Memorial Day Labor Day	Monday	6:00 AM Friday before to 6:00 AM Tuesday after
Thanksgiving Day	Thursday	6:00 AM Wednesday before to 6:00 AM Monday after

Exceptions can only be made under the following conditions:

- Emergency work.
- Work within long-term stationary lane/shoulder closures.
- Safety work that does not adversely impact traffic mobility and has been authorized by the Regional Traffic Engineer.

Note: The Department reserves the right to cancel any work operations, including lane closures and/or total road closures, that would create traffic delays by unforeseen events. The Contractor would be notified at least seven (7) calendar days prior to the proposed work.



NOTES:

1. SHORT-TERM STATIONARY IS DAYTIME WORK THAT OCCUPIES A LOCATION FOR MORE THAN 1 HOUR WITHIN A SINGLE DAYLIGHT PERIOD.
2. THE PROTECTIVE VEHICLE(S) SHALL MAINTAIN THE APPROPRIATE ROLL-AHEAD DISTANCE, BE AN UNOCCUPIED TRUCK POSITIONED PARALLEL TO TRAFFIC, PARKING BRAKE SET, PLACED IN 2ND GEAR MANUAL TRANSMISSIONS /ENGINE OFF/ OR PARK / NEUTRAL (AUTOMATIC TRANSMISSIONS) AND HAVE THE FRONT WHEELS ALIGNED WITH THE LANE STRIPING.
3. THERE SHALL BE NO WORKERS, EQUIPMENT OR OTHER VEHICLES IN THE BUFFER SPACE OR THE ROLL AHEAD DISTANCE.
4. XX IS THE EXPECTED OVERALL LENGTH OF THE OPERATION TO BE COMPLETED WITHIN THE WORK DAY. A SUPPLEMENTAL DISTANCE PLAQUE (W7-3) SHALL BE USED WITH SIGN W20-1 WHEN THE EXPECTED WORK ZONE AND ADVANCE WARNING SIGNS AND WORK MAY BECOME GREATER THAN 2 MILES AS A RESULT OF THE FOLLOWING SITUATIONS:
   •MULTIPLE WORK LOCATIONS ARE ANTICIPATED WITHIN XX MILES FROM THE W20-1 SIGN
   •WORK AREA WILL BE RELOCATED DURING THE DURATION OF THE WORK WITHIN XX MILES FROM THE W20-1 SIGN.
   THE SUPPLEMENT SIGN W7-3a SHALL INDICATE THE MAXIMUM ANTICIPATED DISTANCE BETWEEN THE W20-1 SIGN AND THE FARTHEST WORK LOCATION.
5. WHEN MULTIPLE WORK LOCATIONS EXIST WITHIN XX MILES FROM THE W20-1 SIGN, A G20-1 SIGN SHALL BE PLACED EVERY TWO MILES INDICATING THE DISTANCE FROM THE SIGN TO THE FARTHEST WORK LOCATION.
6. CHANNELIZING DEVICES SHALL BE PLACED TRANSVERSELY A MINIMUM OF EVERY 80' AS SHOWN WHEN A PAVED SHOULDER HAVING A WIDTH OF 8' OR GREATER IS CLOSED FOR A DISTANCE GREATER THAN 800'.
7. IN URBAN CONDITIONS, ADVANCE WARNING SIGN SPACINGS MAY BE ADJUSTED IN ORDER TO ACCOMMODATE SIDE STREETS AND DRIVEWAYS. IF THERE IS A CONFLICT, MOVE THE SIGN UPSTREAM.

NOT TO SCALE

TABLE 310-01: PROTECTIVE VEHICLE REQUIREMENTS

CLOSURE TYPE	ROAD TYPE & SPEED	NON-FREEWAY ≥ 45 MPH	NON-FREEWAY 35 - 40 MPH	NON-FREEWAY ≤ 30 MPH
	EXPOSURE CONDITIONS[1]			
LANE CLOSURE OR ENCROACHMENT	WORKERS ON FOOT OR VEHICLE EXPOSED TO TRAFFIC	P, TMA	P, TMA	P
	OTHER HAZARDS NO WORKERS EXPOSED	P, TMA	P	SEE NOTE 2
SHOULDER CLOSURE OR ENCROACHMENT	WORKERS ON FOOT OR VEHICLE EXPOSED TO TRAFFIC	P, TMA	P	P
	OTHER HAZARDS NO WORKERS EXPOSED	P, TMA	P	SEE NOTE 2

LEGEND

P= PROTECTIVE VEHICLE REQUIRED FOR EACH CLOSED LANE & EACH CLOSED PAVED SHOULDER 8' OR WIDER, IF THE WORK SPACE MOVES WITHIN THE STATIONARY CLOSURE, THE PROTECTIVE VEHICLE SHALL BE REPOSITIONED ACCORDINGLY

TMA= TMA REQUIRED

NOTES:
1. THE EXPOSURE CONDITIONS ASSUMES THERE IS NO POSITIVE PROTECTION PRESENT
2. EITHER A PROTECTIVE VEHICLE OR THE STANDARD BUFFER SPACE SHALL BE PROVIDED

TABLE 310-02: ROLL AHEAD DISTANCE

PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	ROLL AHEAD DISTANCE (FT.)/* OF SKIP LINES FOR VEHICLES: STATIONARY OPERATION MIN	MAX
≥ 55	120/3	200/5
45 - 50	80/2	160/4
≤ 40	40/1	120/3

TABLE 310-03: ADVANCE WARNING SIGN SPACING

ROAD TYPE	DISTANCE BETWEEN SIGNS A (FT.)	B (FT.)	SIGN LEGEND XX	YY
URBAN (≤ 30 MPH)	100	100	AHEAD	AHEAD
URBAN (35-40 MPH)	200	200	AHEAD	AHEAD
URBAN (≥ 45 MPH)	350	350	1000 FT.	AHEAD
RURAL	500	500	1500 FT.	1000 FT.

* PRECONSTRUCTION POSTED SPEED LIMIT

TABLE 310-04: LONGITUDINAL BUFFER SPACE AND TAPER LENGTHS

PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	LONGITUDINAL BUFFER SPACE DISTANCE (FT.)/ * OF SKIP LINES	TAPER LENGTH= L (FT.)/ * OF SKIP LINES/ * OF CHANNELIZING DEVICES FOR LANE WIDTH IN FT. (LATERAL SHIFT OF TRAFFIC FLOW PATH) 10	11	12	SHOULDER TAPER LENGTH= L/3 (FT.)/ * OF SKIP LINES/ * OF CHANNELIZING DEVICES FOR SHOULDER WIDTH ≤ 4 FT.	5 - 7 FT.	≥ 8 FT.
25	155/4	120/3/4	120/3/4	120/3/4	40/1/2	40/1/2	40/1/2
30	200/5	160/4/5	160/4/5	200/5/6	40/1/2	40/1/2	40/1/2
35	250/6	200/5/6	240/6/7	240/6/7	40/1/2	40/1/2	80/2/3
40	305/8	280/7/8	320/8/9	320/8/9	40/1/2	80/2/3	80/2/3
45	360/9	440/11/12	520/13/14	560/14/15	80/2/3	80/2/3	120/3/4
50	425/11	520/13/14	560/14/15	600/15/16	80/2/3	120/3/4	160/4/5
55	495/13	560/14/15	600/15/16	680/17/18	80/2/3	120/3/4	160/4/5

TABLE 310-05: REQUIRED SIGN SIZES*

SIGN	NON-FREEWAY	FREEWAY
G20-1	36x18	48x24
G20-2	36x18	48x24
W7-3a	24x18	36x30
W8-23	36x36	48x48
W20-1	36x36	48x48
WARNING FLAG	18x18	18x18

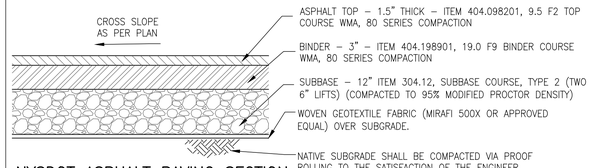
*FREEWAY SIZES MAY BE USED ON NON-FREEWAY, IF SPACE CONSTRAINTS DO NOT EXIST.

NEW YORK STATE OF OPPORTUNITY. **Department of Transportation**

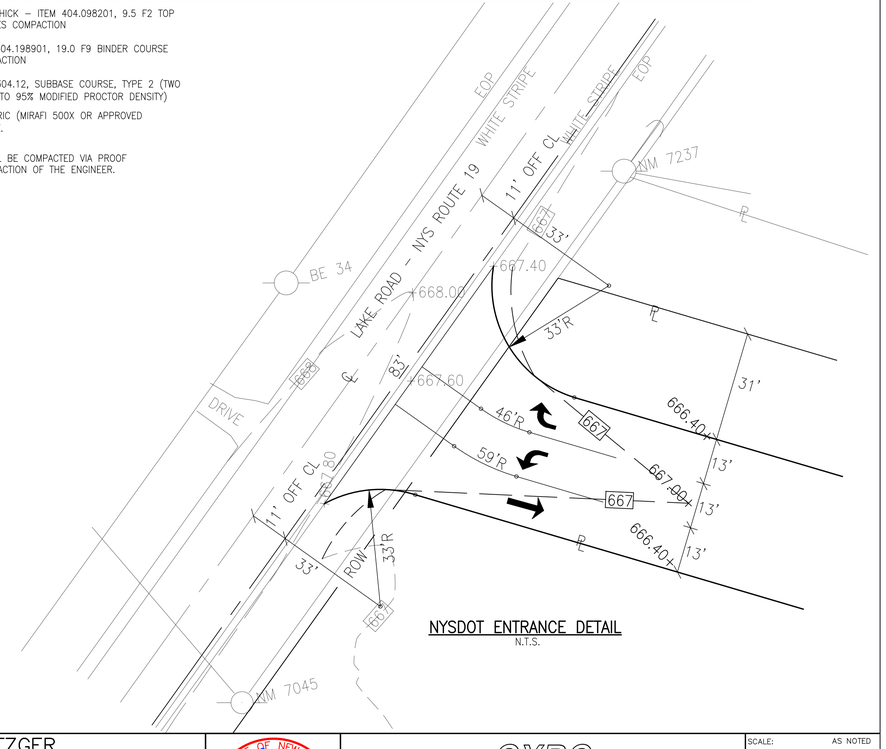
U.S. CUSTOMARY STANDARD SHEET

WORK ZONE TRAFFIC CONTROL
NON-FREEWAY
SHOULDER CLOSURE
SHORT TERM OPERATION

APPROVED DECEMBER 2, 2021	ISSUED UNDER EI 21-028
Robert Limoges	619-310
ROBERT LIMOGES, P.E. DIRECTOR, OTSM	



NYSDOT ASPHALT PAVING SECTION
N.T.S.



NYSDOT ENTRANCE DETAIL
N.T.S.

NOTE: THIS PLAN HAS BEEN DESIGNED BY MCE. QUESTIONS SHOULD BE DIRECTED TO THE OFFICE LISTED IN THE TITLE BLOCK. ANY REVISIONS TO THIS PLAN SHALL HAVE PRIOR APPROVAL OF THE NYSDOT.

Designed By:	ARH
Drawn By:	ARH
Checked By:	JCM
Cad File:	M-2405

NOTE: UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING IS A VIOLATION OF SECTION 7209, PROVISION 2, OF THE NEW YORK STATE EDUCATION LAW

REVISION	BY/CK	DATE

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STATE OF NEW YORK – MICHAEL R. METZGER – 066786 – LICENSED PROFESSIONAL ENGINEER

OXBO

TOWN OF BERGEN, GENESEE COUNTY, NEW YORK

DETAILS – NYSDOT

SCALE:	AS NOTED
DATE:	May 20, 2024
JOB NO:	M-2405
SHEET NO:	DT-7

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GENERAL NOTES

1. THE TYPICAL DETAILS DEPICTED ON THE STANDARD SHEETS AND IN THE MUTCD, REFLECT THE MINIMUM REQUIREMENTS.
2. PROPOSED REVISIONS TO THE TRAFFIC CONTROL PLAN SHALL BE PROVIDED, IN WRITING, TO THE DOT ENGINEER FOR REVIEW AND APPROVAL BY THE REGIONAL DIRECTOR OR HIS/HER DESIGNEE FIVE (5) WORK DAYS PRIOR TO THE PLANNED IMPLEMENTATION OF SUCH PROPOSED REVISIONS, EXCEPT FOR CHANGES THAT ALTER THE SCOPE OF THE TRAFFIC CONTROL PLAN. SUCH CHANGES IN SCOPE MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL BY THE REGIONAL DIRECTOR OR HIS/HER DESIGNEE THIRTY (30) WORK DAYS PRIOR TO IMPLEMENTATION OF SUCH REVISIONS.
3. THE NAMES, ADDRESSES, AND TELEPHONE NUMBERS OF STAFF WHO ARE AUTHORIZED TO SECURE LABOR, MATERIALS, AND EQUIPMENT FOR EMERGENCY REPAIRS OUTSIDE NORMAL WORKING HOURS SHALL BE PROVIDED, IN WRITING, TO THE NYSDOT ENGINEER. THE ENGINEER WILL PROVIDE THE SUBMITTED INFORMATION TO REGIONAL MANAGEMENT, THE NEW YORK STATE POLICE, THE RESIDENT ENGINEER, AND THE LOCAL POLICE.
4. STANDARD SHEET 619-503 MAY BE USED FOR AN OFFSITE DETOUR SETUP FOR BOTH LONG TERM AND SHORT TERM WORK DURATIONS.
5. REGIONAL HIGH-VOLUME RESTRICTIONS SHALL BE FOLLOWED. CONSULT WITH DOT ENGINEER IF EXCEPTION NEEDED.
6. PLAN AHEAD TO AVOID CONFLICTING WORK ZONES. CHECK FOR CONSTRUCTION PROJECTS, CLOSURES, & RESTRICTIONS AT WWW.511NY.ORG, WWW.DOT.NY.GOV/PROJECTS, AND WITH NYSDOT ENGINEER.
7. WORK ZONE INCIDENTS SHALL BE DOCUMENTED AND REPORTED USING EITHER THE DEPARTMENT'S WORK ZONE INCIDENT FORM, OR THE CONSTRUCTION INCIDENT REPORTING SYSTEM, AS APPROPRIATE.
8. CONSIDER CLOSURE WIDTH AND THE ABILITY TO ACCOMMODATE WIDE LOAD VEHICLES BEFORE ESTABLISHING WORK ZONES.
9. IF THE WORK ZONE AFFECTS AN EXISTING ACCESSIBLE AND DETECTABLE PEDESTRIAN FACILITY, ACCESSIBILITY AND DETECTABILITY SHALL BE PROVIDED ALONG THE ALTERNATE ROUTE.

ACTIVITY AREA

1. A 500' MINIMUM LONGITUDINAL DISTANCE SHALL BE MAINTAINED BETWEEN CONSTRUCTION OPERATIONS ON ALTERNATE SIDES OF THE ROADWAY, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
2. WHEN TWO OR MORE AREAS ARE ADJACENT, OVERLAP, OR ARE IN CLOSE PROXIMITY, THE CONTRACTOR SHALL ENSURE THERE ARE NO CONFLICTING SIGNS AND THAT LANE CONTINUITY IS MAINTAINED THROUGHOUT ALL WORK AREAS.

SIGNS

1. THE LOCATIONS OF THE SIGNS SHOWN ON THE WORK ZONE TRAFFIC CONTROL PLANS AND DETAILS MAY BE ADJUSTED BASED ON SIGHT DISTANCE AND OTHER CONSIDERATIONS. THE FINAL LOCATIONS OF SIGNS ARE SUBJECT TO APPROVAL OF THE ENGINEER.
2. FOR LONG TERM WORK DURATIONS, ANY EXISTING SIGNS, INCLUDING OVERHEAD SIGNS, WHICH CONFLICT WITH THE TEMPORARY TRAFFIC CONTROL SIGN LAYOUT SHALL BE COVERED, REMOVED, STORED OR RESET, AS APPROVED BY THE ENGINEER. ALL APPROPRIATE EXISTING SIGNS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AND/OR LOCATION UNLESS OTHERWISE REPLACED IN THIS CONTRACT.
3. SIGNS AT OR NEAR INTERSECTIONS SHALL BE PLACED SO THAT THEY DO NOT OBSTRUCT A MOTORIST'S LINE OF SIGHT.
4. SIGNS MOUNTED ON THE MEDIAN OF DIVIDED HIGHWAYS WHERE MEDIAN BARRIER IS IN PLACE MAY BE MOUNTED ON THE BARRIER WITH A SADDLE TYPE BRACKET OR OMITTED WITH THE APPROVAL OF THE DOT ENGINEER. LAYING THE SIGN DOWN IN A HORIZONTAL POSITION IS NOT PERMITTED.
5. THE DIMENSIONS OF WORK ZONE TRAFFIC CONTROL SIGNS ARE DESCRIBED IN THE MUTCD. ANY CHANGES TO THE DIMENSIONS SHALL BE APPROVED BY THE REGIONAL DIRECTOR OR BY HIS/HER DESIGNEE.
6. NYR9-12 SHALL BE USED IN PLACE OF NYR9-11 WHEN A REDUCED REGULATORY SPEED LIMIT SIGN IS AUTHORIZED.
7. RIGID AND FLEXIBLE "ROLL-UP" SIGNS MAY BE USED FOR MOBILE, SHORT DURATION AND SHORT-TERM STATIONARY WORK. RIGID SIGNS MUST BE MOUNTED AT LEAST 5 FEET ABOVE GRADE (7 FEET WHERE THERE ARE PEDESTRIANS OR PARKED CARS). FLEXIBLE SIGNS SHALL BE MOUNTED AT LEAST ONE FOOT ABOVE GRADE. MESH SIGNS SHALL NOT BE USED. USE RETRO REFLECTORIZED RIGID SIGNS FOR NIGHTTIME WORK.

LANE WIDTHS

1. UNLESS AUTHORIZED BY THE ENGINEER, THE MINIMUM LANE WIDTHS FOR WORK ZONE TRAVEL LANES SHALL BE AS FOLLOWS: FREEWAYS AND/OR EXPRESSWAYS IS 11'. THE MINIMUM LANE WIDTH FOR ALL OTHER TYPES OF ROADWAYS IS 10'.
2. A WRITTEN NOTE SHALL BE PROVIDED TO THE ENGINEER, A MINIMUM OF 21 CALENDAR DAYS IN ADVANCE OF PERFORMING ANY WORK THAT RESULTS IN THE REDUCED WIDTH OF AN EXISTING ROADWAY, SO THAT THE ENGINEER MAY NOTIFY THE REGIONAL PERMIT ENGINEER IN A TIMELY MANNER.
3. IF THE WORK ZONE AFFECTS PEDESTRIANS, A MINIMUM PEDESTRIAN PATHWAY WIDTH OF 5 FEET SHALL BE MAINTAINED UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.
4. TEMPORARY BICYCLE ACCOMMODATIONS SHALL NOT BE LESS THAN WHAT CURRENTLY EXISTS UNLESS AUTHORIZED BY THE ENGINEER.

PROTECTIVE VEHICLES

1. PROTECTIVE VEHICLES ARE DIVIDED INTO 2 CATEGORIES BASED ON THE GROSS VEHICLE WEIGHT (GVW):
   - PROTECTIVE VEHICLE LIGHT (PVL) SHALL HAVE A MINIMUM GVW OF 9,500 LBS. OR GREATER.
   - PROTECTIVE VEHICLE HEAVY (PVH) SHALL HAVE A MINIMUM GVW OF 22,000 LBS. OR GREATER.
2. IF THE PROTECTIVE VEHICLE ENCROACHES INTO THE TRAVEL LANE, OR IF IT REMAINS ENTIRELY ON THE SHOULDER OF ANY HIGH SPEED ROAD (≥ 45 MPH), IT SHALL BE EQUIPPED WITH A DEPLOYED TRUCK/TRAILER MOUNTED IMPACT ATTENUATOR (TMIA, SEE TABLE 011-01 ON SHEET 619-011). BALLAST MAY BE USED TO BRING A LIGHTER VEHICLE UP TO THE INDICATED WEIGHT PROVIDED THE BALLAST IS SECURELY CONTAINED WITHIN AN ENCLOSED BODY OR OTHERWISE SECURELY FASTENED TO THE VEHICLE PURSUANT TO FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION (FMCSA) CARGO SECUREMENT RULES, SUCH THAT:
   1) THE BALLAST WILL NOT SEPARATE FROM THE VEHICLE UPON IMPACT AND
   2) THE BALLAST WEIGHT WILL NOT EXCEED THE MANUFACTURER'S GROSS VEHICLE WEIGHT RATING (GVWR).
   TRUCK/TRAILER MOUNTED IMPACT ATTENUATORS SHALL NOT BE MOUNTED/INSTALLED ON VEHICLES WITH A GROSS WEIGHT (GVW) LESS THAN WHAT IS MINIMALLY REQUIRED BY THE MANUFACTURER OF THE TMIA.
3. WHEN A PROTECTIVE VEHICLE(S) IS USED BETWEEN THE WORK VEHICLE (CREW) OR HAZARD AND THE TRAFFIC IN A MOVING OPERATION IT IS REFERRED TO AS A SHADOW VEHICLE(S).
4. WHEN A PROTECTIVE VEHICLE(S) IS USED BETWEEN THE WORK VEHICLE (CREW) OR HAZARD AND THE TRAFFIC IN A STATIONARY OPERATION IT IS REFERRED TO AS A BARRIER VEHICLE(S).
5. WHEN A PROTECTIVE VEHICLE IS USED IN ADVANCE OF EITHER MOVING OR STATIONARY OPERATIONS TO DISPLAY SIGN MESSAGES IT IS REFERRED TO AS AN ADVANCE WARNING VEHICLE. WHEN SIGNS ARE MOUNTED ON AN ADVANCED WARNING VEHICLE, THEY SHALL NOT OBSTRUCT VISIBILITY OF ANY LIGHTS (TAILLIGHTS OR WARNING LIGHTS), OR SIDE-VIEW MIRRORS ON THE VEHICLE, OR TRUCK MOUNTED ARROW BOARDS.
6. IN A MOVING OPERATION OR A STATIONARY OPERATION THAT OCCUPIES A LOCATION FOR UP TO 1 HOUR, THE OPERATOR SHALL REMAIN IN THE PROTECTIVE VEHICLE WITH THE SAFETY BELT AND HEADREST PROPERLY ADJUSTED, MAINTAIN VEHICLE SPACING, AND KEEP THE WHEELS ALIGNED WITH THE LANE STRIPING AND LANE TO MAINTAIN LANE DISCIPLINE AND TO STAY IN LANE IF STRUCK. THE PARKING BRAKE SHALL BE SET WHENEVER POSSIBLE. TWO-WAY RADIOS SHOULD BE USED TO COMMUNICATE BETWEEN THE OPERATOR AND THE WORK CREW.
7. IN A STATIONARY OPERATION THAT OCCUPIES A LOCATION FOR MORE THAN 1 HOUR, ONCE THE PROTECTIVE VEHICLE HAS BEEN APPROPRIATELY PLACED, IT SHOULD BE UNOCCUPIED. UNOCCUPIED VEHICLE SHALL BE POSITIONED PARALLEL TO TRAFFIC, PARKING BRAKE SET, PLACED IN 2ND GEAR (MANUAL TRANSMISSIONS /ENGINE OFF) OR PARK / NEUTRAL (AUTOMATIC TRANSMISSIONS). THE FRONT WHEELS SHALL BE ALIGNED WITH THE LANE STRIPING AND LANE TO MAINTAIN LANE DISCIPLINE AND TO STAY IN LANE IF STRUCK.
8. NO WORK ACTIVITY, EQUIPMENT, VEHICLES AND/OR MATERIALS SHALL BE LOCATED BETWEEN THE PROTECTIVE VEHICLE AND THE ACTIVE WORK AREA (ROLL AHEAD DISTANCE).
9. DIRECT VERBAL COMMUNICATION BETWEEN THE PROTECTIVE VEHICLES AND THE WORK VEHICLE(S) / EQUIPMENT SHALL BE UTILIZED WHERE AVAILABLE.

CHANNELIZING DEVICES

1. WHERE POSSIBLE ALL CHANNELIZING AND GUIDING DEVICES ARE TO BE PLACED SO AS TO PROVIDE A MINIMUM 2' LATERAL CLEARANCE TO THE TRAVELED WAY.
2. A DROP-OFF OF GREATER THAN 24 INCHES WITHIN 10 FEET FROM THE EDGE OF THE TRAVELED WAY TO REMAIN AT THE END OF THE WORK SHIFT SHALL BE SEPARATED FROM TRAFFIC WITH POSITIVE BARRIER. FOR POSTED SPEED LIMIT OF 45 MPH AND LESS, A DROP-OFF OF GREATER THAN 24 INCHES WITHIN 10 FEET FROM THE EDGE OF THE TRAVELED WAY THAT IS 100 FEET OR LESS IN LENGTH WILL BE ALLOWED WITH CHANNELIZING DEVICES CONSISTING OF DRUMS, EXTRA TALL CONES, OR OVERSIZED VERTICAL PANELS ONLY AT A MAXIMUM SPACING OF 20 FEET FOR SHORT DURATIONS NOR TO EXCEED ONE WORK SHIFT.
3. TEMPORARY POSITIVE BARRIER MAY BE SUBSTITUTED WITH DRUM CHANNELIZING DEVICES, IN SOME CIRCUMSTANCES, WITH APPROVAL OF THE REGIONAL TRAFFIC ENGINEER BASED ON GUIDANCE FOUND IN THE HIGHWAY DESIGN MANUAL AND ENGINEERING JUDGEMENT.

PUBLIC ACCESS

1. PROPERTY OWNERS WHOSE DRIVEWAYS WILL BE MADE INACCESSIBLE SHALL BE NOTIFIED AT LEAST 24 HOURS PRIOR TO RESTRICTING USE OF THE DRIVEWAY. FOR MULTIPLE ACCESS PROPERTIES, AT LEAST ONE DRIVEWAY SHALL BE OPEN AT ALL TIMES. ACCESS SHALL BE RESTORED TO ALL DRIVEWAYS AS SOON AS POSSIBLE.
2. SUITABLE RAMPS SHALL BE INSTALLED TO MAINTAIN SMOOTH TRANSITIONS FROM RESIDENTIAL AND COMMERCIAL DRIVEWAYS TO AND FROM THE WORK AREA.

LANE CLOSURES

1. LANE CLOSURES SHALL BE LOCATED TO PROVIDE OPTIMUM VISIBILITY, I.E. BEFORE CURVES AND CRESTS, TO THE EXTENT CONDITIONS PERMIT.
2. THE ENGINEER MAY REQUIRE THAT ALL LANES BE RE-OPENED AT ANY TIME IF THE ROUTE IS NEEDED FOR EMERGENCY PURPOSES. THIS COULD INCLUDE INCIDENTS AT LOCATIONS OUTSIDE THE CONTRACT LIMITS.
3. EACH ARROW PANEL SHALL BE VISIBLE 1500 FEET IN ADVANCE FROM ANY POINT WITHIN THE ROADWAY.

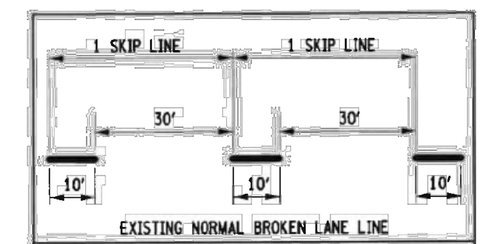
ERRATA 2 EFF. 09/01/23 ISSUED WITH EB 23-016
ERRATA 1 EFF. 05/01/23 ISSUED WITH EB 22-033

NEW YORK STATE OF OPPORTUNITY. | Department of Transportation
U.S. CUSTOMARY STANDARD SHEET
WORK ZONE TRAFFIC CONTROL GENERAL NOTES (SHEET 1 OF 2)
APPROVED DECEMBER 21, 2022 — Robert Limoges — ROBERT LIMOGES, P.E. DIRECTOR, OTSM
ISSUED UNDER EI 22-033
619-010

FILE NAME = 619-010_E1.dgn
DATE/TIME = 13-JUN-2023 07:48
USER = rfoote

WORK ZONE TRAFFIC CONTROL LEGEND	
SYMBOL	DESCRIPTION
	ARROW PANEL
	ARROW PANEL, CAUTION MODE
	ARROW PANEL TRAILER OR SUPPORT
	CHANGEABLE MESSAGE SIGN (PVMS)
	CHANNELIZING DEVICE
	CONE
	CRASH CUSHION/TEMPORARY IMPACT ATTENUATOR
	DIRECTION OF TEMPORARY TRAFFIC DETOUR
	DIRECTION OF TRAFFIC
	AUTOMATED FLAGGER ASSISTANCE DEVICE WITH OPERATOR
	FLAGGER
	FLAG TREE
	LUMINAIRE
	MOWER
	PARKWAY GRASS SHOULDER
	PAVEMENT MARKINGS THAT SHALL BE REMOVED FOR A LONG TERM PROJECT
PVMS	PORTABLE VARIABLE MESSAGE SIGN
	ADVANCE WARNING SIGN WITH ORANGE FLAGS
	TRAILER FOR ARROW PANEL OR PORTABLE VARIABLE MESSAGE SIGN (PVMS)

WORK ZONE TRAFFIC CONTROL LEGEND	
SYMBOL	DESCRIPTION
	SIGN, TEMPORARY
	SPOTTER
	TEMPORARY POSITIVE BARRIER
	TEMPORARY POSITIVE BARRIER WITH WARNING LIGHTS
	TEMPORARY TRAFFIC SIGNAL HEAD
	TYPE III BARRICADE
	WARNING LIGHTS
	WORK AREA
	WORK VEHICLE
	WORK VEHICLE (MULCHING/HERBICIDE OPERATION)
	WORK VEHICLE (PAVEMENT MARKING)
	WORK VEHICLE (SIGNAL WORK)
PV	PROTECTIVE VEHICLE
PVL	PROTECTIVE VEHICLE LIGHT
PVH	PROTECTIVE VEHICLE HEAVY
	TRUCK/TRAILER MOUNTED IMPACT ATTENUATOR (TMIA)



DETAIL 011A - EXISTING SKIP LINES

ERRATA 2 EFF. 09/01/23 ISSUED WITH EB 23-016
ERRATA 1 EFF. 05/01/2023 ISSUED WITH EB 22-033

NEW YORK STATE OF OPPORTUNITY. | Department of Transportation
U.S. CUSTOMARY STANDARD SHEET
WORK ZONE TRAFFIC CONTROL GENERAL TABLES AND LEGEND (SHEET 1 OF 2)
APPROVED DECEMBER 21, 2022 — Robert Limoges — ROBERT LIMOGES, P.E. DIRECTOR, OTSM
ISSUED UNDER EI 22-033
619-011

FILE NAME = 619-011_LE2.dgn
DATE/TIME = 04-MAY-2023 10:55
USER = rfoote

WORK DURATION DEFINITIONS

1. THERE ARE MAINLY FIVE WORK DURATIONS:
   A. LONG-TERM IS STATIONARY WORK THAT OCCUPIES A LOCATION MORE THAN 3 CONSECUTIVE DAYS.
   B. INTERMEDIATE-TERM IS STATIONARY WORK THAT OCCUPIES A LOCATION MORE THAN ONE DAYLIGHT PERIOD UP TO 3 CONSECUTIVE DAYS, OR NIGHTTIME WORK LASTING MORE THAN 1 HOUR.
   C. SHORT-TERM IS STATIONARY DAYTIME WORK THAT OCCUPIES A LOCATION FOR MORE THAN 1 HOUR WITHIN A SINGLE DAYLIGHT PERIOD.
   D. SHORT DURATION IS WORK THAT OCCUPIES A LOCATION UP TO 1 HOUR. IT CAN BE PERFORMED DURING THE DAYTIME OR AT NIGHT IN ACCORDANCE WITH NOTES N1 TO N11 NOTES ON NIGHTTIME WORK.
   E. MOBILE IS WORK THAT MOVES INTERMITTENTLY OR CONTINUOUSLY WHERE THE WORK AT ANY SPECIFIC LOCATION COMPLETES WITHIN 15 MINUTES. IT IS USED FOR VEHICLE BASED OPERATIONS AND DOES NOT INVOLVE WORKERS ON FOOT. IT CAN BE PERFORMED DURING THE DAYTIME OR AT NIGHT IN ACCORDANCE WITH NOTES N1 TO N10 NOTES ON NIGHTTIME WORK.
2. SPECIAL OPERATIONS ARE WORK OPERATIONS THAT DO NOT FIT INTO ONE OF THE ABOVE FIVE CATEGORIES. SPECIAL OPERATIONS INCLUDE:
   A. STOP AND GO OPERATIONS - WORK THAT COMPLETES WITHIN 5 MINUTES AND ALLOWS WORKERS ON FOOT.
   B. OTHER OPERATIONS INCLUDING MOWING, MULCHING/HERBICIDE OPERATIONS, TEMPORARY ROAD/INTERSECTION CLOSURES, ETC.

ROADWAY TYPE DEFINITIONS

1. FREEWAY:
   A. INTERSTATE: INTERREGIONAL HIGH-SPEED, HIGH-VOLUME, DIVIDED FACILITIES WITH COMPLETE CONTROL OF ACCESS.
   B. PARKWAY: DIVIDED HIGHWAYS FOR NON-COMMERCIAL TRAFFIC WITH FULL CONTROL OF ACCESS, GRADE PARKWAY SEPARATIONS, INTERCHANGES, AND OCCASIONAL AT-GRADE INTERSECTIONS. PARKWAYS ARE DESIGNATED BY LAW.
2. EXPRESSWAY: DIVIDED HIGHWAYS FOR THROUGH TRAFFIC WITH FULL OR PARTIAL CONTROL OF ACCESS AND GENERALLY WITH GRADE SEPARATIONS AT MAJOR CROSSROADS. ALL FREEWAY STANDARD SHEETS ARE APPLICABLE TO EXPRESSWAY.
3. NON-FREEWAY:
   A. MULTILANE DIVIDED HIGHWAY
   B. MULTILANE UNDIVIDED HIGHWAY
   C. TWO-LANE TWO-WAY ROADWAY

ALL NON-FREEWAYS CAN BE EITHER URBAN OR RURAL:

URBAN: (MEETS MORE THAN 1 OF THE FOLLOWING CRITERIA)
- •HIGH DENSITY DEVELOPMENT
- •ON-STREET PARKING
- •VARIED BUILDING SETBACKS
- •MULTI-STORY AND LOW-TO MEDIUM-RISE STRUCTURES FOR RESIDENTIAL
- •COMMERCIAL, AND EDUCATIONAL USES, STRUCTURES THAT ACCOMMODATE MIXED USES: COMMERCIAL, RESIDENTIAL, AND PARKING
- •LIGHT INDUSTRIAL, AND SOMETIMES HEAVY INDUSTRIAL, LAND USE
- •PROMINENT DESTINATIONS WITH SPECIALIZED STRUCTURES, E.G., LARGE THEATERS, SPORTS FACILITIES OR CONFERENCE CENTERS
- •HIGH LEVELS OF PEDESTRIAN AND BICYCLIST ACTIVITY, WITH NEARLY CONTINUOUS SIDEWALKS AND MARKED CROSSWALKS
- •HIGHER DENSITY OF TRANSIT STOPS AND ROUTES
- •DRIVEWAY DENSITIES GREATER THAN 25 DRIVEWAYS/MILE ON EACH SIDE OF THE ROAD
- •MINOR COMMERCIAL DRIVEWAY DENSITIES OF 10 DRIVEWAYS/MILE OR GREATER
- •MAJOR COMMERCIAL DRIVEWAYS
- •HIGH DENSITY OF CROSS STREETS

RURAL: DOES NOT MEET MORE THAN ONE OF THE ABOVE CRITERIA.

NOTES FOR NIGHTTIME OPERATIONS:

N1. WORK OCCURRING AFTER SUNSET AND BEFORE SUNRISE WILL BE CONSIDERED NIGHTTIME OPERATIONS.
N2. ALL SIGNS, STOP/SLOW PADDLES AND RED FLAGS USED TO WARN/ALERT/CONTROL TRAFFIC SHALL BE RETROREFLECTIVE.
N3. ALL WORKERS INVOLVED SHALL WEAR PROTECTIVE HELMETS AND NIGHTTIME APPAREL IN ACCORDANCE WITH §107-05A. HIGH VISIBILITY APPAREL AT ALL TIMES.
N4. VEHICLES OPERATING ON THE PAVEMENT OF A CLOSED ROADWAY OR TRAVEL LANE SHALL DISPLAY ROTATING AMBER BEACONS OR FLASHING LED BEACONS AT ALL TIMES.
N5. LEVEL I ILLUMINATION SHALL BE PROVIDED NEAR THE BEGINNING OF LANE CLOSURE TAPERS AND AT ROAD CLOSURES, INCLUDING THE SETUP AND REMOVAL OF THE CLOSURE TAPERS.
N6. LEVEL II ILLUMINATION SHALL BE PROVIDED FOR FLAGGING STATIONS, ASPHALT PAVING, MILLING, AND CONCRETE PLACEMENT AND/OR REMOVAL OPERATIONS, INCLUDING BRIDGE DECKS, 50 FEET AHEAD OF AND 100 FEET BEHIND A PAVING OR MILLING MACHINE.
N7. LEVEL III ILLUMINATION SHALL BE PROVIDED FOR PAVEMENT OR STRUCTURAL CRACK FILLING, JOINT REPAIR, PAVEMENT PATCHING AND REPAIRS, INSTALLATION OF SIGNAL EQUIPMENT OR OTHER ELECTRICAL/MECHANICAL EQUIPMENT, AND OTHER TASKS INVOLVING FINE DETAILS OR INTRICATE PARTS AND EQUIPMENT.
N8. ALL LIGHTING SHALL BE DESIGNED, INSTALLED, AND OPERATED TO AVOID GLARE THAT AFFECTS TRAFFIC ON THE ROADWAY OR THAT CAUSES ANNOYANCE OR DISCOMFORT FOR RESIDENCES ADJOINING THE ROADWAY.
N9. PRIOR TO THE START OF NIGHTTIME OPERATIONS, A WRITTEN NIGHTTIME OPERATIONS AND LIGHTING PLAN IS REQUIRED FOR APPROVAL FROM THE DOT ENGINEER.
N10. SEE STANDARD SPECIFICATIONS §619 FOR ADDITIONAL REQUIREMENTS AND CONSIDERATIONS. REFER TO SECTION 619-3.19B FOR BALLOON LIGHTING REQUIREMENTS.
N11. FLAGGERS SHALL USE A FLASHLIGHT WITH RED GLOW CONE/RED LED BATON FOR FLAGGING IN NON-ILLUMINATED FLAGGER STATIONS DURING NIGHTTIME OPERATIONS.

NEW YORK STATE OF OPPORTUNITY. | Department of Transportation
U.S. CUSTOMARY STANDARD SHEET
WORK ZONE TRAFFIC CONTROL GENERAL NOTES (SHEET 2 OF 2)
APPROVED DECEMBER 21, 2022 — Robert Limoges — ROBERT LIMOGES, P.E. DIRECTOR, OTSM
ISSUED UNDER EI 22-033
619-010

FILE NAME = 619-010-2.dgn
DATE/TIME = 13-JUN-2023 07:53
USER = rfoote

TABLE 011-01: PROTECTIVE VEHICLE REQUIREMENTS [A,B]

CLOSURE TYPE	DURATION / ROAD TYPE & SPEED / EXPOSURE CONDITIONS (SEE NOTE 1)	MOBILE OPERATION AND STOP & GO: FREEWAY	MOBILE: NON-FREEWAY ≥ 45 MPH	MOBILE: NON-FREEWAY 35 - 40 MPH	MOBILE: NON-FREEWAY ≤ 30 MPH	SHORT DURATION OPERATION: FREEWAY	SHORT DURATION: NON-FREEWAY ≥ 45 MPH	SHORT DURATION: NON-FREEWAY 35 - 40 MPH	SHORT DURATION: NON-FREEWAY ≤ 30 MPH	SHORT TERM OPERATION: FREEWAY	SHORT TERM: NON-FREEWAY ≥ 45 MPH	SHORT TERM: NON-FREEWAY 35 - 40 MPH	SHORT TERM: NON-FREEWAY ≤ 30 MPH	INTERMEDIATE TERM OPERATION: FREEWAY	INTERMEDIATE: NON-FREEWAY ≥ 45 MPH	INTERMEDIATE: NON-FREEWAY 35 - 40 MPH	INTERMEDIATE: NON-FREEWAY ≤ 30 MPH	LONG TERM OPERATION: FREEWAY	LONG TERM: NON-FREEWAY ≥ 45 MPH	LONG TERM: NON-FREEWAY 35 - 40 MPH	LONG TERM: NON-FREEWAY ≤ 30 MPH
LANE CLOSURE OR ENCROACHMENT	WORKERS ON FOOT OR WORK VEHICLE EXPOSED TO TRAFFIC	PVH+TMIA	PVH+TMIA	PVL+TMIA	PVL	PVH+TMIA	PVH+TMIA	PVL+TMIA	PVL	PVH+TMIA	PVH+TMIA	PVL+TMIA	PVL	PVH+TMIA	PVH+TMIA	PVL+TMIA	SEE NOTE 2	PVH+TMIA	PVH+TMIA	PVL+TMIA	SEE NOTE 2
LANE CLOSURE OR ENCROACHMENT	-NO WORKERS ON FOOT -NO WORK VEHICLE EXPOSED TO TRAFFIC -OTHER HAZARDS EXPOSED (IE EQUIPMENT, MATERIALS)					PVH+TMIA	PVH+TMIA	PVL	PVL	PVH+TMIA	PVH+TMIA	PVL	SEE NOTE 2	PVH+TMIA	PVH+TMIA	SEE NOTE 2	SEE NOTE 2	PVH+TMIA	PVH+TMIA	SEE NOTE 2	SEE NOTE 2
SHOULDER CLOSURE OR ENCROACHMENT	WORKERS ON FOOT OR WORK VEHICLE EXPOSED TO TRAFFIC	PVH+TMIA	PVH+TMIA	PVL+TMIA	PVL	PVH+TMIA	PVH+TMIA	PVL	PVL	PVH+TMIA	PVH+TMIA	PVL	PVL	PVH+TMIA	PVH+TMIA	SEE NOTE 2	SEE NOTE 2	PVH+TMIA	PVH+TMIA	SEE NOTE 2	SEE NOTE 2
SHOULDER CLOSURE OR ENCROACHMENT	-NO WORKERS ON FOOT -NO WORK VEHICLE EXPOSED TO TRAFFIC -OTHER HAZARDS EXPOSED (IE EQUIPMENT, MATERIALS, EXCAVATION)					PVH+TMIA	PVH+TMIA	PVL	PVL	PVH+TMIA	PVH+TMIA	PVL	SEE NOTE 2	PVH+TMIA	SEE NOTE 3	SEE NOTE 2	SEE NOTE 2	PVH+TMIA	SEE NOTE 3	SEE NOTE 2	SEE NOTE 2

LEGEND
PVL - PROTECTIVE VEHICLE LIGHT (MINIMUM GROSS WEIGHT 9,500 LBS. OR GREATER) (SEE NOTE 5)
PVH - PROTECTIVE VEHICLE HEAVY (MINIMUM GROSS WEIGHT 22,000 LBS. OR GREATER)
TMIA - TRUCK/TRAILER MOUNTED IMPACT ATTENUATOR

A. THESE PROTECTIVE VEHICLE REQUIREMENTS ARE NOT APPLICABLE TO PAVING AND MILLING OPERATIONS. A STANDARD BUFFER SPACE SHALL BE PROVIDED FOR THESE OPERATIONS IN ACCORDANCE WITH TABLE 011-03.

B. THESE PROTECTIVE VEHICLE REQUIREMENTS ARE NOT APPLICABLE TO FLAGGING OPERATIONS. PROTECTIVE VEHICLES WITH APPROPRIATE ROLL AHEAD DISTANCE MAY BE USED IN ADVANCE OF THE WORK AREA IF DEEMED NECESSARY BY THE DOT ENGINEER AND THEIR DESIGNEE.

NOTES
1. THE EXPOSURE CONDITIONS ASSUME THERE IS NO POSITIVE PROTECTION PRESENT.
2. EITHER A PROTECTIVE LIGHT (PVL) OR THE STANDARD BUFFER SPACE (SEE TABLE 011-03) SHALL BE PROVIDED.
3. EITHER A PROTECTIVE VEHICLE HEAVY (PVH) OR THE STANDARD BUFFER SPACE (SEE TABLE 011-03) SHALL BE PROVIDED.
4. TRUCK/TRAILER MOUNTED IMPACT ATTENUATORS (TMIA) SHALL NOT BE MOUNTED/INSTALLED ON VEHICLES WITH A GROSS VEHICLE WEIGHT (GVW) LESS THAN WHAT IS MINIMALLY REQUIRED BY THE MANUFACTURER OF THE TMIA.
5. THE USE OF A PROTECTIVE VEHICLE LIGHT (PVL) AS A SHADOW VEHICLE IS LIMITED TO NON-FREEWAY ROADWAYS WHERE THE POSTED SPEED LIMITS IS ≤ 40 MPH UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.

TABLE 011-02: TAPER LENGTHS & NUMBER OF CONES CHART

TAPER LENGTH: (FT.)/ * OF SKIP LINES/ * OF CHANNELIZING DEVICES — LATERAL SHIFT OF TRAFFIC FLOW PATH (FT.)

SHOULDER TAPER LENGTH: (FT.)/ * OF SKIP LINES/ * OF CHANNELIZING DEVICES — FOR SHOULDER WIDTH

PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	4	5	6	7	8	9	10	11	12	SHOULDER ≤ 4 FT.	SHOULDER 5 - 7 FT.	SHOULDER 8 FT.	SHOULDER 9 FT.	SHOULDER 10 FT.	SHOULDER 11 FT.	SHOULDER 12 FT.
25	40/1/2	80/2/3	80/2/3	80/2/3	80/2/3	120/3/4	120/3/4	120/3/4	120/3/4	40/1/2	40/1/2	40/1/2	40/1/2	40/1/2	40/1/2	40/1/2
30	80/2/3	80/2/3	80/2/3	120/3/4	120/3/4	160/4/5	160/4/5	160/4/5	200/5/6	40/1/2	40/1/2	40/1/2	40/1/2	80/2/3	80/2/3	80/2/3
35	80/2/3	120/3/4	120/3/4	160/4/5	160/4/5	200/5/6	200/5/6	240/6/7	240/6/7	40/1/2	40/1/2	80/2/3	80/2/3	80/2/3	80/2/3	80/2/3
40	120/3/4	160/4/5	160/4/5	200/5/6	240/6/7	240/6/7	280/7/8	320/8/9	320/8/9	40/1/2	80/2/3	80/2/3	80/2/3	120/3/4	120/3/4	120/3/4
45	200/5/6	240/6/7	280/7/8	320/8/9	360/9/10	400/10/11	440/11/12	520/13/14	560/14/15	80/2/3	80/2/3	120/3/4	120/3/4	120/3/4	120/3/4	160/4/5
50	200/5/6	240/6/7	320/8/9	360/9/10	400/10/11	440/11/12	520/13/14	560/14/15	600/15/16	80/2/3	120/3/4	160/4/5	160/4/5	160/4/5	160/4/5	160/4/5
55	240/6/7	280/7/8	320/8/9	400/10/11	440/11/12	520/13/14	560/14/15	600/15/16	680/17/18	80/2/3	120/3/4	160/4/5	160/4/5	160/4/5	200/5/6	200/5/6
60	240/6/7	320/8/9	360/9/10	440/11/12	480/12/13	560/14/15	600/15/16	680/17/18	720/18/19	80/2/3	120/3/4	160/4/5	200/5/6	200/5/6	240/6/7	240/6/7
65	280/7/8	320/8/9	400/10/11	480/12/13	520/13/14	600/15/16	640/16/17	720/18/19	800/19/20	80/2/3	160/4/5	200/5/6	240/6/7	240/6/7	280/7/8	280/7/8

* THIS TABLE WAS CREATED WITH REFERENCE TO MUTCD TABLE 6H-4.
** THE NUMBER OF CHANNELIZING DEVICES SHOWN IS CALCULATED BASED ON A 40FT DEVICE SPACING. THE NUMBER OF CHANNELIZING DEVICES CAN BE ADJUSTED AS NECESSARY.

TABLE 011-03 LONGITUDINAL BUFFER SPACE

PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	DISTANCE (FT.)/ * OF SKIP LINES
25	155 / 4
30	200 / 5
35	250 / 6
40	305 / 8
45	360 / 9
50	425 / 11
55	495 / 13
65	645 / 16

* THIS TABLE IS THE SAME AS MUTCD TABLE 6C-2.

TABLE 011-04: ROLL AHEAD DISTANCE FOR PROTECTIVE VEHICLES

ROLL AHEAD DISTANCE (FT.)/* OF SKIP LINES FOR VEHICLES

PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	9,500 TO 21,999 LBS. GVW: STATIONARY OPERATION	9,500 TO 21,999 LBS. GVW: MOVING OPERATION (15 MPH MAX.)	22,000 LBS. OR GREATER GVW: STATIONARY OPERATION	22,000 LBS. OR GREATER GVW: MOVING OPERATION (15 MPH MAX.)
≥ 60	200/5	240/6	160/4	200/5
45 - 55	160/4	200/5	120/3	160/4
≤ 40	120/3	120/3	80/2	120/3

TABLE 011-05 FLARE RATES FOR POSITIVE BARRIER

TYPE OF POSITIVE BARRIER	30 MPH	40 MPH	50 MPH	55 MPH	65 MPH
TEMPORARY POSITIVE BARRIER	8:1	11:1	14:1	16:1	20:1
BOX BEAM OR HEAVY POST CORRUGATED BEAM	7:1	9:1	11:1	12:1	15:1

(POSTED SPEED LIMIT)

TABLE 011-06 ADVANCE WARNING SIGN SPACING

ROAD TYPE	DISTANCE BETWEEN SIGNS: A (FT.)	B (FT.)	C (FT.)	SIGN LEGEND: XX	YY
URBAN (≤ 30 MPH*)	100	100	100	AHEAD	AHEAD
URBAN (35-40 MPH*)	200	200	200	AHEAD	AHEAD
URBAN (≥ 45 MPH*)	350	350	350	1000 FT.	AHEAD
RURAL	500	500	500	1500 FT.	1000 FT.
FREEWAY	1000	1500	2640	1 MILE	½ MILE

* PRECONSTRUCTION POSTED SPEED LIMIT.
** THIS TABLE IS THE SAME AS MUTCD TABLE NY6H-3.

TABLE 011-07 TAPER LENGTH FOR TEMPORARY TRAFFIC CONTROL ZONES

TYPE OF TAPER	TAPER LENGTH (L)
MERGING TAPER	L
SHIFTING TAPER	L/2
SHOULDER TAPER	L/3
ONE-LANE, TWO-WAY TRAFFIC TAPER	50 FT. MIN -100 FT. MAX
DOWNSTREAM TAPER	50 FT. MIN -100 FT. MAX

* THIS TABLE IS THE SAME AS MUTCD TABLE 6C-3.

ERRATA 2 EFF. 09/01/23 ISSUED WITH EB 23-016
ERRATA 1 EFF. 05/01/2023 ISSUED WITH EB 22-033

NEW YORK STATE OF OPPORTUNITY. | Department of Transportation
U.S. CUSTOMARY STANDARD SHEET
WORK ZONE TRAFFIC CONTROL GENERAL TABLES AND LEGEND (SHEET 2 OF 2)
APPROVED DECEMBER 21, 2022 — Robert Limoges — ROBERT LIMOGES, P.E. DIRECTOR, OTSM
ISSUED UNDER EI 22-033
619-011

FILE NAME = 619-011-2.dgn
DATE/TIME = 04-MAY-2023 10:57
USER = rfoote

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OXBO
TOWN OF BERGEN, GENESEE COUNTY, NEW YORK
DETAILS — NYSDOT

SCALE:	AS NOTED
DATE:	May 20, 2024
JOB NO:	M-2405
SHEET NO:	DT-8

WORK ZONE TRAFFIC CONTROL SIGN TABLE

SIGN	SIGN DESIGNATION	COLOR CODE	NON-FREEWAY	EXPRESSWAY	FREEWAY
EXIT	E5-1	C	----------	72"X60"	72"X60"
EXIT ONLY	G20-1	A	36"X18"	48"X24"	48"X24"
EXIT ONLY	G20-2	A	36"X18"	48"X24"	48"X24"
EXIT ONLY	G20-4	A	36"X18"	----------	----------
EXIT ONLY	G20-5aP	A	24"X18"	36"X24"	36"X24"
22 22	M1-1	G	3 OR 2 DIGITS 24"X24"	36"X36"	36"X36"
I 495	M1-1†	G	3 DIGITS 30"X24"	45"X36"	45"X36"
X XX	M1-4	B	1 OR 2 DIGITS 24"X24"	36"X36"	36"X36"
XXX	M1-4†	B	3 DIGITS 30"X24"	45"X36"	45"X36"
NORTH	M3-1	SEE NOTE 3	24"X12"	36"X18"	36"X18"
EAST	M3-2				
SOUTH	M3-3				
WEST	M3-4				
CLOSED	M4-8	A	24"X12"	36"X18"	36"X18"
END DETOUR	M4-8a	A	24"X18"	24"X18"	24"X18"
DETOUR	M4-9 M4-9L M4-9R	A	30"X24"	48"X36"	48"X36"
DETOUR	M4-9a	A	30"X24"	30"X24"	----------
1/2 MI DETOUR					
1 MI DETOUR					
E DETOUR					
DETOUR AHEAD	M4-9b	A	30"X24"	30"X24"	----------
DETOUR METRIC	M4-9c	A	30"X24"	30"X24"	----------
DETOUR	M4-10L	A	48"X18"	48"X18"	48"X18"
DETOUR	M4-10R				
	M5-1	SEE NOTE 3	21"X15"	30"X21"	30"X21"
	M5-2	SEE NOTE 3	21"X15"	30"X21"	30"X21"
	M6-1	SEE NOTE 3	21"X15"	30"X21"	30"X21"
	M6-2				
	M6-3				
	M6-4				
XX XX	NYM3-1	B	24"X24"	36"X36"	36"X36"
XXX	NYM3-2	B	30"X24"	45"X36"	45"X36"
XXXX	NYM3-3	B	30"X24"	45"X36"	45"X36"

WORK ZONE TRAFFIC CONTROL SIGN TABLE

SIGN	SIGN DESIGNATION	COLOR CODE	NON-FREEWAY	EXPRESSWAY	FREEWAY
ROAD WORK NEXT XX MILES	NYW3-11	B	24"X42"	48"X64"	48"X64"
ROAD WORK ONLY NEXT XX MILES	NYW3-12	B	24"X36"	36"X54"	48"X72"
ROAD CONSTRUCTION	NYW4-17	A	36"X36"	48"X48"	48"X48"
ROAD CLOSED	NYW8-30	A	48"X24"	48"X24"	48"X24"
ROAD CLOSED	NYW8-31	A	48"X24"	48"X24"	48"X24"
ROAD NOT OPEN	NYW8-32	A	48"X24"	48"X24"	48"X24"
LANE CLOSED	NYW8-33	A	48"X24"	48"X24"	48"X24"
STOP	R1-1	D	36"X36"	36"X36"	48"X48"
SPEED LIMIT XX	R2-1	B	24"X30" OR 30"X36" (SEE NOTE 5)	36"X48"	36"X48"
TWO WAYS TRAFFIC	R2-11	B	24"X30"	36"X48"	36"X48"
END TWO WAYS TRAFFIC	R2-12	B	24"X36"	36"X54"	36"X54"
DO NOT PASS	R4-1	B	24"X30"	36"X48"	36"X48"
	R4-7	B	24"X30"	36"X48"	36"X48"
	R4-7a NARROW	B	18"X30"	----------	----------
	R4-8	B	24"X30"	36"X48"	36"X48"
	R4-8c NARROW	B	18"X30"	----------	----------
KEEP IN LANE	R4-9	B	24"X30"	36"X48"	36"X48"
ROAD CLOSED	R5-1	E	36"X36"	36"X36"	48"X48"
DIRECTIONAL ASSEMBLY	R8-3	E	24"X24"	36"X36"	48"X48"
DIRECTIONAL ASSEMBLY	R9-8	B	36"X18"	36"X18"	----------
DIRECTIONAL ASSEMBLY	R9-9	B	24"X12"	24"X12"	----------
ADVANCE BLOCK (2 sign set)	R9-10	B	24"X12"	24"X12"	----------
ADVANCE BLOCK (3 sign set)	R9-10L R9-10R	B	24"X12"	24"X12"	----------
ADVANCE BLOCK (2 sign set)	R9-11L R9-11R	B	24"X18"	24"X18"	----------
ADVANCE BLOCK (3 sign set)	R9-11d, R9-11dR	B	24"X12"	24"X12"	----------
ADVANCE BLOCK (4 sign set)					
STOP AHEAD	R10-6	B	24"X36"	24"X36"	----------

WORK ZONE TRAFFIC CONTROL SIGN TABLE

SIGN	SIGN DESIGNATION	COLOR CODE	NON-FREEWAY	EXPRESSWAY	FREEWAY
BRIDGE CLOSED	R11-2	B	48"X30"	48"X30"	48"X30"
BRIDGE OUT	R11-2 (W00J)				
ROAD CLOSED TO ALL BUT LOCAL TRAFFIC	R11-3a	B	60"X30"	60"X30"	----------
	W1-6L W1-6R	A	36"X36"	48"X48"	48"X48"
	W1-8L W1-8R	A	36"X36"	48"X48"	48"X48"
	W1-4L W1-4R	A	36"X36"	48"X48"	48"X48"
	W1-6L	A	48"X24"	60"X30"	60"X30"
	W1-6R	A			
	W1-8L	A (NO BORDER)	18"X24"	30"X36"	30"X36"
	W1-8R	A (NO BORDER)			
	W3-1	A[4]	36"X36"	48"X48"	48"X48"
	W3-2	A[4]	36"X36"	48"X48"	48"X48"
	W3-3	A[4]	36"X36"	48"X48"	48"X48"
	W3-4	A	36"X36"	48"X48"	48"X48"
	W3-5	A[4]	36"X36"	48"X48"	48"X48"
	W4-1L W4-1R	A	36"X36"	48"X48"	48"X48"
	W4-2L W4-2R	A	36"X36"	48"X48"	48"X48"

SIGN	SIGN DESIGNATION	COLOR CODE	NON-FREEWAY	EXPRESSWAY	FREEWAY
	W4-2L1 W4-2R1	A	36"X36"	48"X48"	48"X48"
	W4-2L2 W4-2R2	A	36"X36"	48"X48"	48"X48"
	W4-2L3 W4-2R3	A	36"X36"	48"X48"	48"X48"
	W4-21 W4-2R	A	36"X36"	48"X48"	48"X48"

SIGN	SIGN DESIGNATION	COLOR CODE	NON-FREEWAY	EXPRESSWAY	FREEWAY
	N°W23-1	A	36"X36"	48"X48"	48"X48"
ROAD CONS	G20-5aP	GF.12	24"X18"	36"X24"	36"X24"
EXIT OPEN	E5-2	GF.28	48"X36"	48"X36"	48"X36"
EXIT CLOSED	E5-2a	GF.28	48"X36"	48"X36"	48"X36"

COLOR CODE LEGEND

CODE	DESCRIPTION
A	BLACK LEGEND AND BORDER ON AN ORANGE BACKGROUND
B	BLACK LEGEND AND BORDER ON A WHITE BACKGROUND
C	WHITE LEGEND AND BORDER ON A GREEN BACKGROUND
D	WHITE LEGEND AND BORDER ON A RED BACKGROUND
E	RED LEGEND AND BORDER ON A WHITE BACKGROUND
F	BLACK LEGEND AND BORDER ON A FLUORESCENT YELLOW GREEN BACKGROUND
G	WHITE LEGEND AND BORDER ON A BLUE AND RED BACKGROUND

NOTES:
1. DIMENSIONS ARE SHOWN AS WIDTH X HEIGHT.
2. FOR SIGNAGE NOT SHOWN ON THESE TABLES REFER TO THE M.U.T.C.D.
3. COLORS FOR DIRECTION PLAQUES, ADVANCE TURN ARROWS, AND DIRECTIONAL ARROWS SHALL MATCH THE ROUTE OR INTERSTATE SIGN THAT THEY SUPPLEMENT AS PER THE M.U.T.C.D.
4. WHITE-ON-RED SYMBOL IMPOSED ON SIGN WITH BLACK LEGEND AND BORDER ON AN ORANGE BACKGROUND.
5. FOR R2-1 SIGN LARGER DIMENSIONS SHALL BE USED WHEN SIGN FACES MULTIPLE LANES ON A CONVENTIONAL ROAD.

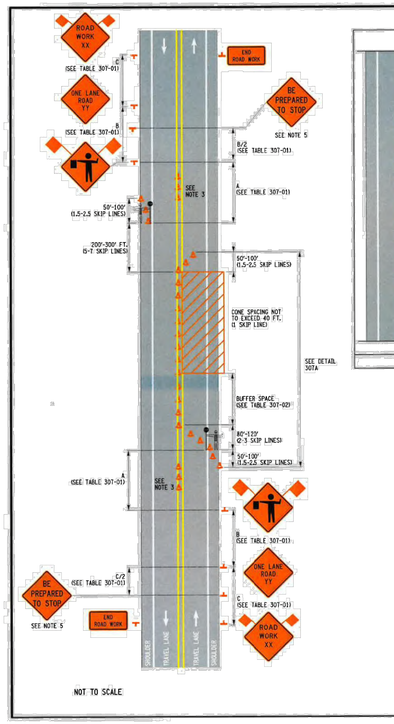
NEW YORK STATE OF OPPORTUNITY. **Department of Transportation**

U.S. CUSTOMARY STANDARD SHEET

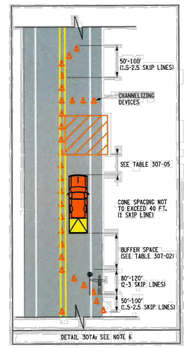
WORK ZONE TRAFFIC CONTROL SIGN TABLE (SHEET 1 OF 2)

APPROVED DECEMBER 2, 2021 — Robert Limoges, ROBERT LIMOGES, P.E., DIRECTOR, OTSM

ISSUED UNDER EI 21-028 — 619-012

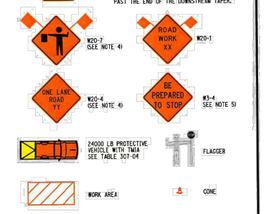


NOT TO SCALE



DETAIL 307A: SEE NOTE 6

NOTES:
1. SHORT-TERM STATIONARY IS DAYTIME WORK THAT OCCUPIES A LOCATION FOR MORE THAN 1 HOUR WITHIN A SINGLE DAY PERIOD.
2. IN URBAN CONDITIONS, ADVANCE WARNING SIGN SPACINGS MAY BE ADJUSTED IN ORDER TO ACCOMMODATE SIDE STREETS AND DRIVEWAYS. IF THERE IS A CONFLICT, MOVE THE SIGN UPSTREAM.
3. CENTERLINE CONES MAY BE ADDED TO ENHANCE THE VISIBILITY OF THE FLAGGER STATION. IF CONES ARE USED, PLACE THEM 100 FT. MINIMUM FROM FLAGGER.
4. FLAGGER SYMBOL SIGN (W20-7) AND "ONE LANE ROAD AHEAD" SIGN (W20-4) SHALL BE REMOVED, COVERED OR TURNED AWAY FROM ROAD USERS WHEN FLAGGING OPERATIONS ARE NOT occurring.
5. IF THE TRAFFIC IS EXPECTED TO QUEUE PAST THE W20-4 SIGN, A W3-4 SIGN SHOULD BE ADDED.
6. IF CONDITIONS WARRANT, PROTECTIVE VEHICLE WITH APPROPRIATE ROLL AHEAD DISTANCE MAY BE USED IN ADVANCE OF THE WORK AREA, TO USE PROTECTIVE VEHICLE, BUFFER SPACE SHALL BE PROVIDED ACCORDINGLY.
7. WHEN A SIDE ROAD OR DRIVEWAY INTERSECTS THE ROADWAY WITHIN A WORK ZONE TRAFFIC CONTROL AREA, ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES AND/OR FLAGGERS SHALL BE PLACED AS NEEDED. ADDITIONAL FLAGGERS SHALL BE LOCATED AT ALL INTERSECTIONS AND COMMERCIAL DRIVEWAYS LOCATED WITHIN OR NEAR THE ACTIVE WORK SPACE.
8. CHANNELIZING DEVICE SPACING (CENTER TO CENTER) SHALL NOT EXCEED 40' IN THE ACTIVE WORK SPACE.
9. CHANNELIZING DEVICES SHALL BE PLACED TRANSVERSELY A MINIMUM OF EVERY 800' AS SHOWN THAN A PAVED SHOULDER HAVING A WIDTH OF 8' OR GREATER IS CLOSED FOR A DISTANCE GREATER THAN 800'.
10. ALL FLAGGERS SHALL USE 24"@MIN.) OCTAGON SHAPED STOP/SLOW PADDLES HAVING 8' STAFF. THE PADDLE IS THE PREFERRED DEVICE, BUT THE FLAG MAY BE USED AT INTERSECTIONS WHERE THE STOP/SLOW PADDLE WOULD DIFFER CONTRADICTING INFORMATION TO DRIVERS, TRAVELING IN OPPOSITE DIRECTIONS/LEGS OF THE INTERSECTION OR DURING INCIDENT MANAGEMENT SITUATIONS.



REFER TO SHEET 2 OF 2 FOR ALL TABLES

NEW YORK STATE OF OPPORTUNITY. **Department of Transportation**

U.S. CUSTOMARY STANDARD SHEET

WORK ZONE TRAFFIC CONTROL TWO-LANE TWO-WAY ROADWAY LANE CLOSURE WITH FLAGGERS SHORT TERM OPERATION (SHEET 1 OF 2)

APPROVED DECEMBER 2, 2021 — Robert Limoges, ROBERT LIMOGES, P.E., DIRECTOR, OTSM

ISSUED UNDER EI 21-028 — 619-307

WORK ZONE TRAFFIC CONTROL SIGN TABLE

SIGN	SIGN DESIGNATION	COLOR CODE	NON-FREEWAY	EXPRESSWAY	FREEWAY
KEEP RIGHT	W5-1	A	36"X36"	48"X48"	48"X48"
KEEP LEFT	W5-4	A	36"X36"	48"X48"	48"X48"
	W6-3	A	36"X36"	48"X48"	48"X48"
BUS ONLY	W7-3aP	A	24"X18"	36"X30"	36"X30"
BUMP	W8-1	A	36"X36"	48"X48"	48"X48"
PAVEMENT ENDS	W8-3	A	36"X36"	48"X48"	48"X48"
LOOSE GRAVEL	W8-7	A	36"X36"	48"X48"	48"X48"
SLIPPERY WHEN WET	W8-8	A	36"X36"	48"X48"	48"X48"
DIP	W8-9	A	36"X36"	48"X48"	48"X48"
CENTER LINE	W8-12	A	36"X36"	----------	----------
FALLING ROCKS	W8-14	A	36"X36"	48"X48"	48"X48"
REVERSE CURVE	W8-15	A	36"X36"	48"X48"	48"X48"
	W8-17	A	36"X36"	48"X48"	48"X48"
ROAD ICE	W8-17b	A	24"X18"	30"X24"	30"X24"
NO SHOULDER	W8-23	A	36"X36"	48"X48"	48"X48"
SLOW TO SIDE ROAD	W8-24	A	36"X36"	48"X48"	48"X48"
ONE LANE BRIDGE	W9-3	A	36"X36"	48"X48"	48"X48"
	W11-1L* W11-1R	A OR F	36"X36"	36"X36"	----------
	W11-2L* W11-2R	F	36"X36"	36"X36"	----------
	W11-15L* W11-15R	F	36"X36"	36"X36"	----------
IN LANE	NYW6-32P*	A	24"X18"	24"X18"	----------

* A FLOURESCENT YELLOW-GREEN BACKGROUND COLOR SHALL BE USED FOR THIS SIGN PLAQUE.

WORK ZONE TRAFFIC CONTROL SIGN TABLE

SIGN	SIGN DESIGNATION	COLOR CODE	NON-FREEWAY	EXPRESSWAY	FREEWAY
XX MPH	W13-1P	A	24"X24"	30"X30"	30"X30"
ON RAMP	W13-4	A	36"X36"	36"X36"	36"X36"
TRUCK	W13-4P	A	48"X48"X36"	----------	----------
EXIT ONLY	W16-2P	A	24"X18"	30"X24"	----------
EXIT ONLY	W16-4P	SEE NOTE 3 A OR F	30"X24"	----------	----------
	W16-5PL W16-5PR	A	24"X18"	----------	----------
	W16-7PL W16-7PR	SEE NOTE 3 A OR F	24"X12"	30"X18"	----------
AHEAD	W16-9P	SEE NOTE 3 A OR F	24"X12"	30"X18"	----------
	W20-1	A	36"X36"	48"X48"	48"X48"
	W20-2	A	36"X36"	48"X48"	48"X48"
	W20-3	A	36"X36"	48"X48"	48"X48"
	W20-4	A	36"X36"	48"X48"	48"X48"
	W20-5	A	36"X36"	48"X48"	48"X48"
	W20-5a	A	36"X36"	48"X48"	48"X48"
	W20-7	A	36"X36"	48"X48"	48"X48"

WORK ZONE TRAFFIC CONTROL SIGN TABLE

SIGN	SIGN DESIGNATION	COLOR CODE	NON-FREEWAY	EXPRESSWAY	FREEWAY
	W21-1	A	36"X36"	48"X48"	48"X48"
SLOW MOVING VEHICLE	W21-4	A	36"X18"	48"X24"	48"X24"
	W21-5	A	36"X36"	48"X48"	48"X48"
	W21-5aL W21-5aR	A	36"X36"	48"X48"	48"X48"
	W21-5bL W21-5bR	A	36"X36"	48"X48"	48"X48"
	W21-8	A	36"X36"	48"X48"	48"X48"
	W22-1	A	36"X36"	48"X48"	48"X48"
TURN OFF TWO WAY TRAFFIC	W22-2	A	42"X36"	42"X36"	42"X36"
END ROADWORK ZONE	W22-3	A	42"X36"	42"X36"	42"X36"
SLOW TRAFFIC AHEAD	W23-1	A	48"X24"	48"X24"	48"X24"
TRAFFIC PATTERN AHEAD	W23-2	A	36"X36"	48"X48"	48"X48"
	W24-1L W24-1R	A	36"X36"	48"X48"	48"X48"
	W24-1aL W24-1aR	A	36"X36"	48"X48"	48"X48"
	W24-1bL W24-1bR	A	36"X36"	48"X48"	48"X48"

COLOR CODE LEGEND

CODE	DESCRIPTION
A	BLACK LEGEND AND BORDER ON AN ORANGE BACKGROUND
B	BLACK LEGEND AND BORDER ON A WHITE BACKGROUND
C	WHITE LEGEND AND BORDER ON A GREEN BACKGROUND
D	WHITE LEGEND AND BORDER ON A RED BACKGROUND
E	RED LEGEND AND BORDER ON A WHITE BACKGROUND
F	BLACK LEGEND AND BORDER ON A FLOURESCENT YELLOW GREEN BACKGROUND
G	WHITE LEGEND AND BORDER ON A BLUE AND RED BACKGROUND

NOTES:
1. DIMENSIONS ARE SHOWN AS WIDTH X HEIGHT.
2. FOR SIGNAGE NOT SHOWN ON THESE TABLES REFER TO THE M.U.T.C.D.
3. WHEN USED IN CONJUNCTION WITH A BICYCLE SIGN (W11-1) OR PEDESTRIAN CROSSING (W11-2) COLOR CODE SHALL MATCH.

NEW YORK STATE OF OPPORTUNITY. **Department of Transportation**

U.S. CUSTOMARY STANDARD SHEET

WORK ZONE TRAFFIC CONTROL SIGN TABLE (SHEET 2 OF 2)

APPROVED DECEMBER 2, 2021 — Robert Limoges, ROBERT LIMOGES, P.E., DIRECTOR, OTSM

ISSUED UNDER EI 21-028 — 619-012

TABLE 307-01: ADVANCE WARNING SIGN SPACING

ROAD TYPE	DISTANCE BETWEEN SIGNS A (FT.)	B (FT.)	C (FT.)	SIGN LEGEND XX	SIGN LEGEND YY
URBAN (≤ 30 MPH)	100	100	100	AHEAD	AHEAD
URBAN (35-40 MPH)	200	200	200	AHEAD	AHEAD
URBAN (≥ 45 MPH)	350	350	350	1000 FT.	AHEAD
RURAL	500	500	500	1500 FT.	1000 FT.

* PRECONSTRUCTION POSTED SPEED LIMIT

TABLE 307-02: LONGITUDINAL BUFFER SPACE

PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	LONGITUDINAL BUFFER SPACE DISTANCE (FT.)/ # OF SKIP LINES
25	155/4
30	200/5
35	250/6
40	305/8
45	360/9
50	425/11
55	495/13

TABLE 307-03: REQUIRED SIGN SIZES*

SIGN	NON-FREEWAY	FREEWAY
G20-2	36x18	48x24
W3-4	36x36	48x48
W20-1	36x36	48x48
W20-4	36x36	48x48
W20-7	36x36	48x48
WARNING FLAG	18x18	18x18

*FREEWAY SIZES MAY BE USED ON NON-FREEWAY, IF SPACE CONSTRAINTS DO NOT EXIST.

TABLE 307-04: PROTECTIVE VEHICLE REQUIREMENTS

CLOSURE TYPE	ROAD TYPE & SPEED:	NON-FREEWAY ≥ 45 MPH	NON-FREEWAY 35 - 40 MPH	NON-FREEWAY ≤ 30 MPH
	EXPOSURE CONDITIONS[1]			
LANE CLOSURE OR ENCROACHMENT	WORKERS ON FOOT OR VEHICLE EXPOSED TO TRAFFIC	P, TMA	P, TMA	P
	OTHER HAZARDS NO WORKERS EXPOSED	P, TMA	P	SEE NOTE 2
SHOULDER CLOSURE OR ENCROACHMENT	WORKERS ON FOOT OR VEHICLE EXPOSED TO TRAFFIC	P, TMA	P	P
	OTHER HAZARDS NO WORKERS EXPOSED	P, TMA	P	SEE NOTE 2

LEGEND

P: PROTECTIVE VEHICLE REQUIRED FOR EACH CLOSED LANE & EACH CLOSED PAVED SHOULDER 8' OR WIDER, IF THE WORK SPACE MOVES WITHIN THE STATIONARY CLOSURE, THE PROTECTIVE VEHICLE SHALL BE REPOSITIONED ACCORDINGLY

TMA: TMA REQUIRED

NOTES:
1. THE EXPOSURE CONDITIONS ASSUMES THERE IS NO POSITIVE PROTECTION PRESENT
2. EITHER A PROTECTIVE VEHICLE OR THE STANDARD BUFFER SPACE SHALL BE PROVIDED

TABLE 307-05: ROLL AHEAD DISTANCE

ROLL AHEAD DISTANCE (FT.)/# OF SKIP LINES FOR VEHICLES		
PRECONSTRUCTION POSTED SPEED LIMIT (MPH)	STATIONARY OPERATION MIN	MAX
≥ 55	125/3	200/5
45 - 50	80/2	160/4
≤ 40	40/1	120/3

NEW YORK STATE OF OPPORTUNITY. **Department of Transportation**

U.S. CUSTOMARY STANDARD SHEET

WORK ZONE TRAFFIC CONTROL TWO-LANE TWO-WAY ROADWAY LANE CLOSURE WITH FLAGGERS SHORT TERM OPERATION (SHEET 2 OF 2)

APPROVED DECEMBER 2, 2021 — Robert Limoges, ROBERT LIMOGES, P.E., DIRECTOR, OTSM

ISSUED UNDER EI 21-028 — 619-307

Designed By:	ARH
Drawn By:	ARH
Checked By:	JCM
Cad File:	M-2405

NOTE: UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING IS A VIOLATION OF SECTION 7209, PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW

REVISION	BY/CK	DATE

METZGER CIVIL ENGINEERING, PLLC
8245 SHERIDAN DR.
WILLIAMSVILLE, NY 14221
PH: 716-633-2601
FAX: 716-633-2704
CIVIL ENGINEERING
LAND PLANNING
SITE DESIGN
MUNICIPAL ENGINEERING

STATE OF NEW YORK — MICHAEL R. METZGER — 066788 — LICENSED PROFESSIONAL ENGINEER

OXBO

TOWN OF BERGEN, GENESEE COUNTY, NEW YORK

DETAILS – NYSDOT

SCALE:	AS NOTED
DATE:	May 20, 2024
JOB NO:	M-2405
SHEET NO:	DT-9

May 30, 2024

Mr. Gary Fink, Chairman
And Planning Board Members
Town of Bergen
10 Hunter Street
Bergen, New York 14416

RE: OXBO MANUFACTURING FACILITY PROJECT
7015 SOUTH LAKE RD SITE PLAN APPLICATION REVIEW
MRB PROJECT NO. 0202.18000.000-008

Dear Mr. Fink and Planning Board Members:

As requested, MRB Group has completed a cursory review of the submitted Site Plan Application and associated application material received by MRB on May 23, 2024. We offer the following comments for the Planning Boards consideration. A brief written response to each comment should be provided by the design engineer.

SEQR COMMENTS

1. Per 6 CRR-NY 617.4 b.6. (i)& (v) this project is considered a type 1 action under SEQR and is subject to a coordinated review by the Town of Bergen. A Full Environmental Assessment Form (FEAF) Part 1 was provided for the Planning Board to review.
2. The following comments are in regard to the FEAF Part 1:
    a. It is recommended that the applicant coordinate with SHPO regarding the proposed project.
    b. It was noted in the environmental review dated April 2024 that the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) identified four species as potentially occurring within the Project site. Question E.2.o should be updated to "yes." All coordination with the USFW regarding the impacts to these species, in particular the Tricolored bat, should be forwarded to the Town for review and consideration.

SITE PLAN AND GENERAL COMMENTS

3. Per Town Code §475-34 Interchange Industrial District (INT-I) B. (1) Light manufacturing is permitted upon issuance of a special use permit. The applicant should submit a special use permit application to the Planning Board for their review and consideration.
4. Per §475-42 Submission of site plan and supporting data, the following information will need to be provided for review by the Planning Board.
    a. Interior traffic circulation throughout the site, including emergency vehicles.

b. Landscaping Plans, including landscaped areas, buffer zone, vegetative screening, and landscaping details.

c. A sequence of construction should be added to the plans. A note should be added to the sequence of construction stating that all sediment and erosion control measures should be in place before any construction can start.

d. Description of proposed uses, hours of operation, and expected number of employees, volume of business, and volume of traffic generated.

5. Signature lines for the Town of Bergen Planning Board Chair, Town Engineer and the Genesee County Health Department should be added to the plans.
6. It should be noted that the project will need review and approvals from the NYSDOT regarding all work within the right-of-way, the Genesee County Health Department, and the MCWA prior to final approval.
7. If and/or when the Zoning Board of Appeals grants an area variance for height, a note should be added to the plans.
8. Per Town Code §475-42 – Off Street parking spaces, both required and proposed should be shown on the site data on the plans.
9. The plans should demonstrate compliance with Town Code §475-54 Signs.
10. It is recommended that a Lighting Plan, including a photometric study, be included as the submittal. Exterior lighting should be identified on the drawings. All proposed Wall packs and pole lights should be dark sky compliant.
11. A utility plan should be submitted as part of the Site Plan.
12. Bulk storage of fuel should be included on the plans.
13. Soil stockpiles, laydown yard, and the location of dumpsters for construction debris should be identified on the plans.
14. A note regarding the use of pesticides during construction should be added to the plans and included in the sequence of construction.
15. Dimensions should be included for the proposed structure and the proposed length of the utilities.
16. The limits of disturbance should be clearly shown on the plans.
17. Copies of all supporting correspondence from other agencies (e.g. local/state/federal) should be provided to the Town Planning Board and MRB Group for review.
18. The Town Fire Marshall and Code Enforcement Officer should review the emergency access to ensure it is adequate and meets NYS Building Code requirements. The marking of fire lanes and the installation of no parking signs should be identified on the plans.

19. It should be reviewed if the structure will be required to have a sprinkler system for fire protection. It is not specified on the plans that there is a fire suppression system being proposed.
20. The Planning Board may want to require as a condition of site plan approval that the owner file a performance bond or letter of credit at the discretion of the Planning Board, in such amount as the Planning Board determines and as approved by the Town Board, to be in the public interest, to ensure that proposed development will be built in compliance with accepted plans.
21. A technical review of the site plan and associated documents is forthcoming under separate cover.
22. Comments regarding the Traffic Impact Study dated May 17, 2024, prepared by CPL Architecture, Engineering and Planning and the Geotechnical Evaluation dated March 5, 2024, prepared by Foundation Design P.C. are forthcoming under separate cover.
23. Comments regarding the SWPPP dated May 20, 2024, prepared by Metzger Civil Engineering, PLLC and the Wetlands Report dated April 2024 prepared by CC Environment and Planning are forthcoming under separate cover.

Please feel free to contact our office with any comments or questions you may have in this regard. Thank you.

Respectfully submitted,

Matthew Sousa
Senior Planning Associate

Copies by Email Only to:
Supervisor Ernie Haywood
Michael Johnson, Highway Superintendent
Teresa Robinson, Town Clerk

June 21, 2024

Mr. Gary Fink, Chairman
And Planning Board Members
Town of Bergen
10 Hunter Street
Bergen, New York 14416

RE: OXBO MANUFACTURING FACILITY PROJECT
7015 SOUTH LAKE RD
SITE PLAN APPLICATION REVIEW
MRB PROJECT NO. 0202.18000.000-008

Dear Mr. Fink and Planning Board Members:

As requested, MRB Group has completed a review of the submitted Site Plan Application and associated application material received by MRB on May 23, 2024. We offer the following comments for the Planning Boards consideration. A brief written response to each comment should be provided by the design engineer.

PREVIOUS COMMENTS

The following comments were included in the MRB letter dated May 30, 2024. To date, no response has been received from the applicant.

1. Per §475-42 Submission of site plan and supporting data, the following information will need to be provided for review by the Planning Board.
    a. Interior traffic circulation throughout the site, including emergency vehicles.
    b. Landscaping Plans, including landscaped areas, buffer zone, vegetative screening, and landscaping details.
    c. A sequence of construction should be added to the plans. A note should be added to the sequence of construction stating that all sediment and erosion control measures should be in place before any construction can start.
    d. Description of proposed uses, hours of operation, and expected number of employees, volume of business, and volume of traffic generated.
2. Signature lines for the Town of Bergen Planning Board Chair, Town Engineer and the Genesee County Health Department should be added to the plans.
3. It should be noted that the project will need review and approvals from the NYSDOT regarding all work within the right-of-way, the Genesee County Health Department, and the MCWA prior to final approval.
4. If and/or when the Zoning Board of Appeals grants an area variance for height, a note should be added to the plans.

5. Per Town Code §475-42 – Off Street parking spaces, both required and proposed should be shown on the site data on the plans.
6. The plans should demonstrate compliance with Town Code §475-54 Signs.
7. It is recommended that a Lighting Plan, including a photometric study, be included as the submittal. Exterior lighting should be identified on the drawings. All proposed Wall packs and pole lights should be dark sky compliant. Spec sheets for all lighting should be provided to the Town for review.
8. A utility plan should be submitted as part of the Site Plan.
9. Bulk storage of fuel should be included on the plans.
10. Soil stockpiles, laydown yard, and the location of dumpsters for construction debris should be identified on the plans.
11. A note regarding the use of pesticides during construction should be added to the plans and included in the sequence of construction.
12. Dimensions should be included for the proposed structure and the proposed length of the utilities.
13. The limits of disturbance should be clearly shown on the plans.
14. Copies of all supporting correspondence from other agencies (e.g. local/state/federal) should be provided to the Town Planning Board and MRB Group for review.
15. The Town Fire Marshall and Code Enforcement Officer should review the emergency access to ensure it is adequate and meets NYS Building Code requirements. The marking of fire lanes and the installation of no parking signs should be identified on the plans.
16. The applicant should verify if the structure will be required to have a sprinkler system for fire protection. It is unclear if any fire suppression system is being proposed.
17. The Planning Board may want to require as a condition of site plan approval that the owner file a performance bond or letter of credit at the discretion of the Planning Board, in such amount as the Planning Board determines and as approved by the Town Board, to be in the public interest, to ensure that proposed development will be built in compliance with accepted plans.

ADDITIONAL COMMENTS

18. Fire hydrants should be labeled on the plans.
19. Where applicable, the applicant should add the standard Town details found in Town Code Chapter 379.
20. Bulk fuel storage may be considered to be a stormwater hotspot type use as per section 4.11 of the NYS SWMDM. Any portions of the site associated with a hotspot use are generally not permissible to be treated with infiltration type practices such as infiltration chambers or infiltration bioretention areas and

would require coordination with NYSDEC to determine the treatment requirements for runoff prior to infiltrating.

21. When available, the applicant shall provide a copy of the engineer report for the sanitary lift pump. The plans are to be updated with all details as applicable.

22. Site distances should be added to the proposed driveway.

TRAFFIC IMPACT STUDY COMMENTS

The following comments are regarding the Traffic Impact Study dated May 17, 2024, prepared by CPL Architecture, Engineering and Planning and the Geotechnical Evaluation dated March 5, 2024, prepared by Foundation Design P.C.

23. The applicant should coordinate with the Gensee County Highway Department to solicit feedback regarding the traffic impact study. All correspondence shall be forwarded to the Town.

24. Although not explicitly recommended by the Traffic Impact Study, the Town may want to consult with the Gensee County Highway Department to determine if a left turn lane into the facility is warranted.

SWPPP AND DRAINAGE COMMENTS

The following comments are regarding the SWPPP dated May 20, 2024, prepared by Metzger Civil Engineering, PLLC and the Wetlands Report dated April 2024 prepared by CC Environment and Planning.

25. The Grading, Drainage, and Erosion and Sediment Control Plans (Sheet GD-1, -2) should show the proposed location of the soil stockpiles (with perimeter control such as silt fence). Additionally, a detail should be provided.

26. It is recommended that the phasing plan included in the SWPPP be added to the Plans.

27. It is recommended that summary tables of Stormwater Quantities and dry detention/bio-retention ponds be included in the first section of the SWPPP (including a summary of pre- and post- peak flow values at the different design storms, the reduction values provided by the dry detention areas, and the design information provided on Detail Sheet DT-1 included in the Plans).

28. A final submitted NOI with all signatures will be required in the final version of the SWPPP provided on site during construction.

29. A signed 5-acre waiver is required to be provided in the final version of the SWPPP and prior to final approval.

30. Signed Contractor Certification Statements are required to be provided in the final version of the SWPPP and prior to final approval.

31. The Pre-Development maps provided in the SWPPP should show existing contours more clearly.

32. The Post-Development maps provided in the SWPPP should show contour lines and more details on land coverage, and should be provided at scale to appear more like those maps provided for Pre-Development.
33. It appears that the value for "% of site" included in the Pond B TR-55 Pre-Development Summary (page 145 of 204 of the PDF) and Post-Development Summary (Page 146 of 204 of the PDF) for "this pond" is listed as 104.5%; please verify whether this value is intentional or make corrections as necessary.
34. It is recommended that drainage maps be provided for the flow splitter diversion structures 1, 2, 3, and 4 in Appendix D-7 of the SWPPP so that Tc can be verified.
35. It is recommended that a stormwater treatment binding maintenance agreement be provided in the SWPPP and filled out prior to final approval.
36. Erosion control details should be provided in the SWPPP.
37. Outlet Structures A & B Detail on the Plans (Sheet DT-1) – remove label "Inv = 571.58" from the detail as it appears this is not relevant to this drawing.
38. Is any excavation/earth work being performed on the test track? If so, silt fence should be added at this section of the site to prevent sediment from leaving the site at this location.

Please feel free to contact our office with any comments or questions you may have in this regard. Thank you.

Respectfully submitted,

Matthew Sousa
Senior Planning Associate

Copies by Email Only to:
Supervisor Ernie Haywood
Kim Donley – Planning Board Secretary
Gerald Wood – Code Enforcement Officer
Joel Pocock-Highway Superintendent

Apple Tree Acres
Genesee County, New York

Environmental Review

PREPARED FOR:

CPL
255 Woodcliff Dr, Suite 200
Fairport, NY 14450

BY:

CC Environment & Planning
23 Jackson Street
Batavia, NY 14020

April 2024

Table of Contents

List of Figures

Appendices

1.0 Introduction

CPL Engineering, on behalf of Genesee County Economic Development Center, has retained the service CC Environment & Planning to complete an Environmental Review. The purpose of the report is to provide wetland and stream delineation, ecological communities identification, and listed species review for a potential development site in the Town of Bergen, New York.

1.1 Project Description and Need

The project involves the continued development of the Apple Tree Acres Business Park in the Town of Bergen, New York (the "Site"). The current project area encompasses approximately 53 acres of mostly agricultural land. Development would include the construction of facilities with associated driveways, loading docks, stormwater retention facilities, utilities, and landscaping. This environmental review provides information to support the design, permitting, and development of the proposed project.

1.2 Project Location

The Site includes approximately 53 acres located along NYS Route 19 in the Town of Bergen, Genesee County, New York (central Lat/Long: 43.069153, -77.948271; Figure 1). It encompasses tax parcels 13.-1-63.1, 13.-1-61.12, and 13.-1-58.22. The Village of Bergen is approximately 0.2 miles to the north.

2.0 Existing Conditions Summary

Appendix A provides a detailed wetland delineation report for the Site, including data on soils, wetlands, and ecological communities. Refer to Appendix A for aerial photos, data point photos, delineation datasheets, and maps showing topography, soils, state and federal wetland mapping, and delineation data.

The site is mostly flat with a slight slope on the eastern portion. It is an active agricultural field, last planted with corn. Upland areas within the Site are cropland/row crop and unpaved road/path. Aquatic habitats found within the Site are shallow emergent marshes. Ecological community types are designated in accordance with community descriptions in Edinger et al. 2014 *Ecological Communities of New York State* (https://www.dec.ny.gov/docs/wildlife_pdf/ecocomm2014.pdf).

3.0 Threatened and Endangered Species

An agency database review via online consultation tools was conducted on April 5, 2024, to determine whether state- or federally listed threatened or endangered species may be present within the Site. Reviews of NYSDEC's Environmental Resource Mapper and Environmental Assessment Form (EAF) Mapper show no state-listed species within the Site.

Review of U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) identified four species as potentially occurring within the Project site (Appendix B). Northern long-eared bat (NLEB; *Myotis septentrionalis*) is a federally listed endangered species. USFWS has indicated that there are no known NLEB maternity roost trees within 1.5 miles or winter hibernacula within 5 miles of the Site

(i.e., no on-site occupied habitat or designated critical habitat present, https://www.fws.gov/office/new-york-ecological-services-field/species). It does not appear on the NYSDEC Environmental Resource Mapper, thus NYSDEC indicates that no known occurrences of the species are within the vicinity of the Site. (Appendix B). The IPaC NLEB Rangewide Determination Key was completed to assess potential impacts to this species. A determination of "No Effect" was reached. No further consultation is necessary.

Tricolored bat (*Perimyotis subflavus*) is a federally proposed endangered species. A formal listing decision is expected later in 2024. The Project does not involve the cutting of trees nor the alteration of culverts or bridges, thus no impacts to the species are expected. Impacts to this species will be formally evaluated once a listing decision has been announced and the determination key is available for use.

Eastern Massasauga (*Sistrurus catenatus*) is a rattlesnake that inhabits wetland areas. It is known to exist within the nearby Bergen Swamp, located approximately six miles to the northwest of the Project Site. Although three small wetlands are present within the Project Site, they are too small for use by this species, thus no impacts to the species are expected.

The fourth species listed on the USFWS IPaC Official Species List is the monarch butterfly (*Danaus plexippus*). This is a candidate species for federal listing and currently is not listed, thus impacts to the species do not need to be formally evaluated. It is recommended that conservation of the species be considered whenever possible, including the incorporation of milkweed and other native flowering plants into landscape plantings.

Figures

Location Map

Apple Tree Acres
Town of Bergen,
Genesee County, New York
J. Lynch, Date: 4/8/2024

Area of Investigation

Figure 1

Appendix A

Wetland and Stream Delineation Report

Apple Tree Acres
Wetland Delineation Report

PREPARED FOR:

CPL

255 Woodcliff Drive
Suite 200
Fairport, NY 14450

BY:

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April 2024

Table of Contents

List of Tables

List of Figures

Appendices

Executive Summary

CPL Engineering, on behalf of Genesee County Economic Development, has retained the services of CC Environment & Planning to complete a wetland delineation on a portion of the Apple Tree Acres Business Park (Parcels: 13.-1-63.1, 13.-1-61.12, and 13.-1-58.22) located in the Town of Bergen, Genesee County, New York (central Lat/Long: 43.067949, -77.947707). The delineation was conducted within an approximately 52.21-acre Area of Investigation (AOI, Figure 1) in accordance with the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual Tech Report Y-87-1, and the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (v. 2.0), dated January 2012. Results of this delineation will allow the USACE and New York State Department of Environmental Conservation (NYSDEC) to determine the jurisdictional authority of the investigation area, pursuant to §404 of the Clean Water Act (CWA) and Article 24 (Freshwater Wetlands) of the New York State Environmental Conservation Law.

CC Environment & Planning conducted the delineation on March 5, 2024. A review of existing information on soils, topography, vegetation, and hydrology in the project area was conducted prior to field delineation and illustrated in Figures 1 – 4. Sources of information included the United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS) Web Soil Survey, United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) map, and NYSDEC Environmental Resource Mapper. The site is a large agricultural field that was previously utilized for cultivating various row crops planted in corn this past year. No federally or state-mapped wetlands are present within the AOI, although wetlands are mapped adjacent to the AOI. As a result of the on-site field investigation, CC Environment & Planning identified two wetlands within the Site.

Delineated Wetlands						
Identifier	**Latitude**	**Longitude**	**Area in AOI**	**Cowardin Class**	**Connectivity Landscape**	**Data Point # / Photo #**
Wetland B	43.067368	-77.948544	0.275	Emergent	Drains to the south into a forested wetland on the neighboring parcel.	DP 1/ 1-5, 17
Wetland F	43.066987	-77.951313	0.087	Emergent	Wetland continues to the south on neighboring parcel.	DP 3/11-16

1.0 Introduction

CPL, on behalf of Genesee County Economic Development Center, has retained the services of CC Environment & Planning to complete a wetland delineation on a a portion of the Apple Tree Acres Business Park (Parcels: 13.-1-63.1, 13.-1-61.12, and 13.-1-58.22) located in the Town of Bergen, Genesee County, New York (central Lat/Long: 43.067949, -77.947707; Figure 1). The area of investigation (AOI) comprises approximately 52.21 acres and is located in the U.S. Geological Survey (USGS) 7.5-minute quadrangle indexed as Churchville (2023). The AOI encompasses a large agricultural field and unpaved roadway.

The purpose of the investigation was to determine the location and extent of any potential waters of the United States (WOUS) and state-regulated waters, including wetlands and streams. The results of the delineation will allow the USACE and NYSDEC to determine jurisdictional authority pursuant to §404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act and Article 24 (Freshwater Wetlands) of the New York State Environmental Conservation Law. Article 24 protects New York's freshwater wetlands that are greater than 12.4 acres or any size wetland that possesses unique qualities along with a 100-foot adjacent area.

CC Environment & Planning has performed a delineation study at the Site under guidelines specified by the *Corps of Engineers Wetlands Delineation Manual* (1987, hereafter referred to as the Corps Manual) and *Regional Supplement to Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (2012, hereafter referred to as the Regional Supplement) with reference to the NYSDEC Freshwater Wetlands Delineation Manual.

This report provides a summary of delineation methods, results, and conclusions with respect to wetlands and streams at the Site.

2.0 Summary of Preliminary Data Review

A review of existing information on soils, topography, vegetation, and hydrology in the project area was conducted prior to field delineation and illustrated in Figures 1 – 4. Sources of information included the USDA NRCS Web Soil Survey, USFWS National Wetland Inventory (NWI) map, and NYSDEC Environmental Resource Mapper.

2.1 Watershed

The Site is located in the Black Creek watershed (HUC: 0413000306), which is part of the Lower Genesee subbasin (HUC: 04130003). This subbasin is part of the larger Southwestern Lake Ontario subregion.

2.2 USGS Quadrangle Map

The USGS has produced topographic maps for every county of the United States. These maps are useful in aquatic resource delineations for the purpose of identifying areas of interest within a parcel. In addition to civil works and boundaries, indicators of marshes, swamps, perennial and intermittent streams, and contours are depicted. The investigation area is relatively flat, with a high point of 690 feet above mean sea level located within the southeast corner, where part of a drumlin lies (Figure 2). The land gently

slopes away from that high point to a low point of 557 feet in the northeast corner. The AOI is located in the USGS 7.5-minute quadrangle indexed as Churchville (2023).

2.3 USDA Soils Map

The United States Department of Agriculture Natural Resources Conservation Service soils map shows the soil types present within the Site (Table 1, Figure 3, Appendix A).

Table 1 – USDA Soil Site Composition

Description	Soil Codes	Acres	Percent of Site	Hydric Rating
Appleton silt loam, 0 to 3 percent slopes	Apa	7.1	13.3	4
Lima silt loam, 0 to 3 percent slopes	LmA	1.1	2.1	1
Lima silt loam, 3 to 8 percent slopes	LmB	38.6	72.7	1
Lyons soils, 0 to 3 percent slopes	LoA	3.2	6.0	95
Ontario loam, 8 to 15 percent slopes	OnC	2.2	4.1	0
Palmyra gravelly loam, 8 to 15 percent slopes	PhC	0.9	1.7	0

Poorly drained soils with a high hydric rating are typically hydric soils that support wetland plant communities; however, regulated wetlands can and do occur outside of mapped hydric soil groups, as the scale of the USDA NRCS soil survey is large enough that inclusions of hydric soil within larger soil groups often remain unmapped. The majority of the soils mapped at the Site are well drained and considered non-hydric, but a small portion of the Site is mapped as hydric soils, particularly in the Lyons soils class.

2.4 Federal and State Wetland Maps

The U.S. Fish and Wildlife Service's National Wetland Inventory map shows no federally mapped wetlands or streams within the AOI boundary (Figure 4), although wetlands are present east and south of the AOI. No state-mapped wetlands or streams lie within the AOI according to the NYS Environmental Resource Mapper, although there is state-mapped wetland to the east.

The presence of federally and state mapped wetlands near the Site supports the need for a field investigation to determine if any wetlands or streams are present and their boundaries.

2.5 Historical Photos

Historical images available on Google Earth were reviewed prior to any site visit to determine the location of potential wetland areas based on drainage patterns and land use. These photos are available in Appendix B.

3.0 Delineation Methods

Methods listed in the Corps Manual and Regional Supplement with reference to the NYSDEC Freshwater Wetlands Delineation Manual were used to conduct this delineation and are summarized below. Prior to

initiating sampling, a site walk-over was performed to identify the general site topography, drainage patterns, dominant plant communities, and evidence of disturbance.

A field visit to the Site determined that normal environmental conditions were present (Appendix C). The Regional Supplement defines the growing season as beginning when one of the following indicators of biological activity are evident in a given year: (1) above-ground growth and development of vascular plants and/or (2) soil temperature measured at 12" below ground surface reaches 41ºF. The end of the growing season is defined as the point at which deciduous species lose their leaves or the last herbaceous plants cease flowering and their leaves become dry or brown, whichever comes latest. Based on this definition, the fieldwork was performed outside of the growing season.

3.1 Hydrophytic Vegetation

Hydrophytic vegetation was assessed by visually estimating cover of plant species in each stratum in each vegetation unit as a whole. Vegetation was assessed separately for trees, woody vines, shrubs, and herbs. As outlined in the Corps Manual, a tree is considered any woody plant of any height with a diameter at breast height (DBH) greater than 3 inches, a shrub is any woody plant greater than 3.28 feet tall with a DBH of less than 3 inches, a woody vine is any woody vine greater than 3.28 feet tall, and an herb is any herbaceous plant regardless of size and any woody plant less than 3.28 feet tall and with a DBH of less than 3 inches.

Each identified plant species was assigned a wetland indicator status according to the USACE *2020 Wetland Plant List*. Plant data from each observation point were then tested according to the procedures outlined in the Corps Manual and Regional Supplement. Wetland indicator statuses are as follows:

> OBL – Plants that occur almost always (estimated probability >99 percent) in wetlands under natural conditions, but which may also occur rarely (estimated probability < 1 percent) in non-wetlands.
>
> FACW – Plants that occur usually (estimated probability >67 percent to 99 percent) in wetlands, but also occur (estimated probability 1 percent to 33 percent) in non-wetlands.
>
> FAC – Plants with a similar likelihood (estimated probability 33 percent to 67 percent) of occurring in both wetlands and non-wetlands.
>
> FACU – Plants that occur sometimes (estimated probability 1 percent to <33 percent) in wetlands but occur more often (estimated probability >67 percent to 99 percent) in non-wetlands.
>
> UPL – Plants that occur rarely (estimated probability < 1 percent) in wetlands but occur almost always (estimated probability >99 percent) in non-wetlands under natural conditions.

3.2 Hydric Soils

Soil samples were taken with a sharpshooter shovel down to the depth necessary to identify hydric soil indicators. Samples were then assessed for hydric soil indicators as outlined in the Regional Supplement.

3.3 Wetland Hydrology

Wetland hydrology was assessed at each point according to the wetland hydrology indicators listed in the Regional Supplement. Indicators listed in the Regional Supplement are either primary or secondary; a single primary indicator or two secondary indicators were sufficient to prove wetland hydrology. If surface water was not present, a hole was dug to assess the water table and soil saturation depth.

3.4 Wetland Determination

If a point met wetland vegetation, soils, and hydrology conditions, it was considered to be within a wetland.

3.5 Wetland Delineation

Wetland and stream boundaries within the site were established based on the results at each sample point. Neon pink flagging was used to mark the wetland boundary, and a Juniper Systems Geode GPS, which is rated as sub-meter accuracy, was used to create an electronic record of wetland boundaries and high-water marks of streams/drainages.

4.0 Delineation Results and Conclusions

Two wetland data points and two upland data points were sampled and recorded on March 5, 2024, to support the location of the wetland/upland boundaries. Photos were taken and are provided in Appendix C. A digital copy of the datasheets can be found in Appendix D. Based on the results of field investigation, two wetlands were identified within the AOI.

4.1 Ecological Communities

During field investigations, ecological communities were identified within the investigation area. Ecological community types are based on Edinger et al. (2014). Upland areas at the Site were predominantly cropland/row crop and unpaved road/path. Aquatic areas consist of shallow emergent marshes.

4.2 Delineated Wetlands

Two wetlands were mapped at the Site (Table 2, Figure 5). These wetlands had been mapped during a previous delineation conducted in September 2014. Both wetlands are shallow emergent marshes. Emergent areas are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years and is usually dominated by perennial plants.

Table 2 provides details associated with the wetlands including connectivity, area, and the associated figure and photo numbers. Copies of the datasheets and recorded plant species are in Appendix C.

Table 2 - Delineated Wetlands						
Identifier	**Latitude**	**Longitude**	**Area in AOI**	**Cowardin Class**	**Connectivity Landscape**	**Data Point # / Photo #**
Wetland B	43.067368	-77.948544	0.275	Emergent	Drains to the south into a forested wetland on the neighboring parcel.	DP 1/ 1-5, 17
Wetland F	43.066987	-77.951313	0.087	Emergent	Wetland continues to the south on neighboring parcel.	DP 3/11-16

Wetland B is a narrow, linear palustrine emergent marsh located at the bottom of a slope within the southern portion of the agricultural field, partially within the powerline right-of-way (Figure 5, Photos 1 – 5 and 17, and Datasheet 1). The wetland appears to drain to the south, where the wetland converts to a forested wetland on the neighboring property. Due to the timing of the recent field investigation, most vegetation was dormant, although swamp goldenrod (*Solidago gigantea*), wild teasel (*Dipsacus fullonum*), swallowwort (*Vincetoxicum sp.*), and red osier dogwood (*Cornus sericea*) could be identified. During the 2014 investigation, additional species were noted including: blue vervain (*Verbena hastata*), boneset (*Eupatorium perfoliatum*), ragweed (*Ambrosia artemesifolia*), common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), red clover (Trifolium pretense), straw colored flatsedge (*Cyperus strigosus*), water horehound (*Lycopus americanus*), white snakeroot (*Ageratina altissima*), and witchgrass (*Panicum capillare*). Hydrological indicators noted at this site were surface water and FAC-neutral test. The hydric soil indicators were redox dark surface (F6) and redox depressions (F8). One upland data point was used for comparison purposes and to locate the wetland edge (Datasheet 2). This datapoint failed to meet the hydric soil indicator.

Wetland F is a small palustrine emergent marsh located on the southside of the agricultural field (Figure 5, Photos 11-16, and Datasheet 3). It is the northern tip of a larger wetland that is predominately on the neighboring property. Plant species identified during recent field investigations included common rush (*Juncus effusus*), creeping buttercup (*Ranunculus repens*), switch grass (*Panicum virgatum*), and green ash (*Fraxinus pennsylvanica*) seedlings. Species noted during the 2014 investigation included cattail (*Typha sp.*), common reed, eastern cottonwood (*Populus deltoides*), lamb's quarters (*Chenopodium album*), purple loosestrife, and straw colored flatsedge. Hydrological indicators noted at this site were water-surface water and FAC-neutral test. The hydric soil indicators were redox dark surface (F6) and redox depressions (F8). One upland data point was used for comparison purposes and to locate the wetland edge (Datasheet 4). This datapoint failed to meet hydrology and soil indicators.

The delineated wetlands likely provide many ecological services, including flood attenuation, wildlife habitat, as well as sediment and nutrient removal. Federally or state listed threatened or endangered species were not observed during the field investigation however a formal survey was not conducted.

5.0 Recommendations

Based on the results of the field delineation, two wetlands were mapped in the investigation area. Both wetlands extend onto the neighboring property, which contains a state and federally-mapped wetland. Although these wetlands do not connect to the portion of the forest currently mapped, there may be unmapped wetlands on the neighboring property that do connect the two. If that is the case, these wetlands may have state and federal jurisdiction. A jurisdictional determination (JD) by both state and federal agencies is required to confirm the jurisdiction of all aquatic habitats.

Recommended next steps include:

1. Submission of this report and delineation map to regulatory agencies to request a JD. This typically involves a site visit and wetland boundary confirmation/refinement. A preliminary JD from USACE is generally sufficient if all delineated wetlands are avoided or none are potentially non-jurisdictional. An approved JD is required if potential impacts include wetlands that are potentially non-jurisdictional.

2. If impacts are proposed to any jurisdictional wetlands, a permit is required. A Joint Permit Application and supporting information should be submitted to both USACE and NYSDEC. For USACE permits, if proposed impacts are reduced to less than 0.50 acres or 300 linear feet the project may qualify under a USACE Nationwide Permit. Projects under 0.10 acres generally do not require mitigation. No permit is necessary for proposed impacts to non-jurisdictional wetlands as identified by an approved JD. Impacts to NYSDEC-regulated wetlands include a 100-foot adjacent area that is also regulated. A Joint Permit Application and this delineation report may be submitted concurrently. It is recommended that direct, permanent impacts to all wetlands and streams are avoided to the maximum extent practicable.

3. If no impacts to wetlands or streams or state regulated adjacent areas are proposed, no wetland permits are required. In this case, a “No Permit Required” letter may be requested from USACE and NYSDEC. Note that other federal, state, or local regulations may be applicable at the site.

6.0 References

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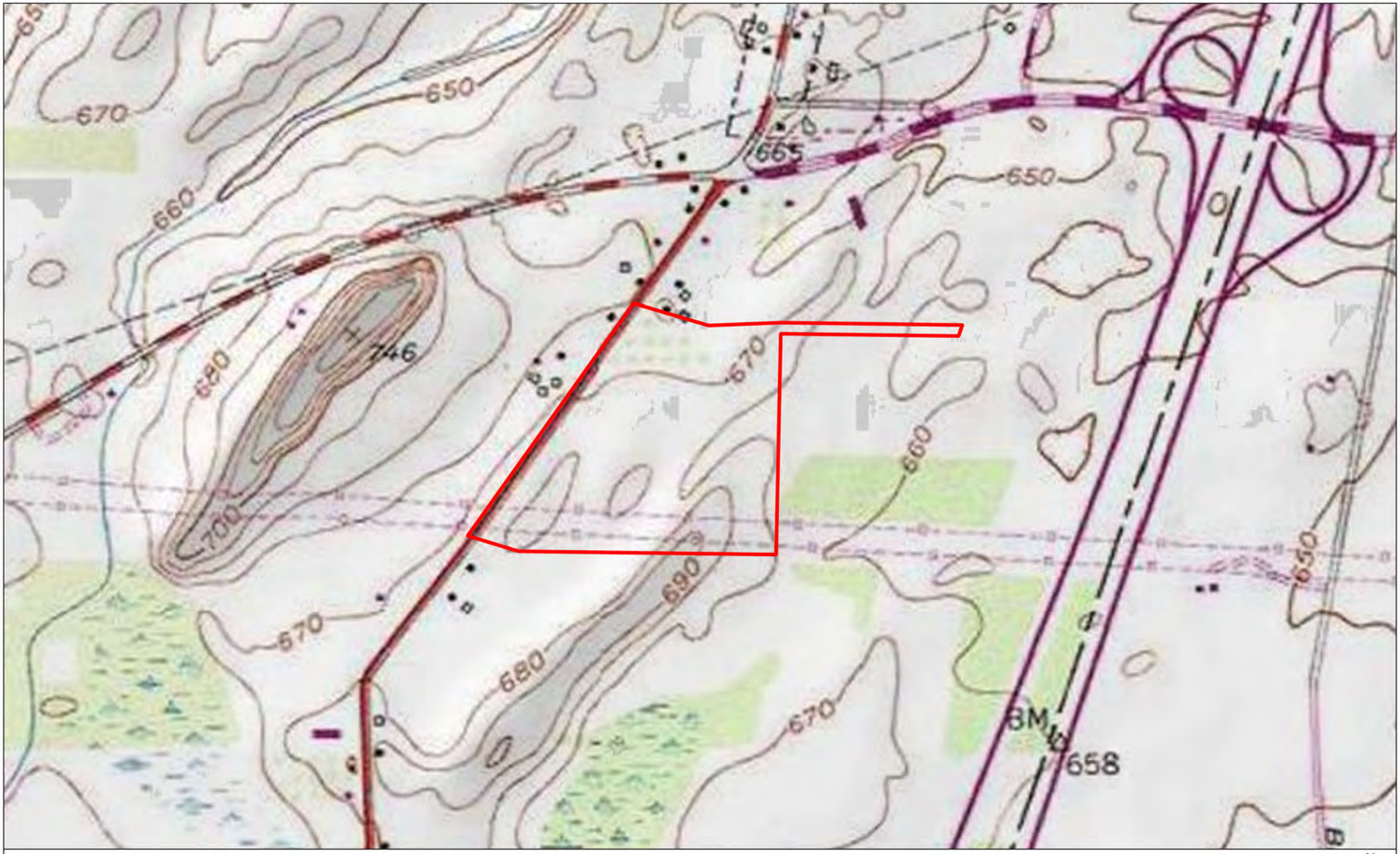
Figures

Location Map

Apple Tree Acres
Town of Bergen,
Genesee County, New York
J. Lynch, Date: 4/8/2024

Area of Investigation

Figure 1



Topographic Map

Apple Tree Acres
Town of Bergen,
Genesee County, New York
J. Lynch, Date: 4/8/2024

Area of Investigation

Figure 2

USDA NRCS Soils Map

Apple Tree Acres
Town of Bergen,
Genesee County, New York
J. Lynch, Date: 4/8/2024

CC Environment & Planning

Datapoints
Area of Investigation
Wetland/Stream

Hydric Rating
0
1
4
95

Figure 3

0 0.05 0.1 0.2 Miles

N

State and Federally Mapped Hydrological Features

Apple Tree Acres
Town of Bergen,
Genesee County, New York
J. Lynch, Date: 4/8/2024

CC Environment & Planning

Area of Investigation
Wetland/Stream
NYSDEC Wetlands

NWI Wetlands
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Freshwater Pond
Riverine

Figure 4

0 0.02 0.04 0.07 Miles

N

Field Mapped Wetland and Stream

Apple Tree Acres
Town of Bergen,
Genesee County, New York
J. Lynch, Date: 4/8/2024

CC Environment & Planning

- Waypoints
- Datapoints
- Spot Check
- Area of Investigation
- Wetland/Stream
- NYSDEC Wetlands

NWI Wetlands

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

Figure 5

Appendix A – USDA NRCS Soils Map

Custom Soil Resource Report
Soil Map

Map Scale: 1:5,260 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Genesee County, New York
Survey Area Data: Version 24, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 15, 2023—May 28, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ApA	Appleton silt loam, 0 to 3 percent slopes	7.1	13.3%
LmA	Lima silt loam, 0 to 3 percent slopes	1.1	2.1%
LmB	Lima silt loam, 3 to 8 percent slopes	38.6	72.7%
LoA	Lyons soils, 0 to 3 percent slopes	3.2	6.0%
OnC	Ontario loam, 8 to 15 percent slopes	2.2	4.1%
PhC	Palmyra gravelly loam, 8 to 15 percent slopes	0.9	1.7%
Totals for Area of Interest		**53.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it

Appendix B – Historical Aerial Imagery


Apple Tree Acres
Historical Aerial Imagery
April 1995
Legend
Area of Investigation
Google Earth
Image U.S. Geological Survey
N
1000 ft


Apple Tree Acres
Historical Aerial Imagery
June 2006
Legend
Area of Investigation
Google Earth
Image USDA/FPAC/GEO
N
1000 ft

Apple Tree Acres

Historical Aerial Imagery
April 2016

Apple Tree Acres

Historical Aerial Imagery
May 2023

Appendix C – Photo Report

Apple Tree Acres

Wetland Delineation - March 5, 2024

Photo 1

DP1, Wetland B, facing north. Edge of cornfield.

Photo 2

DP1. Wetland B, facing east. Edge of hillside.

Photo 3

DP1, Wetland B, facing south.

Photo 4

DP1, Wetland B, facing west. Edge of cornfield.

Apple Tree Acres

Wetland Delineation - March 5, 2024

Photo 5

DP1, Wetland B, soils.

Photo 6

DP2, Upland, facing north.

Photo 7

DP2, Upland, facing east. Looking up slope.

Photo 8

DP2, Upland, facing south. Powerlines at the top ridge.

Apple Tree Acres

Wetland Delineation - March 5, 2024

Photo 9

DP2, Upland, facing west.

Photo 10

DP2, Upland, soils.

Photo 11

DP3, Wetland F, facing north. Wetland area no longer planted with corn.

Photo 12

DP3, Wetland F, facing east. Looking down the powerlines.

Apple Tree Acres

Wetland Delineation - March 5, 2024

Photo 13

DP3, Wetland F, facing south. Wetland continues on to neighboring property.

Photo 14

DP3, Wetland F, facing west.

Photo 15

DP3, Wetland F, soils.

Photo 16

DP3, Wetland F soils up close for clarity.

Apple Tree Acres

Wetland Delineation - March 5, 2024

Photo 17

Waypoint 1, Wetland B, facing south.

Photo 18

SC2, Upland area around northern power lines. Spot checked to confirm no wetland.

Appendix D – Data Sheets

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region

See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Apple Tree Acres Delineation City/County: Bergen/ Genesee Sampling Date: 3/5/24

Applicant/Owner: Genesee County Economic Development Center State: NY Sampling Point: DP1

Investigator(s): A.Swanson Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Local relief (concave, convex, none): Concave Slope %: 2

Subregion (LRR or MLRA): LRR L, MLRA 101 Lat: 43.067673 Long: 77.948083 Datum: WGS1984

Soil Map Unit Name: Lyons soil, 0 to 3 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: Wetland B

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: DP1

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Cornus sericea*	30	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	30 =Total Cover		
Herb Stratum (Plot size: 5ft)			
1.			
2. *Dipsacus fullonum*	10	Yes	FACU
3. *Solidago gigantea*	20	Yes	FACW
4. *Vincetoxicum nigrum*	5	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35 =Total Cover		
Woody Vine Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	50	x 2 =	100
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	5	x 5 =	25
Column Totals:	65 (A)		165 (B)

Prevalence Index = B/A = 2.54

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point DP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	7.5R 3/2	85	7.5R 4/6	15	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region

See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Apple Tree Acres Delineation City/County: Bergen/ Genesee Sampling Date: 3/5/24

Applicant/Owner: Genesee County Economic Development Center State: NY Sampling Point: DP2

Investigator(s): A.Swanson Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Local relief (concave, convex, none): NA Slope %: 0

Subregion (LRR or MLRA): LRR L, MLRA 101 Lat: 43.067949 Long: 77.947707 Datum: WGS1984

Soil Map Unit Name: Lyons soils, 0 to 3 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1
Water Table Present?	Yes X	No ____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: DP2

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1. *Panicum virgatum*	35	Yes	FAC
2. *Phalaris arundinacea*	60	Yes	FACW
3. *Solidago canadensis*	35	Yes	FACU
4. *Cornus sericea*	15	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	145 =Total Cover		
Woody Vine Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	75	x 2 =	150
FAC species	35	x 3 =	105
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	145 (A)		395 (B)

Prevalence Index = B/A = 2.72

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point DP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-15	7.5R 4/2	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region

See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Apple Tree Acres Delineation City/County: Bergen/ Genesee Sampling Date: 3/5/24

Applicant/Owner: Genesee County Economic Development Center State: NY Sampling Point: DP3

Investigator(s): A.Swanson Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope %: 0

Subregion (LRR or MLRA): LRR L, MLRA 101 Lat: 43.066986 Long: 77.951221 Datum: WGS1984

Soil Map Unit Name: Appleton silt loam, 0 to 3 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: DP3

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Fraxinus pennsylvanica*	20	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	20 =Total Cover		
Herb Stratum (Plot size: 5ft)			
1. *Juncus effusus*	10	Yes	OBL
2. *Panicum virgatum*	30	Yes	FAC
3. *Ranunculus repens*	10	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50 =Total Cover		
Woody Vine Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	20	x 2 =	40
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	70 (A)		170 (B)

Prevalence Index = B/A = 2.43

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

xvv 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point DP3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/2	95	5YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)
- ___ Red Parent Material (F21) **(MLRA 145)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Red Parent Material (F21) **(outside MLRA 145)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region

See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Apple Tree Acres Delineation City/County: Bergen/ Genesee Sampling Date: 3/5/24

Applicant/Owner: Genesee County Economic Development Center State: NY Sampling Point: DP4

Investigator(s): A.Swanson Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope %: 0

Subregion (LRR or MLRA): LRR L, MLRA 101 Lat: 43.066982 Long: 77.951927 Datum: WGS1984

Soil Map Unit Name: Appleton silt loam, 0 to 3 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: DP4

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	25	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2. *Cornus sericea*	20	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Panicum virgatum*	25	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	=Total Cover	
Woody Vine Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	25	x 3 =	75
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	80 (A)		235 (B)

Prevalence Index = B/A = 2.94

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point DP4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-18	10YR 3/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Mesic Spodic (A17) **(MLRA 144A, 145, 149B)**
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Indicators for Problematic Hydric Soils[3]:

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- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Appendix E – Qualifications

Statement of Qualifications

CC Environment & Planning • 585-219-4030 • www.ccenvironment.com
23 Jackson Street, Ste 201, Batavia, New York 14020

Resilience, Balance, Vitality

CC Environment & Planning was formed in 2009 to provide environmental expertise for communities, corporations, developers, and conservation organizations. With more than twenty years experience in natural resource conservation, Sheila Hess founded CC Environment & Planning to provide innovative and integrated services that facilitate a balanced approach to land use, conservation, and economic and community development. The success of CC Environment & Planning is based on a strong network among federal, state, and private entities including regulatory agencies, economic development organizations, municipal government, planners, agriculture, watershed groups and nonprofit organizations. The company has developed a strong environmental planning component with a recent focus on climate and resilience which complements the ecological foundation of the company's mission. With balance, integration, collaboration, and communication, CC Environment & Planning creates strategies that optimize land use, facilitate economic growth, and conserve our resources.

The mission of CC Environment & Planning is to balance natural resource conservation with economic vitality to stimulate sustainable development, preserve a healthy environment, and support a high quality of life.

List of Services

- Ecological assessment and inventory
- State and federal environmental review
- Science-based/community-based land use planning
- Municipal and watershed planning
- Strategic planning, vision and goal setting
- Green infrastructure assessment and planning
- Habitat protection and restoration
- Aquatic resource investigations/permitting
- Project development, partnerships, and funding
- Grant writing
- Graphic design—interpretive signs, education materials, outreach materials, websites
- Coordinate cultural resource investigations
- Project coordination and management
- Mitigation strategies (avoidance, minimization, compensation)

Feature Projects

- **Green Genesee Smart Genesee**
  Land use/energy planning—Genesee County, NY
- **Genesee Countywide Climate Resiliency Plan**
  Climate Resiliency Planning—Genesee County, NY
- **Ulster County Natural Resource Inventory**
  Inventory and Municipal Toolkit — Ulster County, NY
- **St. Lawrence/Buffalo River Areas of Concern**
  Habitat & Wildlife Population Assessments—New York
- **Municipal Comprehensive Plans**
  Municipal planning— NY
- **MMF Natural Resource Management Plan**
  Plan development and objective-based project implementation—Jefferson County, NY
- **Conesus Lake Watershed Toolkit**
  Planning, education—Livingston County, NY
- **Genesee Land Trust Wetland Restoration**
  Wetland Restoration—Wayne County, NY

Staff

Sheila Hess—*Principal Ecologist/CEO*
Jacob Lynch—*Environmental Technician*
Ann Wilcox-Swanson—*Environmental Technician*
Jennifer Cook—*Administrative Assistant/Graphic Designer*
Katlyn Hojnacki—*Senior Ecologist/Operations Manager*
Ben Zimmerman—*Program Dev./Operations Specialist*

Ann Swanson – Environmental Science Technician

CC Environment & Planning • 585-219-4030 • aswanson@ccenvironment.com

EDUCATION

A.S. Environmental Science, 2014
Finger Lakes Community College, Canandaigua, NY

A.S. Environmental Science
Erie Community College, Williamsville, NY

AREAS OF EXPERTISE

Wetland Mitigation

Habitat Management

Bald Eagle Management

Adaptive Management Strategies

Data Management

Wildlife Health and Surveys

Invasive Species Management

Public Education

AFFILIATIONS

New York State Chapter of The Wildlife Society

SUMMARY OF EXPERIENCE

Ann is a highly experienced professional in the field of Environmental Sciences and Fish and Wildlife habitats, with 13 years of expertise. She has collaborated closely with state and federal conservation agencies, such as the NYS Department of Environmental Conservation. Ann's extensive experience lies in habitat and wildlife management. She possesses exceptional skills in accurately recording field data, maintaining data sets, and organizing data from multiple projects.

Possessing a diverse skillset, including managing multiple field crews, utilizing various field survey techniques, conducting education and outreach, obtaining permits, operating machinery, and employing chemical immobilization techniques. Ann has dedicated considerable time to developing expertise in fish and wildlife management and surveying. This extensive field experience has enabled her to effectively oversee fish and wildlife surveying and habitat management projects by applying her technical knowledge in a practical manner. Ann consistently maintains friendly and professional communication with both landowners and the public while conducting surveys on private and public land. She consistently incorporates hard work, enthusiasm, and strong communication skills into all her projects and activities.

CERTIFICATIONS/TECHNICAL TRAINING

- Wetland Delineation and Evaluation
- Wildlife Surveys and Data Analysis
- Licensed Master Boat Captain – Merchant Marines
- Chemical Immobilization Techniques
- NYSDEC Firearm Safety Training
- Hunter Ed./Trapper Ed./Bow Instructor
- North American Banding Council Waterfowl Banding Certification

Katlyn Hojnacki – Senior Ecologist/Operations Manager

CC Environment & Planning • 585-219-4030 • khojnacki@ccenvironment.com

EDUCATION

B.S. Wildlife Sciences, 2008
State University of NY-College of Environmental Science and Forestry

AREAS OF EXPERTISE

GIS Data Management and Map Production

Habitat Management and Restoration

Invasive Species Management

Wildlife Surveys

Project Management

Environmental Assessments/Reviews

Land Use and Conservation Planning

Writing: Educational, Technical, and Planning Documents

Public Education

AFFILIATIONS

The Wildlife Society

New York State Chapter of The Wildlife Society

Friends of Parker River National Wildlife Refuge

WNY Land Conservancy

SUMMARY OF EXPERIENCE

Katlyn Hojnacki has 15 years of experience in Environmental and Biological Sciences. She has worked for and closely with state and federal conservation agencies including NYS Department of Environmental Conservation and U.S. Fish and Wildlife Service. Katlyn is skilled at managing multiple and diverse projects from field work to coordination, budgeting, and managing partnerships. Her extensive GIS experience has allowed for accurate and efficient field data collection, organized data management, and polished map products. Katlyn's approachable personality, communication skills, and broad technical background are assets in her development and administration of complex, multi-partner, and science-based conservation projects.

Katlyn employs a diverse skillset that includes field survey techniques, education and outreach, permitting, data analysis, GIS mapping, budgeting and management, report development, and land use planning. She has spent a significant amount of time providing public educational services, conducting and administering field surveys, using ArcMap for GIS mapping, and working with multiple stakeholders in developing numerous land use and conservation plans. This work has included regular communication with clients, colleagues, partners, volunteers, and members of the public (both informally and during formal public programs and presentations). Katlyn has excellent communication skills and employs a positive, clear, and concise manner with landowners, communities, companies, nonprofits, and agencies.

CERTIFICATIONS/TECHNICAL TRAINING

- Wetland Delineation and Evaluation
- Wildlife Surveys and Data Analysis
- Invasive Species Management
- Geographic Information Systems (GIS) and Global Positioning Systems (GPS)
- Wildland Firefighter Type II
- Motorboat Operator Certification
- Game of Logging Chainsaw Operation

Appendix B

Threatened & Endangered Species Review Documentation

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
Email Address: fw5es_nyfo@fws.gov

In Reply Refer To: 04/05/2024 19:44:49 UTC
Project Code: 2024-0073671
Project Name: Apple Tree Acres Business Park

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through IPaC by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see Migratory Bird Permit | What We Do | U.S. Fish & Wildlife Service (fws.gov).

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

PROJECT SUMMARY

Project Code: 2024-0073671
Project Name: Apple Tree Acres Business Park
Project Type: Commercial Development
Project Description: The expansion of the business park. Development of an active agricultural field.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.0689315,-77.94825373227609,14z

Counties: Genesee County, New York

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 2 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ This species only needs to be considered if the project includes wind turbine operations. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ This species only needs to be considered if the project includes wind turbine operations. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

REPTILES

NAME	STATUS
Eastern Massasauga (=rattlesnake) *Sistrurus catenatus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2202	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: CC Environment & Planning
Name: Katlyn Hojnacki
Address: 23 Jackson Street
City: Batavia
State: NY
Zip: 14020
Email khojnacki@ccenvironment.com
Phone: 5852194030

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
Email Address: fw5es_nyfo@fws.gov

In Reply Refer To: 04/05/2024 19:48:08 UTC
Project code: 2024-0073671
Project Name: Apple Tree Acres Business Park

Federal Action Agency (if applicable):

Subject: Record of project representative's no effect determination for 'Apple Tree Acres Business Park'

Dear Katlyn Hojnacki:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on April 05, 2024, for 'Apple Tree Acres Business Park' (here forward, Project). This project has been assigned Project Code 2024-0073671 and all future correspondence should clearly reference this number. **Please carefully review this letter.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project has reached the determination of "No Effect" on the northern long-eared bat. To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative), to a federally listed species or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed

action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (See § 402.17).

Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no consultation with the Service is required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13].

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Eastern Massasauga (=rattlesnake) *Sistrurus catenatus* Threatened
- Monarch Butterfly *Danaus plexippus* Candidate
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

You may coordinate with our Office to determine whether the Action may affect the animal species listed above and, if so, how they may be affected.

Next Steps

Based upon your IPaC submission, your project has reached the determination of “No Effect” on the northern long-eared bat. If there are no updates on listed species, no further consultation/ coordination for this project is required with respect to the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place to ensure compliance with the Act.

If you have any questions regarding this letter or need further assistance, please contact the New York Ecological Services Field Office and reference Project Code 2024-0073671 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

Apple Tree Acres Business Park

2. Description

The following description was provided for the project 'Apple Tree Acres Business Park':

> The expansion of the business park. Development of an active agricultural field.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.0689315,-77.94825373227609,14z

DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the Endangered northern long-eared bat (Myotis septentrionalis). Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for those species.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. The proposed action does not intersect an area where the northern long-eared bat is likely to occur, based on the information available to U.S. Fish and Wildlife Service as of the most recent update of this key. If you have data that indicates that northern long-eared bats are likely to be present in the action area, answer "NO" and continue through the key.

   Do you want to make a no effect determination?

   Yes

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: CC Environment & Planning
Name: Katlyn Hojnacki
Address: 23 Jackson Street
City: Batavia
State: NY
Zip: 14020
Email khojnacki@ccenvironment.com
Phone: 5852194030

EAF Mapper Summary Report

Friday, April 5, 2024 3:50 PM

Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.

B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	Yes
E.1.h.iii [Within 2,000' of DEC Remediation Site - DEC ID]	819004
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	No
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.j. [100 Year Floodplain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.k. [500 Year Floodplain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.l. [Aquifers]	No

E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	No
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

Traffic Impact Study

TOWN OF BERGEN, GENESEE COUNTY, NY

Appletree Acres Site

May 17, 2024

CPL
ARCHITECTURE
ENGINEERING
PLANNING
CPLteam.com

Prepared by:

David Hastings

David Hastings, P.E., PTOE
Transportation Engineer

Table of Contents

1 Introduction

A new development is proposed to be constructed on a currently vacant parcel at the Appletree Acres Corporate Park in Bergen, NY. The site is situated on State Route 19 (S Lake Rd). Access to the site will be provided through a single driveway connection to Route 19. This development will be separated from the other businesses within the Corporate Park with no internal circulation.

The new development is planned to consist of one building totaling approximately 200,000 square feet. Part of the building will be designated for manufacturing and another part as for office space. The development is anticipated to be completed in 2025.

The purpose of this report is to analyze the impacts of traffic anticipated to be generated from the new development at the proposed site driveway connection to Route 19 as well as the nearby existing intersections. Included are analyses of the level of service for Existing conditions, future No-Build conditions, and future Build conditions.

2 Site Description

The proposed development is located within the Town of Bergen in Genesse County, NY. The development fronts Route 19 and is located within the Appletree Acres Corporate Park. The rest of the corporate park is accessible via two access roads on NYS Route 33 [Route 33]. The new development will not be connected to the rest of the corporate park at this time and will only be accessible via Route 19. Route 19 is a two-lane road which is functionally classified as a rural minor arterial. Route 19 is also known as South Lake Street and falls under the jurisdiction of NYSDOT. As part of this study, three existing intersections near the site as well as one proposed site driveway were evaluated as enumerated in Figure I.

1. Appletree Road / Appletree Avenue / NYS Route 33 (Clinton Street Road): This four-legged intersection operates as a two way stop controlled intersection. Appletree Road and Appletree Avenue are stopped controlled, while Route 33 is free flowing. Appletree Road has a single lane for all SB turning movements. Appletree Avenue features a designated right-turn lane along with a combined through and left-turn lane. Route 33 includes a through lane in both directions with a designated left-turn lane each way for channelized traffic flow.

2. Liberty Way / NYS Route 33 (Clinton Street Road): This will be a three-legged intersection that operates as a two way stop controlled intersection as well. Liberty Way is stopped controlled with shared left-turn and right-turn lane. Route 33 is free flowing with a single lane in each direction and a two-way left-turn lane in the middle.

3. NYS Route 19 (South Lake Road) / NYS Route 33 (Clinton Street Road): This four-legged intersection is signal controlled. Route 19 contains a combined through and right-turn lane as well as a designated left-turn lane in both directions. Route 33 has a designated through lane and left turn lane in each direction, and also has a channelized right-turn lane in each direction which act as yield-controlled.

4. Proposed Site Driveway / NYS Route 19 (South Lake Street): This will be a three-legged intersection that operates as a two way stop controlled intersection. The Site Driveway will be

a proposed new driveway connection to Route 19. Route 19 will remain free flowing while the Site Driveway will be stopped-controlled. The existing configuration of Route 19 has one lane for all movements in either direction. The proposed site driveway will consist of one entrance lane and two exit lanes – one for right turns and one for left turns on Route 19.

Figure I – Location Map

3 Existing Traffic Data

3.1 INTERSECTION TURNING MOVEMENT COUNTS

Existing turning movement counts were obtained at three existing intersections surrounding the proposed site, at Locations 1 through 3 as identified in Figure I. Turning movement counts were collected on Tuesday March 5, 2024, during two peak hour periods, in the morning and evening from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM, respectively, to correlate with anticipated peak movements associated with normal daily activity.

Turning movement counts were analyzed to determine the one hour during each of the count periods with the highest traffic volumes. These were used to establish the Peak Hour volumes for the AM and PM peak hours. The peak hour in the morning was established between 7:00am and 8:00am and the evening peak hour was established between 3:30pm and 4:30pm. The evening peak hour for intersection #1 was actually 3:45pm to 4:45 pm, so as a conservative approach, the peak volumes from this time were used for the established peak hour. The existing traffic data is presented in Appendix A and shown in Table 1 below. Diagrams representing existing AM and PM peak hour turning movement volumes can be found in Appendix C.

Table 1: Weekday Existing (2024) Peak Hour Volumes

Location 1 – Route 33 & Appletree Ave/Appletree Rd												
Peak Hour	EB Route 33			WB Route 33			NB Appletree Ave			SB Appletree Rd		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	0	392	35	36	289	82	13	3	6	74	7	0
PM	0	330	7	11	369	146	18	13	44	72	0	0
Location 2 – Route 33 & Liberty Way												
Peak Hour	EB Route 33			WB Route 33			NB Liberty Way			SB		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	0	424	0	1	303	0	1	0	0	-	-	-
PM	0	354	0	0	391	0	3	0	0	-	-	-
Location 3 – Route 33 & Route 19												
Peak Hour	EB Route 33			WB Route 33			NB Route 19			SB Route 19		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	29	297	11	14	256	28	15	56	28	93	71	18
PM	50	243	17	45	283	53	16	100	26	62	73	27

3.2 AVERAGE DAILY TRAFFIC

Daily traffic volumes were collected at one location to provide traffic data applicable to the proposed development and its driveway access point. This was done at the approximate location of the proposed site driveway on Route 19, about 1,500 feet south of the Route 33/Route 19 intersection.

Tube counts were collected in this location using an Automatic Traffic Reader (ATR), which collects traffic volumes, vehicle classifications, and speed data. This data was collected over the course of three full days from Tuesday March 5, 2024, to Thursday March 7, 2024. A summary of the data collected at the tube count location can be seen in Table 2. Raw data is included in Appendix A.

Table 2: Route 19 (S Lake St) ADT Volumes

Direction	ADT	AM Peak Hour Volume	PM Peak Hour Volume	Heavy Vehicle %	Avg. Speed (MPH)	85th % Speed (MPH)
Northbound	1,294	89	129	10.2%	48	54
Southbound	1,295	87	125	12.9%	48	54
Combined	2,589	176	253	11.6%	48	54

4 Projected Future Conditions

The proposed 49+ acre site in Bergen is planned to have one access point along Route 19. The proposed development will consist of one building containing approximately 163,458 square feet of manufacturing space and 36,283 square feet of office space. The estimated time of completion (ETC) is scheduled for 2025. The proposed layout for the development and access road can be seen in Figure II below,

Figure II – Concept Site Plan

4.1 GROWTH RATE

From U.S. census data, the population in Bergen, NY has shown to remain somewhat steady over the last 10 years, while the overall Genesee County population has seen a slight decline. Using the NYSDOT Traffic Data Viewer system, the Average Annual Daily Traffic (AADT) was obtained for four locations in the area. The data from this reveals that traffic has fluctuated over the last 5-10 years, with no significant patterns in traffic over time. Due to the continuous fluctuations in traffic and with these population considerations in mind, a conservative approach using a minimal growth rate of 0.5% was applied to calculate future traffic volume increases. NYSDOT Traffic Data Viewer information can be found in Appendix A with the other existing traffic data.

4.2 TRIP GENERATION

Estimated new trips generated by the development were determined using the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition. Using the ITE Trip generator, trips are calculated based on variables such as number of employees or square footage of a facility type provided under various Land Use Codes (LUC). Since, the proposed development will be used for both manufacturing and office use, there are two LUC's in the manual that fit this description; one being LUC 140: 'Manufacturing' and the other being LUC 715: 'Single Tenant Office Building.'

Along with the given square footage for the proposed buildings, an approximate number of employes and shifts were obtained. 110 manufacturing employees are slated to work over 2 shifts and 30 office employees expected to work a normal daily shift, for a total of 140 employees. It was also noted that there are 120 employees total on the 1st shift and 20 on the second shift, thus it's assumed that the first shift is made up of 90 manufacturing workers and the 30 office employees, while the reaming 20 manufacturing employees make up the 2nd shift.

This information is important in helping to decide which variable, square footage vs employees, to choose from in the ITE trip data for each LUC. For the manufacturing LUC, the square footage variable of 163,458 square feet produces entering and exiting trips for the peak hours that are more appropriate than the number of employees variable. The opposite is true of the office LUC, where using the variable for the number of employees, 30, is much more appropriate than the square footage variable in producing number of trips.

These considerations for ITE data were used to find the additional trips for entering and exiting vehicles during both the AM and PM peak hours. The total number of trips was generated from the appropriate ITE charts and can be seen as summarized in Table 3 below. Refer to Appendix B for the ITE LUC information and calculations of trips generated.

Table 3: Trip Generations

Trip Generations		
Peak Hour	**Entering**	**Exiting**
AM	109	29
PM	57	147

4.3 TRIP DISTRIBUTION

The distribution of new trips generated by the proposed development is based on several factors including the existing travel patterns of the roadway network in the area, the peak hours of traffic operations, and the proximity of the development to other nearby major roadways and regions. Since this project is Industrial in nature, it is anticipated that 65% of all trips will generate from the larger thoroughfares, Route 33 and I-490, and the remaining 35% is anticipated to generate from Route 19. Figures presenting the distribution patterns for the trips generated can be found in Appendix B. A series of diagrams have been developed to work through distribution patterns and create the Build Conditions, which are provided in Appendix C.

5 Capacity Analysis

5.1 TRAFFIC MODELING

The purpose of this study is to analyze the Existing traffic conditions, future No-Build conditions, and future Build conditions. Comparisons of these conditions can identify impacts to be expected by adding traffic and distributing it through the adjacent road network. The capacity analyses performed in this report are consistent with the most recent version of the Highway Capacity Manual (HCM). The road network and traffic volumes are modeled using Synchro 11 software.

The HCM quantifies the traffic flow in terms of levels of service (LOS). There are six levels of service, with LOS A indicating very low levels of delays and LOS F indicating high levels of delays associated with congestion. These represent a qualitative measure of operational conditions within a traffic stream, and the perception of conditions by motorists and/or passengers. Levels of service and capacity for signalized intersections are calculated for each lane group (a lane group may be one or more movements), each intersection approach, and the intersection as a whole. The intersection level of service is merely a weighted average of the individual approaches and may not be considered a valid measure of the quality or acceptability of an intersection design since it can conceal poor operating conditions on individual approaches.

Levels of service at unsignalized intersections are only calculated for minor movements since the through movement on the major street is not affected by intersection traffic control. The level of service for signalized intersections and unsignalized intersections can be compared. Delay descriptions for each level of service are as follows. Generally, a LOS of D or better indicates an acceptable level of delay.

Table 4: Level of Service Delays

LOS	Signalized Intersections Control Delay (s/veh)	Non-Signalized Intersections Control Delay (s/veh)
A	≤10	≤10
B	>10-20	>10-15
C	>20-35	>15-25
D	>35-55	>25-35
E	>55-80	>35-50
F	>80	>50

The future No-Build conditions assume that the road network remains unchanged from existing conditions and the only change to traffic volumes and turning movements is the increase due to general growth. For the future Build conditions, the analysis performed assumes the only changes to the existing road network is the addition of the proposed driveway for the new development on Route 19 with added site generated traffic. In these analyses, the new driveway is modeled as a two-way stop-controlled intersection. The results of the analyses are summarized in Tables 6 and 7 below. The Synchro reports for each condition can be found in Appendix D.

Table 5: LOS & Delay Table (AM)

AM Peak Hour						
Intersection		Approach	Treatment	AM		
				Existing (2024)	No Build (2025)	ETC (2025)
				LOS (Delay)	LOS (Delay)	LOS (Delay)
1	NY Route 33 & Appletree Ave/ Appletree Rd	EB	TWSC	A (0.0)	A (0.0)	A (0.0)
		WB		A (0.7)	A (0.7)	A (0.6)
		NB		C (18.1)	C (18.3)	C (20.2)
		SB		D (28.1)	D (28.1)	D (34.2)
		Overall		**A (3.2)**	**A (3.2)**	**A (3.4)**
2	NY Route 33 & Liberty Way	EB	TWSC	A (0.0)	A (0.0)	A (0.0)
		WB		A (0.0)	A (0.0)	A (0.0)
		NB		B (13.0)	B (13.0)	B (13.6)
		Overall		**A (0.0)**	**A (0.0)**	**A (0.0)**
3	NY Route 33 & NY Route 19	EB	Signalized	A (8.0)	A (8.0)	A (8.2)
		WB		A (7.7)	A (7.7)	A (8.4)
		NB		A (9.4)	A (9.4)	A (9.6)
		SB		B (10.2)	B (10.2)	B (10.3)
		Overall		**A (8.5)**	**A (8.5)**	**A (8.9)**
4	NY Route 19 & Proposed Access Roadway/Site Driveway	WB	TWSC	-	-	A (9.4)
		NB		-	-	A (0.0)
		SB		-	-	A (3.8)
		Overall		**-**	**-**	**A (3.0)**

Table 6: LOS & Delay Table (PM)

PM Peak Hour						
Intersection		Approach	Treatment	PM		
				Existing (2024)	No Build (2025)	ETC (2025)
				LOS (Delay)	LOS (Delay)	LOS (Delay)
1	NY Route 33 & Appletree Ave/ Appletree Rd	EB	Signalized	A (0.0)	A (0.0)	A (0.0)
		WB		A (0.2)	A (0.2)	A (0.2)
		NB		B (14.9)	C (15.1)	C (17.3)
		SB		D (29.1)	D (30.4)	E (42.2)
		Overall		**A (3.3)**	**A (3.4)**	**A (3.9)**
2	NY Route 33 & Liberty Way NY Route 33 & NY Route 19	EB	Signalized	A (0.0)	A (0.0)	A (0.0)
		WB		A (0.0)	A (0.0)	A (0.0)
		NB		B (12.9)	B (13.2)	B (14.1)
		Overall		**A (0.1)**	**A (0.1)**	**A (0.1)**
3	US Route 20/ NY Route 5 & Driveway 1	EB	TWSC	A (7.1)	A (7.7)	A (8.7)
		WB		A (9.8)	A (9.9)	B (11.0)
		NB		B (10.0)	B (10.3)	B (10.9)
		Overall		**A (8.0)**	**A (8.5)**	**A (9.5)**
4	NY Route 19 & Proposed Access Roadway/Site Driveway	EB	TWSC	-	-	B (10.0)
		NB		-	-	A (0.0)
		SB		-	-	A (2.0)
		Overall		**-**	**-**	**A (3.9)**

6 Turn Lane Warrant Analysis

The addition of southbound left-turning and northbound right-turning traffic on Route 19 where the site driveway is proposed warrants studying the cost/benefit of adding an exclusive turn lane. Guidance on evaluating and implementing additional lanes on an existing roadway can be found in the NYSDOT Highway Design Manual under Chapter 5, Section 5.9.8 for Intersection Widening. This chapter provides additional guidance to refer to AASHTO's Policy on Geometric Design of Highways and Streets, 2018 (7th Edition) under Chapter 9, Section 9.7 for Auxiliary Lanes.

NYSDOT guidance indicates that the decision to construct left-turn lanes should consider:

1. The volume of left-turning traffic versus the volume of opposing traffic.
2. The crash history.
3. The crash potential and anticipated operating speeds. (Possible severity of crashes)
4. Sight distance on the mainline affecting the ability to see turning vehicles.
5. Construction costs.
6. Right-of-way (ROW) impacts.

For point 1, the AASHTO manual includes traffic volume criteria to be considered in determining the need for left turn lanes along two-lane highways, at a three-leg intersection, in a rural area. Figure 9-

36 within the AASHTO manual is the appropriate graph for this intersection type to establish a threshold for warranting a left turn lane and is presented as Figure III in this report. Volume diagrams showing the conservative estimated peak hour traffic volumes for the Build conditions can be found in Appendix C. Left turn and opposing traffic volumes used to evaluate the warrant for left turn lanes are summarized in Table 7. The points from Table 7 are plotted on the graph in Figure III to evaluate left turn treatment warrants.

Table 7: Left Turn Lane Warrant Volumes

Left Turn Lane Warrant Volumes		
Direction	AM Peak Hour	PM Peak Hour
SB Left Turn Volume	87	46
NB Opposing Volume	111	141

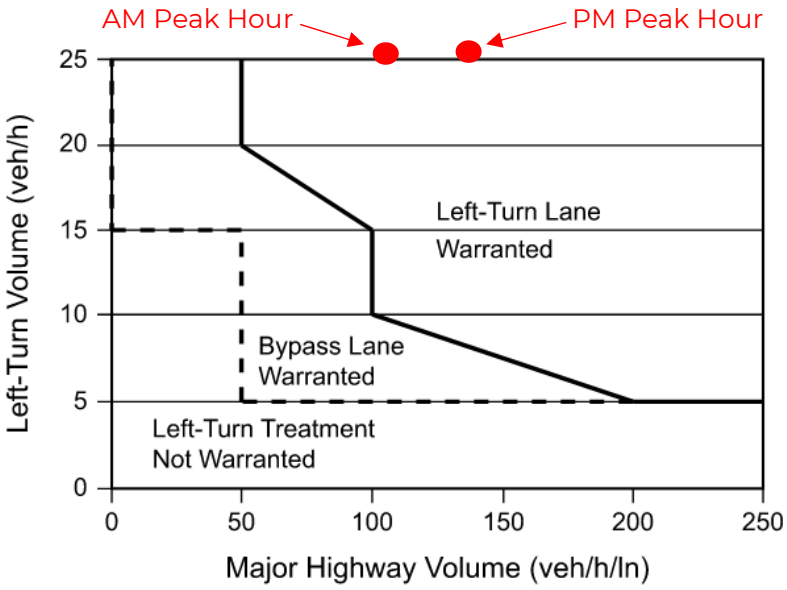


Figure III – Suggested Left-Turn Treatment Warrants (AASHTO Figure 9-36)

For point 2, the crash history evaluated for the corridor in front of the site shows that there is no existing issue with crashes along the roadway based on existing traffic volumes.

For point 3, the location of the driveway is a tee intersection and does not conflict with adjacent intersections and driveways. It is approximately 1,000 feet south of the intersection with Route 33 and about 100 feet from a small residential driveway. The observed 85th percentile speed is 54 mph at the location of the proposed driveway, with an average speed of 45 mph. The potential for crashes is low. The severity of potential crashes would also be low.

For point 4, the sight distance is not considered an issue for the driveway. Route 19 is straight and level which provides ample sight distance for southbound left-turning vehicles to identify oncoming traffic

to judge timing of gaps in traffic. Also, for northbound through traffic to spot left turning vehicles, there is enough distance to come to a stop if necessary.

For points 5 and 6, recommendations for left turn lanes needs to be made with care and consideration as construction costs are to be borne by the Developer for this facility as part of the site plan. ROW needed for widening would negatively impact adjacent parcels.

Summary: The volume of existing traffic on Route 19 is small as indicated by the data presented in Table 1 and Appendix A. The volume of traffic estimated to be generated by the site is based on conservative assumptions of development. Although both the AM and PM peak hours plot above the left-turn lane warrant threshold in the graph of Figure III above, this does not mean that a left-turn lane is automatically warranted. The volume of left turning vehicles and additional opposing vehicles at the driveway for the peak hours would realistically only happen over a period of time much less than that of a full "peak hour," since most of the employees at the proposed facility work a specific shift time. The AASHTO manual includes a statement that reads.

> *"The volume-based guidelines or warrants presented … indicate situations where a left-turn lane may be desirable, not necessarily situations where a left-turn lane is definitely needed."*

Furthermore, the levels of service and delays at this proposed driveway intersection for the build conditions are excellent as seen in Tables 5 and 6. Considering this and the fact that volumes outside of the peak hour area low on Route 19, crash history shows no existing issues, and sight distances are adequate for the site, the benefit that a left turn lane would provide is limited. A left turn lane at the proposed site driveway is not recommended.

7 Results and Conclusion

Under the Existing and No-Build conditions, all intersections operate with acceptable LOS and minimal delay. Under the Build condition, the additional site generated traffic has a negligible impact on the level of service and delay at adjacent intersections and the proposed driveway. Route 33 and Route 19 both prove to have sufficient capacity to handle the additional traffic.

With the generally low volume of traffic on Route 19, there are sufficient gaps in traffic for vehicles to enter the road with minimal delay. No improvements or modifications to the existing roadway network are necessary.

APPENDIX A

Existing Traffic Data

National Data & Surveying Services

Intersection Turning Movement Count

Location: Appletree Rd/Appletree Ave & Clinton St Rd/SR 33/Buffalo Rd/SR 33A
City: Bergen
Control: 2-Way Stop(NB/SB)

Project ID: 24-400001-001
Date: 3/5/2024

Data - Total

NS/EW Streets:	Appletree Rd/Appletree Ave				Appletree Rd/Appletree Ave				Clinton St Rd/SR 33/Buffalo Rd/SR 33A				Clinton St Rd/SR 33/Buffalo Rd/SR 33A				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	1	0	0	1	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	16	4	0	0	0	62	3	0	4	28	4	0	121
6:15 AM	1	0	1	0	21	3	0	0	0	85	6	0	7	39	8	0	171
6:30 AM	3	2	3	0	23	1	0	0	0	86	10	0	6	64	14	0	212
6:45 AM	0	0	3	0	27	3	0	0	0	73	12	0	16	37	12	0	183
7:00 AM	4	2	0	0	19	1	0	0	0	85	8	0	7	69	17	0	212
7:15 AM	3	1	2	0	20	2	0	0	0	100	5	0	14	65	28	0	240
7:30 AM	0	0	0	0	14	0	0	0	0	107	11	0	5	98	24	0	259
7:45 AM	5	0	4	1	21	4	0	0	0	100	11	0	10	57	13	0	226
8:00 AM	6	0	4	0	27	0	0	0	0	70	4	0	3	57	16	0	187
8:15 AM	2	0	1	0	24	3	0	0	0	82	8	0	7	57	9	0	193
8:30 AM	5	0	1	0	18	0	0	0	0	75	4	0	8	55	11	0	177
8:45 AM	1	0	6	0	10	1	0	0	0	61	2	0	6	63	9	0	159
9:00 AM	6	0	2	0	10	6	0	0	0	52	6	0	2	56	9	0	149
9:15 AM	1	0	3	0	8	0	0	0	0	68	4	0	2	58	2	1	147
9:30 AM	1	1	1	0	10	0	0	0	0	46	1	0	2	56	13	0	131
9:45 AM	2	1	3	0	11	0	1	0	0	51	2	0	4	58	5	0	138
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	40	7	34	1	279	28	1	0	0	1203	97	0	103	917	194	1	2905
APPROACH %'s :	48.78%	8.54%	41.46%	1.22%	90.58%	9.09%	0.32%	0.00%	0.00%	92.54%	7.46%	0.00%	8.48%	75.47%	15.97%	0.08%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	12	3	6	1	74	7	0	0	0	392	35	0	36	289	82	0	937
PEAK HR FACTOR :	0.600	0.375	0.375	0.250	0.881	0.438	0.000	0.000	0.000	0.916	0.795	0.000	0.643	0.737	0.732	0.000	0.904
	0.550				0.810				0.905				0.801				

NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	1	0	0	1	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
10:00 AM	1	0	4	0	12	0	0	0	0	48	2	0	4	39	14	0	124
10:15 AM	1	0	5	0	8	1	0	0	0	53	0	0	4	43	7	0	122
10:30 AM	1	2	3	0	10	0	1	0	0	47	4	0	1	40	8	0	117
10:45 AM	0	1	2	0	6	0	0	0	0	52	0	0	3	49	15	0	128
11:00 AM	1	1	7	0	10	0	0	0	0	32	3	0	3	63	10	0	130
11:15 AM	3	0	4	0	15	0	0	0	0	59	4	0	5	50	10	0	150
11:30 AM	2	1	1	0	9	0	0	0	1	46	3	0	3	42	9	0	117
11:45 AM	1	2	5	0	19	0	0	0	0	41	2	0	1	41	9	0	121
12:00 PM	5	2	4	0	13	2	0	0	0	50	2	0	2	59	8	0	147
12:15 PM	0	2	3	0	13	3	0	0	0	64	6	0	4	47	9	0	151
12:30 PM	5	0	5	0	6	1	0	0	0	53	5	0	3	63	10	0	151
12:45 PM	1	2	6	0	8	0	0	0	0	67	4	0	2	74	8	0	172
1:00 PM	2	1	3	0	9	0	0	0	0	53	6	0	9	48	9	0	140
1:15 PM	2	2	4	0	16	0	0	0	0	64	4	0	4	56	11	0	163
1:30 PM	12	3	11	0	10	0	0	0	0	61	3	0	3	53	9	0	165
1:45 PM	4	0	2	0	7	2	0	0	0	53	7	0	1	49	15	0	140
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	41	19	69	0	171	9	1	0	1	843	55	0	52	816	161	0	2238
APPROACH %'s :	31.78%	14.73%	53.49%	0.00%	94.48%	4.97%	0.55%	0.00%	0.11%	93.77%	6.12%	0.00%	5.05%	79.30%	15.65%	0.00%	
PEAK HR :	12:45 PM - 01:45 PM																TOTAL
PEAK HR VOL :	17	8	24	0	43	0	0	0	0	245	17	0	18	231	37	0	640
PEAK HR FACTOR :	0.354	0.667	0.545	0.000	0.672	0.000	0.000	0.000	0.000	0.914	0.708	0.000	0.500	0.780	0.841	0.000	0.930
	0.471				0.672				0.923				0.851				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	1	0	0	1	1	0	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:00 PM	1	1	8	0	5	0	0	0	0	54	4	0	4	56	18	0	151
2:15 PM	16	13	13	0	7	1	0	0	0	64	7	0	7	78	16	0	222
2:30 PM	11	2	9	0	15	0	0	0	0	52	4	0	6	86	23	0	208
2:45 PM	3	3	8	0	15	0	0	0	0	66	3	0	4	87	31	0	220
3:00 PM	9	4	8	0	10	1	1	0	0	56	2	0	5	64	17	0	177
3:15 PM	3	2	6	0	12	0	0	0	0	68	3	0	4	79	30	0	207
3:30 PM	6	4	10	0	7	0	0	0	0	91	0	0	5	85	22	0	230
3:45 PM	3	0	8	0	19	0	0	0	0	93	2	0	7	114	33	0	279
4:00 PM	10	5	10	0	24	0	0	0	0	74	3	0	0	88	35	0	249
4:15 PM	2	1	8	0	12	0	0	0	0	89	2	0	3	84	36	0	237
4:30 PM	3	7	18	0	17	0	0	0	0	74	0	0	1	83	42	0	245
4:45 PM	4	4	12	0	14	0	0	0	1	53	1	0	1	82	42	0	214
5:00 PM	10	6	12	0	8	0	0	0	0	72	1	0	3	82	34	0	228
5:15 PM	2	2	4	0	10	2	0	0	0	72	1	0	2	97	21	0	213
5:30 PM	2	2	4	0	15	0	0	0	0	47	0	0	2	89	38	0	199
5:45 PM	1	0	5	0	3	0	0	0	0	65	2	0	0	56	34	0	166
6:00 PM	0	0	2	0	2	0	0	0	0	41	0	0	0	37	15	0	97
6:15 PM	0	0	4	0	6	0	0	0	0	36	0	0	0	37	13	0	96
6:30 PM	1	0	0	0	7	0	0	0	0	42	0	0	2	35	18	0	105
6:45 PM	1	0	2	0	8	0	0	0	0	17	0	0	1	37	17	0	83
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	88	56	151	0	216	4	1	0	1	1226	35	0	57	1456	535	0	3826
APPROACH %'s :	29.83%	18.98%	51.19%	0.00%	97.74%	1.81%	0.45%	0.00%	0.08%	97.15%	2.77%	0.00%	2.78%	71.09%	26.12%	0.00%	
PEAK HR :	03:45 PM - 04:45 PM																TOTAL
PEAK HR VOL :	18	13	44	0	72	0	0	0	0	330	7	0	11	369	146	0	1010
PEAK HR FACTOR :	0.450	0.464	0.611	0.000	0.750	0.000	0.000	0.000	0.000	0.887	0.583	0.000	0.393	0.809	0.869	0.000	0.905
	0.670				0.750				0.887				0.854				

Prepared by National Data & Surveying Services

Appletree Rd/Appletree Ave & Clinton St Rd/SR 33/Buffalo Rd/SR 33A

Peak Hour Turning Movement Count

ID: 24-400001-001
City: Bergen

Day: Tuesday
Date: 3/5/2024

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	6:00 AM - 10:00 AM
12:45 PM - 01:45 PM	10:00 AM - 02:00 PM
03:45 PM - 04:45 PM	2:00 PM - 07:00 PM

SOUTHBOUND — Appletree Rd/Appletree Ave

AM	0	7	74	0	85	AM
NOON	0	0	43	0	45	NOON
PM	0	0	72	0	159	PM

EASTBOUND — Clinton St Rd/SR 33/Buffalo Rd/SR 33A

AM	NOON	PM	
301	248	387	
0	0	0	0
0	0	0	1
392	245	330	1
35	17	7	0
AM	NOON	PM	

WESTBOUND — Clinton St Rd/SR 33/Buffalo Rd/SR 33A

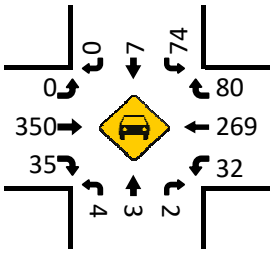
PM	NOON	AM	
146	37	82	0
369	231	289	1
11	18	36	1
0	0	0	0
446	312	472	
PM	NOON	AM	

NORTHBOUND — Appletree Rd/Appletree Ave

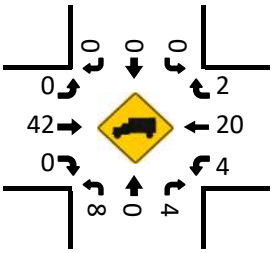
PM	18	0	18	13	44	PM
NOON	35	0	17	8	24	NOON
AM	79	1	12	3	6	AM

CONTROL			
2-Way Stop(NB/SB)			
TEV	937	640	1010
	AM	NOON	PM
PHF	0.90	0.93	0.91

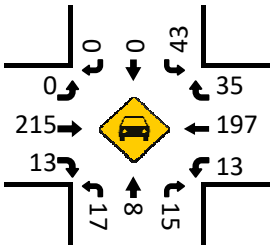
Cars (AM)



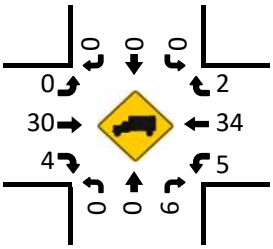
HT (AM)



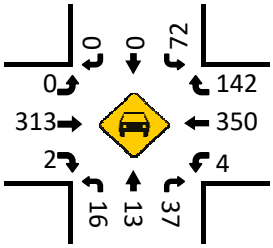
Cars (NOON)



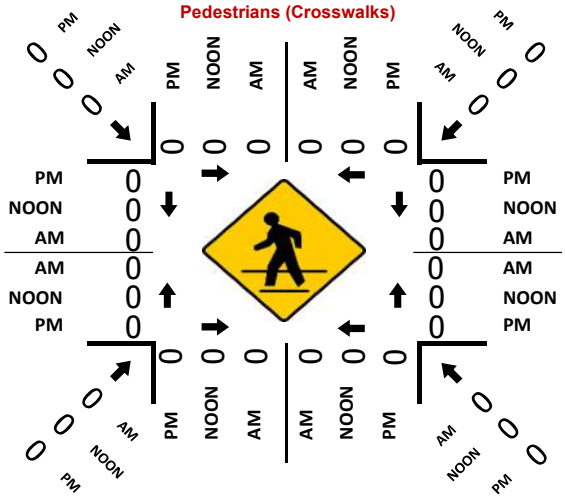
HT (NOON)



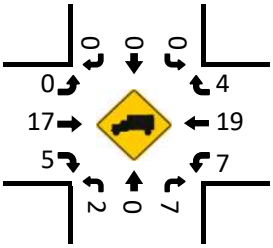
Cars (PM)



Pedestrians (Crosswalks)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Liberty Wy & Clinton St Rd/SR 33
City: Bergen
Control: No Control

Project ID: 24-400001-002
Date: 3/5/2024

Data - Total

NS/EW Streets:	Liberty Wy				Liberty Wy				Clinton St Rd/SR 33				Clinton St Rd/SR 33				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	1	0	0	0	0	0	0	0	0	66	1	0	0	26	0	0	94
6:15 AM	0	0	0	0	0	0	0	0	0	92	0	0	0	39	0	0	131
6:30 AM	0	0	0	0	0	0	0	0	0	95	3	0	0	66	0	0	164
6:45 AM	0	0	0	0	0	0	0	0	0	88	5	0	1	37	0	0	131
7:00 AM	1	0	0	0	0	0	0	0	0	91	0	0	0	75	0	0	167
7:15 AM	0	0	0	0	0	0	0	0	0	104	0	0	1	72	0	0	177
7:30 AM	0	0	0	0	0	0	0	0	0	118	0	0	0	95	0	0	213
7:45 AM	0	0	0	0	0	0	0	0	0	111	0	0	0	61	0	0	172
8:00 AM	2	0	0	0	0	0	0	0	0	75	1	0	1	66	0	0	145
8:15 AM	0	0	0	0	0	0	0	0	0	91	1	0	0	57	0	0	149
8:30 AM	0	0	0	0	0	0	0	0	0	77	0	0	0	59	0	0	136
8:45 AM	1	0	0	0	0	0	0	0	0	62	0	0	0	62	0	0	125
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	5	0	0	0	0	0	0	0	0	1070	11	0	3	715	0	0	1804
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%					0.00%	98.98%	1.02%	0.00%	0.42%	99.58%	0.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	1	0	0	0	0	0	0	0	0	424	0	0	1	303	0	0	729
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.898	0.000	0.000	0.250	0.797	0.000	0.000	0.856
	0.250								0.898				0.800				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:00 PM	1	0	0	0	0	0	0	0	0	58	0	0	0	74	0	0	133
3:15 PM	2	0	0	0	0	0	0	0	0	71	0	0	0	82	0	0	155
3:30 PM	3	0	0	0	0	0	0	0	0	91	0	0	0	89	0	0	183
3:45 PM	0	0	0	0	0	0	0	0	0	95	0	0	0	116	0	0	211
4:00 PM	0	0	0	0	0	0	0	0	0	79	0	0	0	98	0	0	177
4:15 PM	0	0	0	0	0	0	0	0	0	89	0	0	0	88	0	0	177
4:30 PM	1	0	1	0	0	0	0	0	0	75	0	0	0	86	0	0	163
4:45 PM	0	0	0	0	0	0	0	0	0	57	0	0	0	84	0	0	141
5:00 PM	0	0	0	0	0	0	0	0	0	72	0	0	0	91	0	0	163
5:15 PM	0	0	0	0	0	0	0	0	0	73	0	0	0	101	0	0	174
5:30 PM	1	0	1	0	0	0	0	0	0	46	0	0	0	89	0	0	137
5:45 PM	0	0	1	0	0	0	0	0	0	64	0	0	0	60	0	0	125
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	8	0	3	0	0	0	0	0	0	870	0	0	0	1058	0	0	1939
APPROACH %'s :	72.73%	0.00%	27.27%	0.00%					0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	3	0	0	0	0	0	0	0	0	354	0	0	0	391	0	0	748
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.932	0.000	0.000	0.000	0.843	0.000	0.000	0.886
	0.250								0.932				0.843				

Prepared by National Data & Surveying Services

Liberty Wy & Clinton St Rd/SR 33

Peak Hour Turning Movement Count

ID: 24-400001-002
City: Bergen

Day: Tuesday
Date: 3/5/2024

PEAK HOURS	
AM	07:00 AM - 08:00 AM
NOON	NONE
PM	03:30 PM - 04:30 PM

COUNT PERIODS	
AM	6:00 AM - 09:00 AM
NOON	NONE
PM	3:00 PM - 06:00 PM

SOUTHBOUND (Liberty Wy)

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND (Clinton St Rd/SR 33)

AM	NOON	PM	
304	0	394	⇦
0	0	0	↶ 0
0	0	0	↱ 0
424	0	354	→ 1
0	0	0	↷ 0
AM	NOON	PM	

WESTBOUND (Clinton St Rd/SR 33)

PM	NOON	AM	
0	0	0	↰ 0
391	0	303	← 1
0	0	1	↰ 0
0	0	0	↩ 0
354	0	424	⇨
PM	NOON	AM	

NORTHBOUND (Liberty Wy)

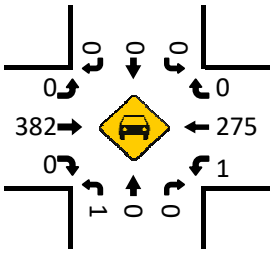
PM	0	0	3	0	0	PM
NOON	0	0	0	0	0	NOON
AM	1	0	1	0	0	AM

CONTROL

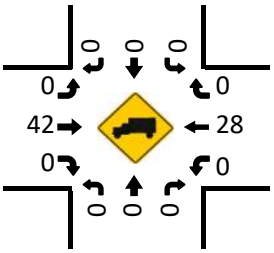
No Control

TEV	729 AM	0 NOON	748 PM
PHF	0.86		0.89

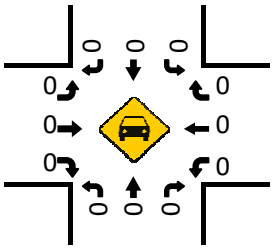
Cars (AM)



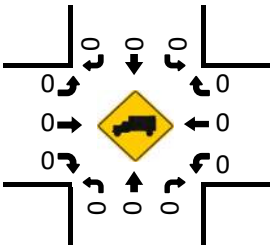
HT (AM)



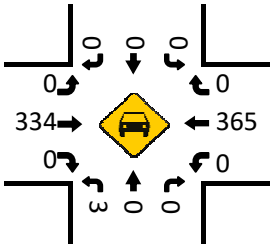
Cars (NOON)



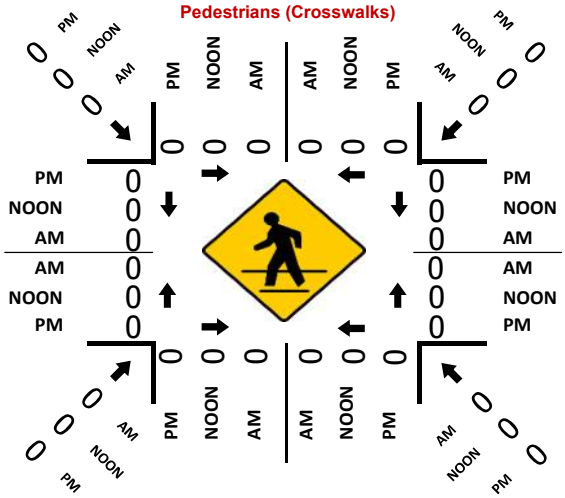
HT (NOON)



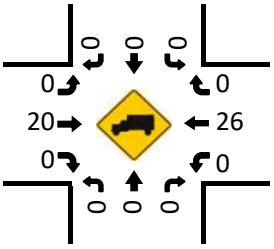
Cars (PM)



Pedestrians (Crosswalks)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: S Lake St/S Lake Rd/SR 19 & Clinton St Rd/SR 33
City: Bergen
Control: Signalized

Project ID: 24-400001-003
Date: 3/5/2024

Data - Total

NS/EW Streets:	S Lake St/S Lake Rd/SR 19				S Lake St/S Lake Rd/SR 19				Clinton St Rd/SR 33				Clinton St Rd/SR 33				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	1	1	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	8	7	0	11	9	6	0	5	47	2	0	1	18	7	0	121
6:15 AM	3	11	9	0	20	11	5	0	4	62	7	0	1	30	3	0	166
6:30 AM	2	4	4	0	18	8	6	0	5	72	3	0	3	52	3	0	180
6:45 AM	3	12	12	0	16	10	4	0	2	57	2	0	1	28	9	0	156
7:00 AM	1	9	7	0	20	13	5	0	5	66	2	0	2	63	5	0	198
7:15 AM	6	16	7	0	22	15	4	0	7	74	3	0	7	58	8	0	227
7:30 AM	5	21	8	0	35	27	6	0	6	73	3	0	2	86	10	0	282
7:45 AM	3	10	6	0	16	16	3	0	11	84	3	0	3	49	5	0	209
8:00 AM	0	8	4	0	20	12	6	0	6	53	3	0	5	52	8	0	177
8:15 AM	2	17	10	0	26	14	9	0	11	60	3	0	4	46	9	0	211
8:30 AM	1	20	2	0	16	8	9	0	5	49	5	0	3	47	9	0	174
8:45 AM	4	17	5	0	11	9	4	0	8	50	3	0	3	56	9	0	179
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	30	153	81	0	231	152	67	0	75	747	39	0	35	585	85	0	2280
APPROACH %'s :	11.36%	57.95%	30.68%	0.00%	51.33%	33.78%	14.89%	0.00%	8.71%	86.76%	4.53%	0.00%	4.96%	82.98%	12.06%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	15	56	28	0	93	71	18	0	29	297	11	0	14	256	28	0	916
PEAK HR FACTOR :	0.625	0.667	0.875	0.000	0.664	0.657	0.750	0.000	0.659	0.884	0.917	0.000	0.500	0.744	0.700	0.000	0.812
	0.728				0.669				0.860				0.760				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	1	1	1	0	1	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:00 PM	5	16	4	0	16	20	9	0	10	38	4	0	10	48	10	0	190
3:15 PM	2	18	3	0	10	18	12	0	11	60	3	0	7	65	11	0	220
3:30 PM	5	24	8	0	13	21	7	0	8	62	5	0	10	59	10	0	232
3:45 PM	2	24	7	0	13	13	10	0	13	66	5	0	8	82	20	0	263
4:00 PM	6	25	8	0	23	19	8	0	11	41	2	0	12	83	11	0	249
4:15 PM	3	27	3	0	13	20	2	0	18	74	5	0	15	59	12	0	251
4:30 PM	1	20	1	0	19	15	8	0	9	58	1	0	9	58	20	0	219
4:45 PM	3	25	4	0	6	15	11	0	2	48	4	0	4	68	11	0	201
5:00 PM	4	21	3	0	14	16	14	0	7	53	5	0	8	75	6	0	226
5:15 PM	2	26	3	0	10	9	5	0	12	60	1	0	10	77	13	0	228
5:30 PM	0	16	4	0	8	10	12	0	11	37	0	0	9	70	10	0	187
5:45 PM	2	11	6	0	17	16	7	0	7	42	0	0	2	52	10	0	172
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	35	253	54	0	162	192	105	0	119	639	35	0	104	796	144	0	2638
APPROACH %'s :	10.23%	73.98%	15.79%	0.00%	35.29%	41.83%	22.88%	0.00%	15.01%	80.58%	4.41%	0.00%	9.96%	76.25%	13.79%	0.00%	
PEAK HR :	03:30 PM - 04:30 PM																TOTAL
PEAK HR VOL :	16	100	26	0	62	73	27	0	50	243	17	0	45	283	53	0	995
PEAK HR FACTOR :	0.667	0.926	0.813	0.000	0.674	0.869	0.675	0.000	0.694	0.821	0.850	0.000	0.750	0.852	0.663	0.000	0.946
	0.910				0.810				0.799				0.866				

Prepared by National Data & Surveying Services

S Lake St/S Lake Rd/SR 19 & Clinton St Rd/SR 33

Peak Hour Turning Movement Count

ID: 24-400001-003
City: Bergen

Day: Tuesday
Date: 3/5/2024

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	6:00 AM - 09:00 AM
NONE	NONE
03:30 PM - 04:30 PM	3:00 PM - 06:00 PM

CONTROL: Signalized

	AM	NOON	PM
TEV	916	0	995
PHF	0.81		0.95

S Lake St/S Lake Rd/SR 19 — SOUTHBOUND

	Left	Thru	Right	U-Turn	Total
AM	18	71	93	0	113
NOON	0	0	0	0	0
PM	27	73	62	0	203

Clinton St Rd/SR 33 — EASTBOUND

	Left	Thru	Right	U-Turn
AM	289	0	326	
NOON	0	0	0	0
PM	29	0	50	1
	297	0	243	1
	11	0	17	1

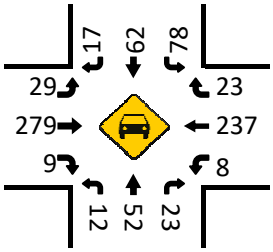
Clinton St Rd/SR 33 — WESTBOUND

	Left	Thru	Right	U-Turn
PM	53	0	28	1
NOON	283	0	256	1
AM	45	0	14	1
	0	0	0	0
	331	0	418	

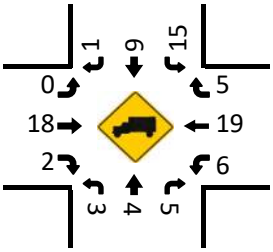
S Lake St/S Lake Rd/SR 19 — NORTHBOUND

	Left	Thru	Right	U-Turn	Total
PM	135	0	16	100	26
NOON	0	0	0	0	0
AM	96	0	15	56	28

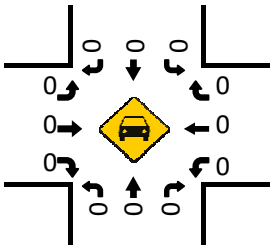
Cars (AM)



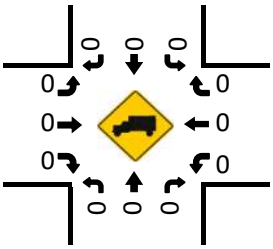
HT (AM)



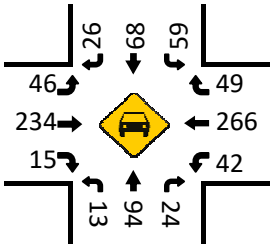
Cars (NOON)



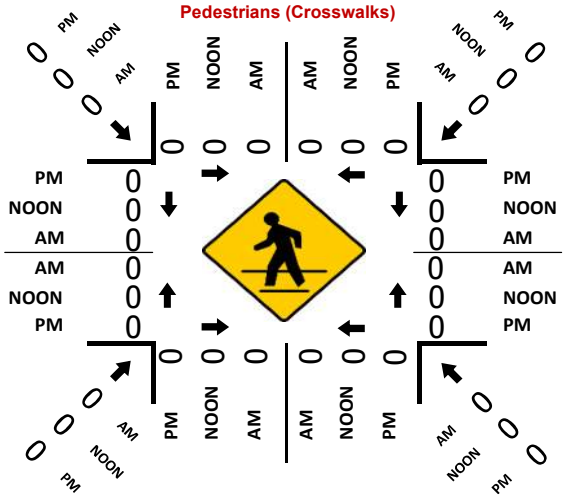
HT (NOON)



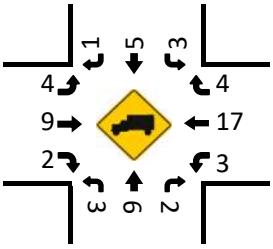
Cars (PM)



Pedestrians (Crosswalks)



HT (PM)



Prepared by National Data & Surveying Services

VOLUME

S Lake Rd/SR 19 S/O Clinton St Rd/SR 33

Day: Thursday
Date: 3/7/2024

City: Bergen
Project #: NY24_400002_001

DAILY TOTALS	NB	SB	EB	WB	Total
	1,294	1,295	0	0	2,590

DAILY TOTALS

15-Minutes Interval

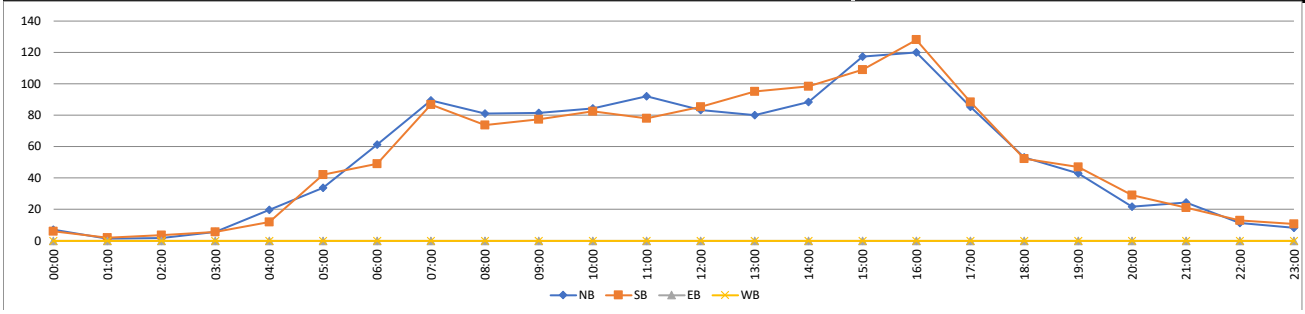
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
0:00	2	2			4	12:00	18	19			37
0:15	2	2			4	12:15	23	20			43
0:30	2	1			3	12:30	22	25			48
0:45	0	1			1	12:45	20	21			41
1:00	1	1			1	13:00	20	19			39
1:15	1	0			1	13:15	20	24			44
1:30	0	0			0	13:30	22	28			51
1:45	0	1			1	13:45	17	23			41
2:00	0	1			1	14:00	19	17			36
2:15	0	1			1	14:15	20	26			46
2:30	1	1			1	14:30	26	25			51
2:45	1	1			2	14:45	22	30			53
3:00	2	2			4	15:00	30	23			53
3:15	1	1			1	15:15	23	29			52
3:30	2	1			3	15:30	30	28			58
3:45	1	2			3	15:45	33	30			63
4:00	2	3			4	16:00	33	33			67
4:15	3	1			4	16:15	32	34			65
4:30	7	4			11	16:30	29	33			61
4:45	8	4			12	16:45	26	28			55
5:00	4	9			13	17:00	23	28			51
5:15	8	10			18	17:15	25	23			48
5:30	8	11			19	17:30	20	19			39
5:45	13	13			26	17:45	17	18			35
6:00	14	13			27	18:00	15	15			30
6:15	16	13			29	18:15	16	16			32
6:30	12	12			24	18:30	11	12			23
6:45	19	12			31	18:45	10	9			19
7:00	20	18			38	19:00	13	13			25
7:15	23	24			47	19:15	10	16			26
7:30	27	23			50	19:30	12	11			23
7:45	19	22			41	19:45	8	8			16
8:00	15	20			35	20:00	5	10			15
8:15	21	15			36	20:15	7	7			14
8:30	22	19			41	20:30	6	7			13
8:45	23	20			43	20:45	4	6			10
9:00	21	22			43	21:00	6	10			15
9:15	21	21			42	21:15	8	4			12
9:30	22	15			36	21:30	5	4			9
9:45	18	20			38	21:45	6	3			9
10:00	25	19			44	22:00	2	4			6
10:15	19	24			43	22:15	4	3			7
10:30	23	16			39	22:30	3	3			6
10:45	18	23			41	22:45	3	3			6
11:00	22	18			40	23:00	1	3			5
11:15	22	21			44	23:15	1	4			5
11:30	22	21			44	23:30	3	2			5
11:45	25	18			43	23:45	3	2			5
TOTALS	558	518	0	0	1077	TOTALS	736	777	0	0	1513
SPLIT %	52%	48%	0%	0%	42%	SPLIT %	49%	51%	0%	0%	58%

Hourly Intervals

TIME		NB	SB	EB	WB	TOTAL
00:00	01:00	7	6			13
01:00	02:00	1	2			3
02:00	03:00	2	4			5
03:00	04:00	6	6			11
04:00	05:00	20	12			32
05:00	06:00	34	42			76
06:00	07:00	61	49			110
07:00	08:00	89	87			176
08:00	09:00	81	74			155
09:00	10:00	81	77			159
10:00	11:00	84	82			167
11:00	12:00	92	78			170
12:00	13:00	83	85			169
13:00	14:00	80	95			175
14:00	15:00	88	98			187
15:00	16:00	117	109			226
16:00	17:00	120	128			248
17:00	18:00	85	88			174
18:00	19:00	53	52			105
19:00	20:00	43	47			90
20:00	21:00	22	29			51
21:00	22:00	24	21			45
22:00	23:00	11	13			24
23:00	00:00	8	11			19

STATISTICS

	NB	SB	EB	WB	TOTAL
Peak Period	00:00	to	12:00		
Volume	558	518			1077
Peak Hour	11:00	7:15			7:00
Peak Volume	92	88			176
Peak Hour Factor	0.908	0.933			0.880
Peak Period	12:00	to	00:00		
Volume	736	777			1513
Peak Hour	15:30	15:45			15:45
Peak Volume	129	130			257
Peak Hour Factor	0.965	0.963			0.963
Peak Period	07:00	to	09:00		
Volume	170	160			331
Peak Hour	7:00	7:15			7:00
Peak Volume	89	88			176
Peak Hour Factor	0.838	0.933			0.880
Peak Period	16:00	to	18:00		
Volume	205	216			422
Peak Hour	16:00	16:00			16:00
Peak Volume	120	128			248
Peak Hour Factor	0.900	0.950			0.930



Prepared by National Data & Surveying Services

SPEED

S Lake Rd/SR 19 S/O Clinton St Rd/SR 33

Day: Thursday
Date: 3/7/2024

City: Bergen
Project #: NY24_400002_001

HOURLY BREAKDOWN

Time	NORTHBOUND														SOUTHBOUND														TOTALS												
	5	15	20	25	30	35	40	45	50	55	60	65	70	Total	5	15	20	25	30	35	40	45	50	55	60	65	70	Total	5	15	20	25	30	35	40	45	50	55	60	65	70	Total
	15	20	25	30	35	40	45	50	55	60	65	70	99		15	20	25	30	35	40	45	50	55	60	65	70	99		15	20	25	30	35	40	45	50	55	60	65	70	99	
0:00	0	0	0	0	0	0	1	2	1	0	0	0	0	**4**	0	0	0	0	0	0	1	2	1	1	0	0	0	**5**	0	0	0	0	0	0	2	4	2	1	0	0	0	**9**
1:00	0	0	0	0	0	1	0	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	0	1	0	0	0	0	**1**	0	0	0	0	0	0	1	0	0	1	0	0	0	**2**
2:00	0	0	0	0	0	0	0	0	1	0	0	0	0	**1**	0	0	0	0	0	0	1	0	0	0	0	0	0	**1**	0	0	0	0	0	0	0	1	0	1	0	0	0	**2**
3:00	0	0	0	0	0	0	1	1	1	0	0	0	0	**3**	0	0	0	0	0	0	0	2	1	0	0	0	0	**3**	0	0	0	0	0	0	0	1	3	2	0	0	0	**6**
4:00	0	0	0	0	0	2	4	4	5	3	1	0	0	**19**	0	0	0	0	0	0	4	4	1	1	0	0	0	**10**	0	0	0	0	0	0	2	8	8	6	4	1	0	**29**
5:00	0	0	0	0	0	4	6	11	10	2	0	0	0	**33**	0	0	0	0	1	3	8	13	6	6	4	0	0	**41**	0	0	0	0	1	7	14	24	16	8	4	0	0	**74**
6:00	0	0	0	0	0	2	11	21	21	4	1	0	0	**60**	0	0	1	0	1	1	8	16	12	8	2	0	0	**49**	0	0	1	0	1	3	19	37	33	12	3	0	0	**109**
7:00	0	0	0	1	0	3	13	36	25	9	0	0	0	**87**	0	0	0	0	2	4	14	27	25	9	4	1	0	**86**	0	0	0	1	2	7	27	63	50	18	4	1	0	**173**
8:00	0	1	0	1	0	4	15	28	25	5	2	0	0	**81**	0	0	0	0	1	7	12	22	20	10	2	0	0	**74**	0	1	0	1	1	11	27	50	45	15	4	0	0	**155**
9:00	0	0	0	0	0	1	17	29	22	7	0	0	0	**76**	0	0	0	0	0	5	17	25	19	6	2	0	0	**74**	0	0	0	0	0	6	34	54	41	13	2	0	0	**150**
10:00	0	0	0	0	1	6	16	35	19	6	0	0	0	**83**	0	0	0	1	1	9	16	25	22	7	0	0	0	**81**	0	0	0	1	2	15	32	60	41	13	0	0	0	**164**
11:00	0	0	0	0	1	7	18	31	29	7	1	0	0	**94**	0	0	0	0	3	6	14	26	17	9	0	0	0	**75**	0	0	0	0	4	13	32	57	46	16	1	0	0	**169**
12:00	0	0	0	0	1	4	19	33	18	6	0	0	0	**81**	0	0	0	0	2	8	16	31	21	5	1	0	0	**84**	0	0	0	0	3	12	35	64	39	11	1	0	0	**165**
13:00	0	0	0	1	0	7	15	28	21	7	1	0	0	**80**	0	0	0	0	2	6	23	30	22	8	2	0	0	**93**	0	0	0	1	2	13	38	58	43	15	3	0	0	**173**
14:00	0	0	0	0	1	5	15	40	22	6	0	0	0	**89**	0	0	1	0	3	10	24	34	18	6	3	0	0	**99**	0	0	1	0	4	15	39	74	40	12	3	0	0	**188**
15:00	1	1	0	2	1	10	26	39	27	9	1	0	0	**117**	0	0	0	0	3	4	23	32	30	12	2	0	0	**106**	1	1	0	2	4	14	49	71	57	21	3	0	0	**223**
16:00	0	0	0	0	0	7	24	38	35	12	1	0	0	**117**	0	0	0	1	1	7	26	47	31	11	1	0	0	**125**	0	0	0	1	1	14	50	85	66	23	2	0	0	**242**
17:00	0	0	0	0	0	2	15	34	25	8	1	0	0	**85**	0	0	0	0	4	4	13	32	24	8	0	0	0	**85**	0	0	0	0	4	6	28	66	49	16	1	0	0	**170**
18:00	0	0	0	0	0	3	12	16	16	4	0	0	0	**51**	0	0	0	1	0	5	14	19	11	2	0	0	0	**52**	0	0	0	1	0	8	26	35	27	6	0	0	0	**103**
19:00	0	0	0	0	2	4	13	14	8	1	0	0	0	**42**	0	0	0	0	1	5	14	17	5	2	0	0	0	**44**	0	0	0	0	3	9	27	31	13	3	0	0	0	**86**
20:00	0	0	0	0	0	0	6	8	3	1	0	0	0	**18**	0	0	0	0	0	3	9	9	4	0	0	0	0	**25**	0	0	0	0	0	3	15	17	7	1	0	0	0	**43**
21:00	0	0	0	0	0	0	9	10	4	0	0	0	0	**23**	0	0	0	0	0	3	5	8	4	2	0	0	0	**22**	0	0	0	0	0	3	14	18	8	2	0	0	0	**45**
22:00	0	0	0	0	0	2	4	2	2	0	0	0	0	**10**	0	0	0	0	0	2	1	6	2	0	0	0	0	**11**	0	0	0	0	0	4	5	8	4	0	0	0	0	**21**
23:00	0	0	0	0	0	0	1	3	3	0	0	0	0	**7**	0	0	0	0	0	0	0	3	3	2	1	0	0	**9**	0	0	0	0	0	0	1	6	6	2	1	0	0	**16**
Totals	**1**	**2**	**0**	**5**	**7**	**74**	**261**	**463**	**343**	**97**	**9**	**0**	**0**	**1,262**	**0**	**0**	**2**	**3**	**25**	**92**	**263**	**430**	**300**	**115**	**24**	**1**	**0**	**1,255**	**1**	**2**	**2**	**8**	**32**	**166**	**524**	**893**	**643**	**212**	**33**	**1**	**0**	**2,517**
% of Totals	0%	0%		0%	1%	6%	21%	37%	27%	8%	1%			100%			0%	0%	2%	7%	21%	34%	24%	9%	2%	0%		100%	0%	0%	0%	0%	1%	7%	21%	35%	26%	8%	1%	0%		100%

STATISTICS

00:00 - 12:00	0	1	0	2	2	30	102	198	159	43	5	0	0	542	0	0	1	1	9	35	95	162	125	57	14	1	0	500	0	1	1	3	12	67	202	363	289	99	23	1	0	1061
%	0%	0%	0%	0%	0%	2%	8%	16%	13%	3%	0%	0%	0%	43%	0%	0%	0%	0%	1%	3%	8%	13%	10%	5%	1%	0%	0%	40%	0%	0%	0%	0%	1%	5%	16%	29%	23%	8%	2%	0%	0%	84%
Peak Hour	0:00	7:30	0:00	6:15	11:30	10:30	11:45	6:45	11:00	7:00	7:45	0:00	0:00	11:00	0:00	0:00	6:00	9:30	10:45	10:00	8:30	11:45	7:00	6:30	5:15	6:45	0:00	7:15	0:00	7:30	6:00	6:15	10:45	10:30	8:45	7:00	7:00	7:00	5:15	6:45	0:00	7:00
Peak Volume	0	1	0	1	2	8	20	39	29	9	2	0	0	94	0	0	1	1	4	9	19	29	25	10	5	1	0	87	0	1	1	1	4	16	38	63	50	18	6	1	0	174
12:00 - 24:00	1	1	0	3	5	44	159	265	184	54	4	0	0	720	0	0	1	2	16	57	168	268	175	58	10	0	0	755	1	2	2	6	25	99	330	533	362	115	18	0	0	1493
%	0%	0%	0%	0%	0%	3%	13%	21%	15%	4%	0%	0%	0%	57%	0%	0%	0%	0%	1%	5%	13%	21%	14%	5%	1%	0%	0%	60%	0%	0%	0%	0%	2%	8%	26%	42%	29%	9%	1%	0%	0%	118%
Peak Hour	14:15	14:45	12:00	14:30	18:45	15:00	15:30	14:00	15:30	15:30	15:15	12:00	12:00	15:30	12:00	12:00	13:45	15:15	14:30	14:00	15:30	16:00	15:30	15:45	13:15	12:00	12:00	15:45	14:15	14:45	13:45	14:30	14:45	15:45	15:30	16:00	15:30	15:45	15:30	12:00	12:00	15:45
Peak Volume	1	1	0	2	2	10	27	40	36	13	2	0	0	127	0	0	1	1	4	10	28	47	33	14	3	0	0	125	1	1	1	2	6	16	56	86	71	27	5	0	0	257
07:00 - 09:00	0	1	0	2	0	7	28	64	50	14	2	0	0	168	0	0	0	0	3	11	26	49	45	19	6	1	0	160	0	1	0	2	3	18	54	113	96	32	7	1	0	327
%	0%	0%	0%	0%	0%	1%	2%	5%	4%	1%	0%	0%	0%	13%	0%	0%	0%	0%	0%	1%	2%	4%	4%	2%	0%	0%	0%	13%	0%	0%	0%	0%	0%	1%	4%	9%	8%	3%	1%	0%	0%	26%
Peak Hour	7:00	7:30	7:00	7:00	7:00	7:15	8:00	7:00	7:00	7:00	7:45	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:30	7:00	7:15	7:00	7:15	7:00	7:00	7:00	7:15	7:00	7:30	7:00	7:00	7:00	7:15	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00
Peak Volume	0	1	0	1	0	4	15	36	25	9	2	0	0	87	0	0	0	0	2	7	14	28	25	10	4	1	0	87	0	1	0	1	2	11	27	63	50	18	4	1	0	174
16:00 - 18:00	0	0	0	0	0	9	39	72	60	20	2	0	0	202	0	0	0	1	5	11	39	79	55	19	1	0	0	210	0	0	0	1	6	20	79	153	116	40	4	0	0	419
%	0%	0%	0%	0%	0%	1%	3%	6%	5%	2%	0%	0%	0%	16%	0%	0%	0%	0%	0%	1%	3%	6%	4%	2%	0%	0%	0%	17%	0%	0%	0%	0%	0%	2%	6%	12%	9%	3%	0%	0%	0%	33%
Peak Hour	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:45	16:00	16:00	16:00	16:00	16:15	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:45	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00
Peak Volume	0	0	0	0	0	7	24	38	35	12	1	0	0	117	0	0	0	1	4	7	26	47	31	12	1	0	0	125	0	0	0	1	4	14	50	86	68	23	3	0	0	247

Direction	Percentiles					
	15th	50th	Average	85th	95th	ADT
NORTHBOUND	42	48	48	54	57	1262
SOUTHBOUND	41	48	48	54	58	1255
TOTALS	42	48	48	54	58	2517

Site 410065000000

410065 - NY19 from RT 33 to TOWNLINE RD NY262/CR13
City: Bergen **County:** Genesee
Route number: 19
Functional class: 4R - Minor Arterial (Rural)

AADT
6,105
N: 3,085
S: 3,020

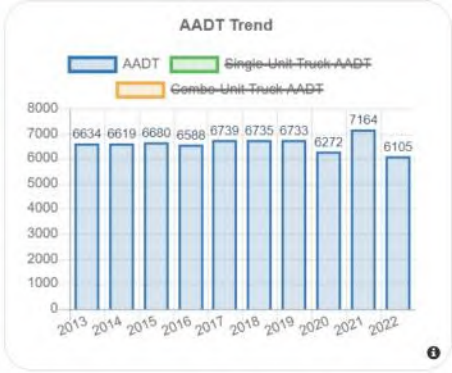
Site Data

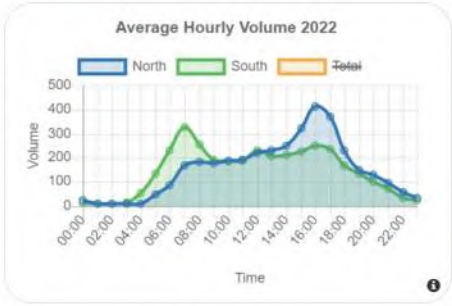
Annual Statistics

Data Item	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Statistics type	Estimated	Estimated	Actual	Estimated	Actual	Estimated	Actual	Estimated	Estimated	**Actual**
AADT	6,634	6,619	6,680	6,588	6,739	6,735	6,733	6,272	7,164	**6,105**
Single-Unit Truck AADT	386	385	378	374	382	382	491	463	528	**372**
Combo-Unit Truck AADT	200	200	304	301	308	307	209	196	224	**258**
K-Factor	-	-	0.089	0.089	0.089	0.089	0.088	0.088	0.088	**0.092**
D-Factor	-	-	0.624	0.624	0.582	0.582	0.601	0.601	0.601	**0.612**
Speed 85th Percentile	-	-	39.6	39.6	39.6	39.6	41.0	41.0	41.0	**39.9**

Count History

Year	Month	Count type	Weekend Duration	Workweek Duration	Duratic
2022	July	Class	5 hours	72 hours	83 hou
2022	April	Volume	9 hours	56 hours	71 hou
2019	April	Class	0 hours	89 hours	89 hou
2017	May	Volume	0 hours	78 hours	78 hou
2015	October	Class	0 hours	74 hours	75 hou





Vehicle Classification

1. Motorcycles 2 axles, 2 or 3 wheels.	47	1.02%
2. Passenger cars 2 axles. Can have 1- or 2-axle trailers.	3,040	66.49%
3. Pickups, panels, vans 2-axle, 4-tire single units. Can have 1- or 2-axle trailers.	1,019	22.29%
Passenger Vehicles	4,105	89.80%
4. Buses 2- or 3-axle, full length.	36	0.79%
5. Single-unit trucks 2-axle, 6-tire, (dual rear tires), single-unit trucks.	183	4.00%
6. Single-unit trucks 3-axle, single-unit trucks.	49	1.08%
7. Single-unit trucks 4 or more axle, single-unit trucks.	6	0.14%
Medium Weight Trucks	274	6.00%
8. Single-trailer trucks 3- or 4-axle, single-trailer trucks.	52	1.14%
9. Single-trailer trucks 5-axle, single-trailer trucks.	106	2.32%
10. Single-trailer trucks 6 or more axle, single-trailer trucks.	29	0.63%
11. Multi-trailer trucks 5 or less axle, multi-trailer trucks.	0	0%
12. Multi-trailer trucks 6-axle, multi-trailer trucks.	0	0%
13. Multi-trailer trucks 7 or more axle, multi-trailer trucks.	5	0.12%
Heavy Weight Trucks	192	4.20%

Site 411808000000

411808 - APPLE TREE AVE from S LAKE AVE to VILLAGE LINE
City: Bergen **County:** Genesee
Functional class: 7R - Local (Rural)

AADT
1,860
E: 857
W: 1,003

Site Data

Annual Statistics

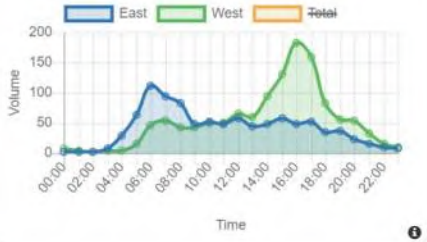
Data Item	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Statistics type	-	-	-	-	-	-	-	Actual	Estimated	**Estimated**
AADT	-	-	-	-	-	-	-	1,737	1,860	**1,860**
Single-Unit Truck AADT	-	-	-	-	-	-	-	79	112	**111**
Combo-Unit Truck AADT	-	-	-	-	-	-	-	8	23	**31**
K-Factor	-	-	-	-	-	-	-	0.097	0.097	**0.097**
D-Factor	-	-	-	-	-	-	-	0.720	0.720	**0.720**
DHV	-	-	-	-	-	-	-	168	180	**180**
DDHV	-	-	-	-	-	-	-	121	130	**130**
Truck	-	-	-	-	-	-	-	87	135	**142**

Count History

Year	Month	Count type	Weekend Duration	Workweek Duration	Durat
2023	August	Class	0 hours	71 hours	71 ho
2020	September	Volume	0 hours	95 hours	95 ho

AADT Trend

Average Hourly Volume 2023



Daily Volume 2023

Vehicle Classification

1. Motorcycles 2 axles, 2 or 3 wheels.		11	0.66%
2. Passenger cars 2 axles. Can have 1- or 2-axle trailers.		1,174	72.51%
3. Pickups, panels, vans 2-axle, 4-tire single units. Can have 1- or 2-axle trailers.		401	24.77%
Passenger Vehicles		1,586	97.95%
4. Buses 2- or 3-axle, full length.		1	0.08%
5. Single-unit trucks 2-axle, 6-tire, (dual rear tires), single-unit trucks.		27	1.65%
6. Single-unit trucks 3-axle, single-unit trucks.		1	0.08%
7. Single-unit trucks 4 or more axle, single-unit trucks.		0	0%
Medium Weight Trucks		29	1.81%
8. Single-trailer trucks 3- or 4-axle, single-trailer trucks.		3	0.19%
9. Single-trailer trucks 5-axle, single-trailer trucks.		1	0.06%
10. Single-trailer trucks 6 or more axle, single-trailer trucks.		0	0%
11. Multi-trailer trucks 5 or less axle, multi-trailer trucks.		0	0%
12. Multi-trailer trucks 6-axle, multi-trailer trucks.		0	0%
13. Multi-trailer trucks 7 or more axle, multi-trailer trucks.		0	0%
Heavy Weight Trucks		4	0.25%

Site 410427000000

410427 - NY33 from RT 237 to RT 19
City: Bergen **County:** Genesee
Route number: 33
Functional class: 4R - Minor Arterial (Rural)

AADT
7,244
E: 3,560
W: 3,684

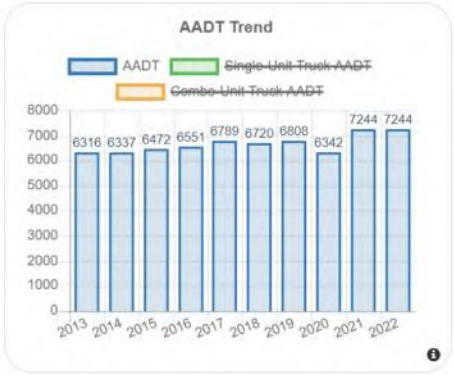
Site Data

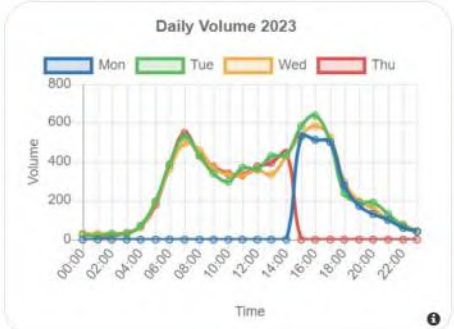
Annual Statistics

Data Item	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Statistics type	-	Actual	Estimated	Estimated	Actual	Estimated	Actual	Estimated	Estimated	**Estimated**
AADT	6,316	6,337	6,472	6,551	6,789	6,720	6,808	6,342	7,244	**7,244**
Single-Unit Truck AADT	140	141	144	145	151	149	291	272	311	**311**
Combo-Unit Truck AADT	148	148	151	153	159	157	214	200	229	**229**
K-Factor	-	0.089	0.089	0.089	0.090	0.090	0.085	0.085	0.085	**0.085**
D-Factor	-	0.546	0.546	0.546	0.580	0.580	0.586	0.586	0.586	**0.586**
Speed 85th Percentile	-	-	-	-	-	-	57.8	57.8	57.8	**57.8**

Count History

Year	Month	Count type	Weekend Duration	Workweek Duration	Duratic
2023	October	Class	0 hours	81 hours	81 hou
2019	July	Class	7 hours	102 hours	121 ho
2017	May	Volume	0 hours	60 hours	62 hou
2014	July	Volume	0 hours	81 hours	81 hou





Vehicle Classification

1. Motorcycles 2 axles, 2 or 3 wheels.	1	0.01%
2. Passenger cars 2 axles. Can have 1- or 2-axle trailers.	3,398	70.66%
3. Pickups, panels, vans 2-axle, 4-tire single units. Can have 1- or 2-axle trailers.	1,025	21.32%
Passenger Vehicles	4,424	91.99%
4. Buses 2- or 3-axle, full length.	13	0.27%
5. Single-unit trucks 2-axle, 6-tire, (dual rear tires), single-unit trucks.	128	2.66%
6. Single-unit trucks 3-axle, single-unit trucks.	41	0.85%
7. Single-unit trucks 4 or more axle, single-unit trucks.	7	0.14%
Medium Weight Trucks	188	3.91%
8. Single-trailer trucks 3- or 4-axle, single-trailer trucks.	22	0.45%
9. Single-trailer trucks 5-axle, single-trailer trucks.	128	2.67%
10. Single-trailer trucks 6 or more axle, single-trailer trucks.	47	0.97%
11. Multi-trailer trucks 5 or less axle, multi-trailer trucks.	1	0.01%
12. Multi-trailer trucks 6-axle, multi-trailer trucks.	0	0%
13. Multi-trailer trucks 7 or more axle, multi-trailer trucks.	0	0%
Heavy Weight Trucks	197	4.10%

Site 410428000000

410428 - NY33 from RT 19 to RT 33A
City: Bergen **County:** Genesee
Route number: 33
Functional class: 4R - Minor Arterial (Rural)

AADT
9,962
E: 4,863
W: 5,099

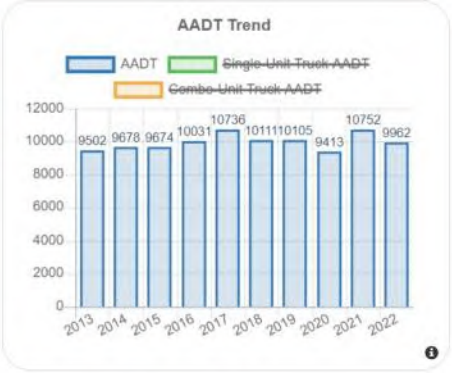
Site Data

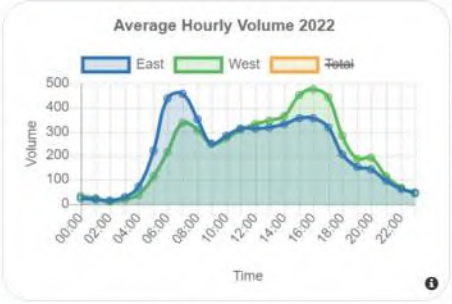
Annual Statistics

Data Item	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Statistics type	Estimated	Estimated	Actual	Estimated	Actual	Estimated	Actual	Estimated	Estimated	**Actual**
AADT	9,502	9,678	9,674	10,031	10,736	10,111	10,105	9,413	10,752	**9,962**
Single-Unit Truck AADT	675	687	434	455	487	458	656	613	700	**649**
Combo-Unit Truck AADT	548	558	283	297	318	299	336	314	359	**332**
K-Factor	-	-	0.091	0.091	0.085	0.085	0.091	0.091	0.091	**0.088**
D-Factor	-	-	0.585	0.585	0.594	0.594	0.566	0.566	0.566	**0.583**
Speed 85th Percentile	-	-	53.7	53.7	53.7	53.7	55.5	55.5	55.5	**55.5**

Count History

Year	Month	Count type	Weekend Duration	Workweek Duration	Durati
2022	August	Volume	15 hours	74 hours	95 hou
2019	April	Class	0 hours	89 hours	89 hou
2017	May	Volume	0 hours	60 hours	62 hou
2015	November	Class	0 hours	90 hours	90 hou





Vehicle Classification

1. Motorcycles 2 axles, 2 or 3 wheels.		29	0.37%
2. Passenger cars 2 axles. Can have 1- or 2-axle trailers.		5,652	72.83%
3. Pickups, panels, vans 2-axle, 4-tire single units. Can have 1- or 2-axle trailers.		1,342	17.29%
Passenger Vehicles		7,023	90.49%
4. Buses 2- or 3-axle, full length.		92	1.18%
5. Single-unit trucks 2-axle, 6-tire, (dual rear tires), single-unit trucks.		249	3.20%
6. Single-unit trucks 3-axle, single-unit trucks.		104	1.34%
7. Single-unit trucks 4 or more axle, single-unit trucks.		36	0.46%
Medium Weight Trucks		480	6.18%
8. Single-trailer trucks 3- or 4-axle, single-trailer trucks.		58	0.75%
9. Single-trailer trucks 5-axle, single-trailer trucks.		166	2.14%
10. Single-trailer trucks 6 or more axle, single-trailer trucks.		25	0.32%
11. Multi-trailer trucks 5 or less axle, multi-trailer trucks.		1	0.01%
12. Multi-trailer trucks 6-axle, multi-trailer trucks.		0	0.00%
13. Multi-trailer trucks 7 or more axle, multi-trailer trucks.		8	0.10%
Heavy Weight Trucks		258	3.32%

APPENDIX B

Trip Generation Calculations and Distribution

Calculated ITE Trip Generations

Assumption of Land Use

Land Use	Area	
140	163,458	SF
715	36,283	SF

163,458 SF Manufacturing
36,283 SF Office Space

120 Employees 1st shift
20 Employees 2nd shift

110 Manufacturing Employees
30 Office Employees

1st shift	90	Manufacturing
6:00-3:30	30	Office
2nd shift	20	Manufacturing
3:30-3:15	0	Office

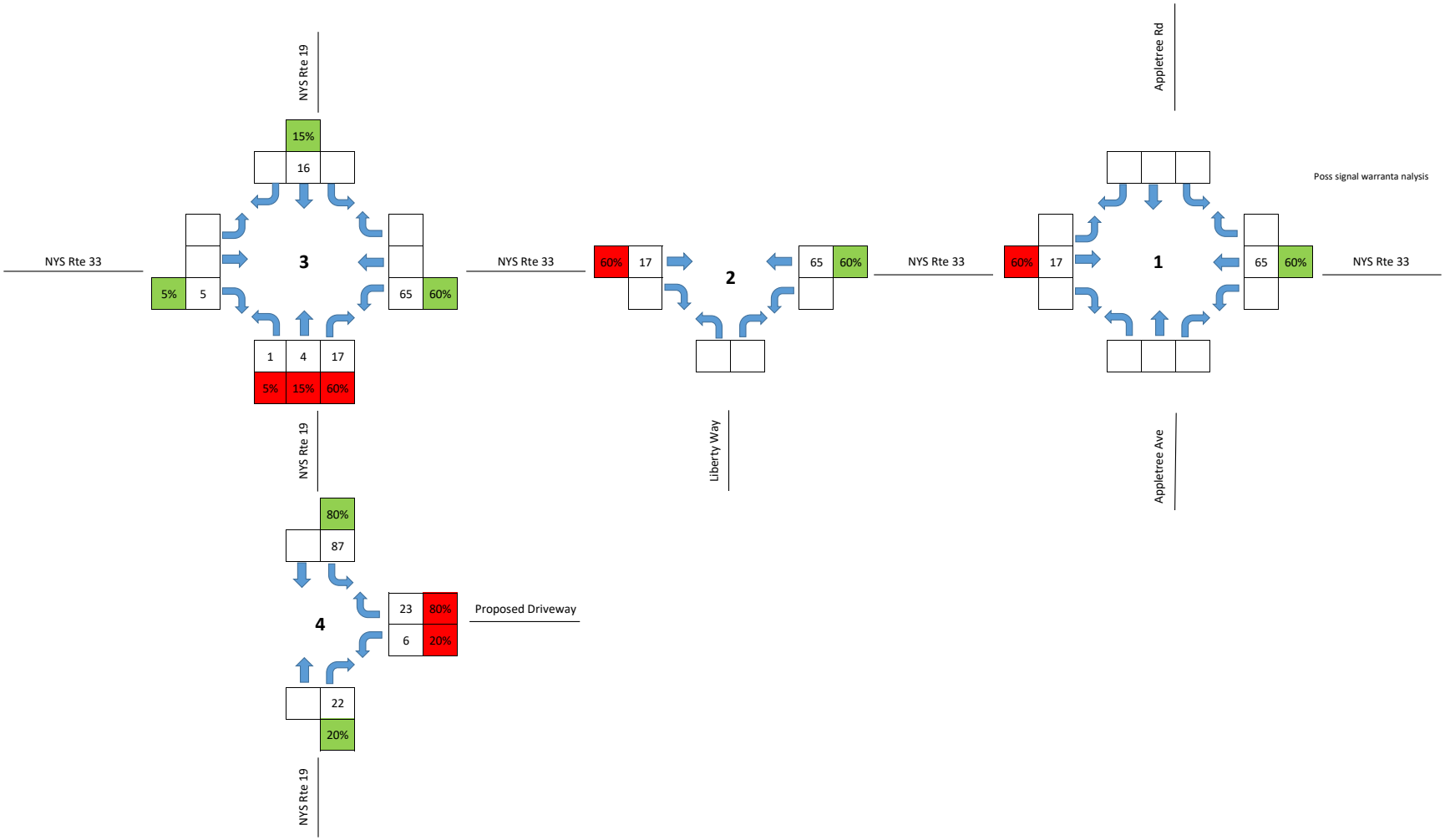
AM Peak Hour	
Enter	109
Exit	29
PM Peak Hour	
Enter	57
Exit	147

ITE Code	ITE Description	Vehicle Trip Ends vs:	Variable	On a:		Entering	Exiting	Average Rate Calculations: Average Rate	Entering	Exiting	Total	Fitted Curve Equation Calculations: Fitted Curve Equation					Entering	Exiting	Total
140	Manufacturing General Urban/Suburban	1000 Sq. Ft. GFA	**163,458**	Weekday	General	50%	50%	4.75	388	388	776	T =	3.77	(X)	+	201.98	409	409	818
				Weekday	PEAK HOUR - 7 to 9 AM of adjacent street traffic	76%	24%	0.68	84	27	111	T =	0.61	(X)	+	9.54	83	26	109
				Weekday	PEAK HOUR - 4 to 6 PM of adjacent street traffic	31%	69%	0.74	37	83	120	T =	0.87	(X)	-	17.50	50	110	160
				Weekday	AM Peak Hour of Generator	73%	27%	0.80	95	35	130	T =	0.65	(X)	+	27.27	97	36	133
				Weekday	PM Peak Hour of Generator	42%	58%	0.80	55	76	131	T =	0.69	(X)	+	20.74	56	77	133
140	Manufacturing General Urban/Suburban	Employees	110	Weekday	General	50%	50%	2.51	0	0	0	Ln(T) =	0.89	Ln(X)	+	1.68	176	176	352
				Weekday	PEAK HOUR - 7 to 9 AM of adjacent street traffic	73%	27%	0.32	0	0	0	T =	0.24	(X)	+	29.47	41	15	56
				Weekday	PEAK HOUR - 4 to 6 PM of adjacent street traffic	37%	63%	0.31	0	0	0	T =	0.21	(X)	-	33.45	21	36	57
				Weekday	AM Peak Hour of Generator	83%	17%	0.38	0	0	0	T =	0.30	(X)	+	32.68	55	11	66
				Weekday	PM Peak Hour of Generator	39%	61%	0.40	0	0	0	T =	0.36	(X)	+	18.55	23	35	58
				Saturday	General	50%	50%	0.83	0	0	0	T =	0.30	(X)	+	368.17	184	184	368
				Saturday	Peak Hour of Generator	52%	48%	0.10	0	0	0	Ln(T) =	0.32	Ln(X)	+	2.22	22	20	42
				Sunday	General	50%	50%	0.55	0	0	0	Ln(T) =	0.28	Ln(X)	+	4.21	126	126	252
715	Single Tenant Office Building	1000 Sq. Ft. GFA	**36,283**	Weekday	General	50%	50%	13.07	237	237	474	T =	8.04	(X)	+	550.49	421	421	842
				Weekday	PEAK HOUR - 7 to 9 AM of adjacent street traffic	89%	11%	1.85	60	7	67	T =	1.89	(X)	-	7.67	68	8	76
				Weekday	PEAK HOUR - 4 to 6 PM of adjacent street traffic	15%	85%	1.76	10	54	64	T =	1.72	(X)	+	7.89	11	60	71
715	Single Tenant Office Building	Employees	30	Weekday	General	50%	50%	3.85	0	0	0	T =	2.21	(X)	+	608.91	338	338	676
				Weekday	PEAK HOUR - 7 to 9 AM of adjacent street traffic	89%	11%	0.54	0	0	0	T =	0.52	(X)	+	13.46	26	3	29
				Weekday	PEAK HOUR - 4 to 6 PM of adjacent street traffic	15%	85%	0.51	0	0	0	T =	0.46	(X)	+	29.63	7	37	44

Site Traffic Distribution

AM Peak Hour

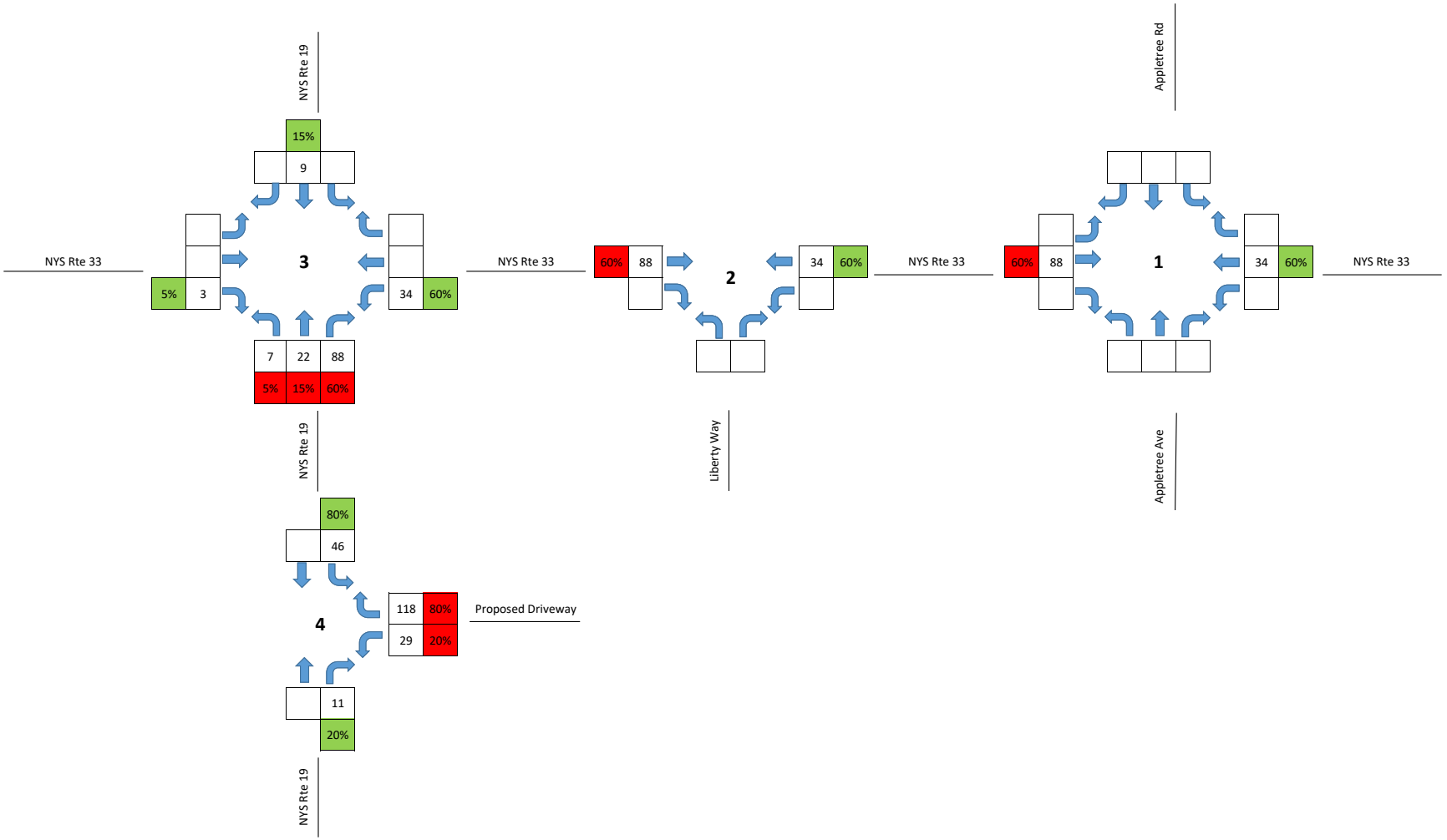
Vehicles Entering	109
Vehciles Exiting	29



Site Traffic Distribution

PM Peak Hour

Vehicles Entering	57
Vehciles Exiting	147



Land Use: 140
Manufacturing

Description

A manufacturing facility is an area where the primary activity is the conversion of raw materials or parts into finished products. Size and type of activity may vary substantially from one facility to another. In addition to the actual production of goods, a manufacturing facility typically has an office and may provide space for warehouse, research, and associated functions. General light industrial (Land Use 110) and industrial park (Land Use 130) are related uses.

Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Minnesota, Missouri, New Jersey, New York, Oregon, Pennsylvania, South Dakota, Texas, Vermont, Washington, and West Virginia.

Source Numbers

177, 179, 184, 241, 357, 384, 418, 443, 583, 598, 611, 728, 747, 875, 879, 940, 969, 1067, 1068, 1082

Manufacturing
(140)

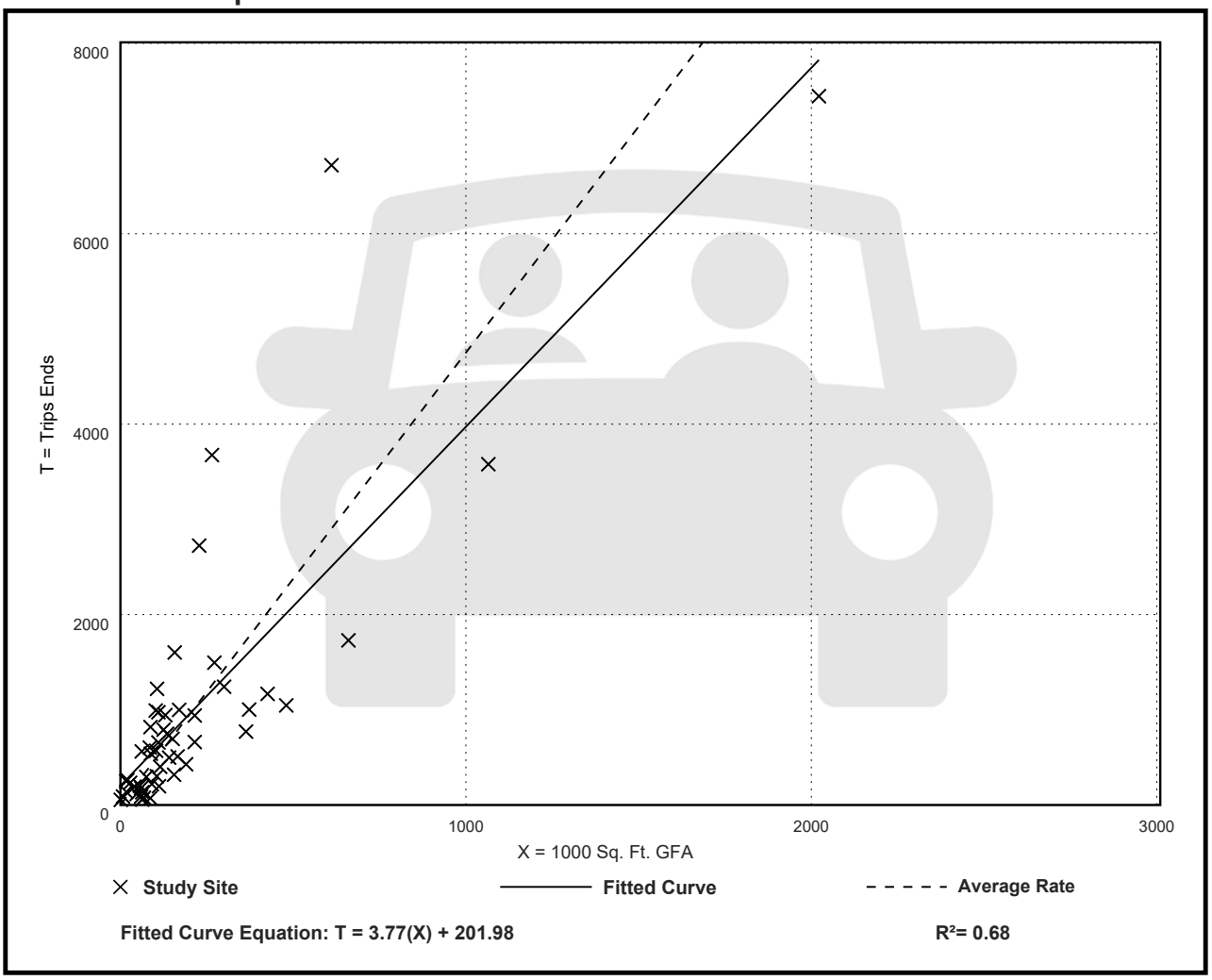
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 53
Avg. 1000 Sq. Ft. GFA: 208
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
4.75	0.83 - 49.50	3.20

Data Plot and Equation



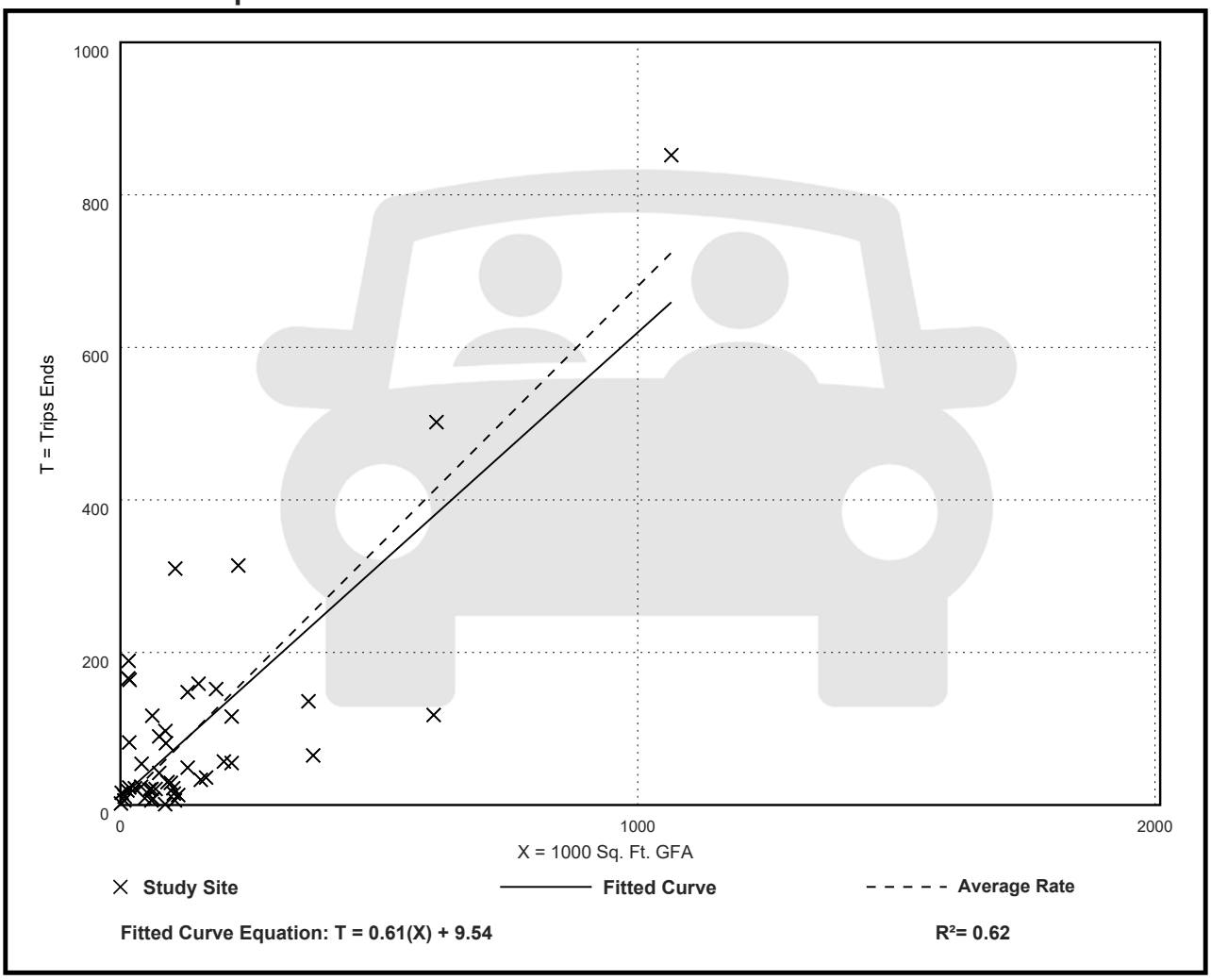
Manufacturing
(140)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 48
Avg. 1000 Sq. Ft. GFA: 138
Directional Distribution: 76% entering, 24% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.68	0.01 - 11.93	1.03

Data Plot and Equation



Fitted Curve Equation: T = 0.61(X) + 9.54

R^2= 0.62

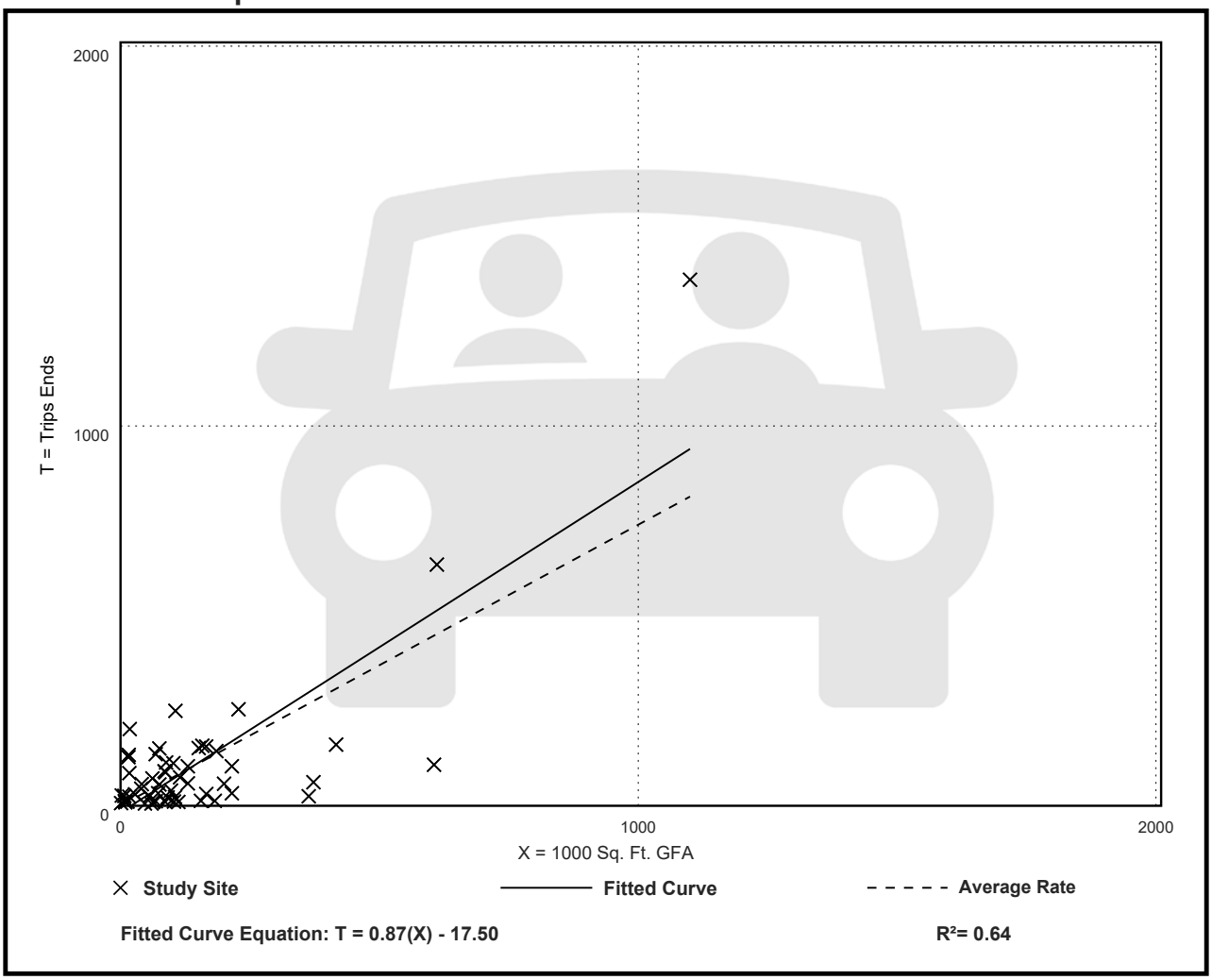
Manufacturing
(140)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 55
Avg. 1000 Sq. Ft. GFA: 142
Directional Distribution: 31% entering, 69% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.74	0.07 - 11.37	0.93

Data Plot and Equation



Manufacturing
(140)

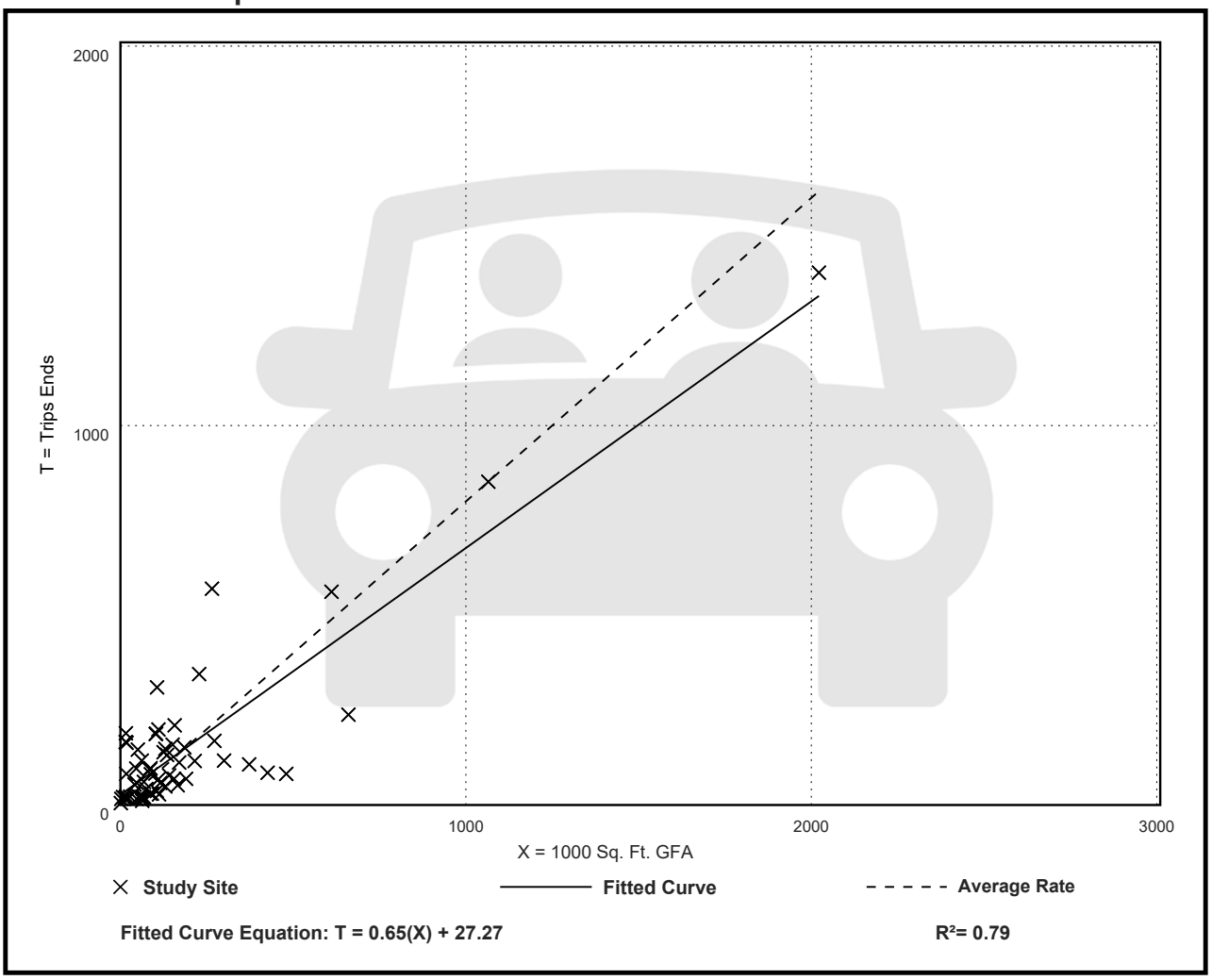
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
AM Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 62
Avg. 1000 Sq. Ft. GFA: 178
Directional Distribution: 73% entering, 27% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.80	0.17 - 11.93	0.87

Data Plot and Equation



Fitted Curve Equation: T = 0.65(X) + 27.27

R^2= 0.79

Manufacturing
(140)

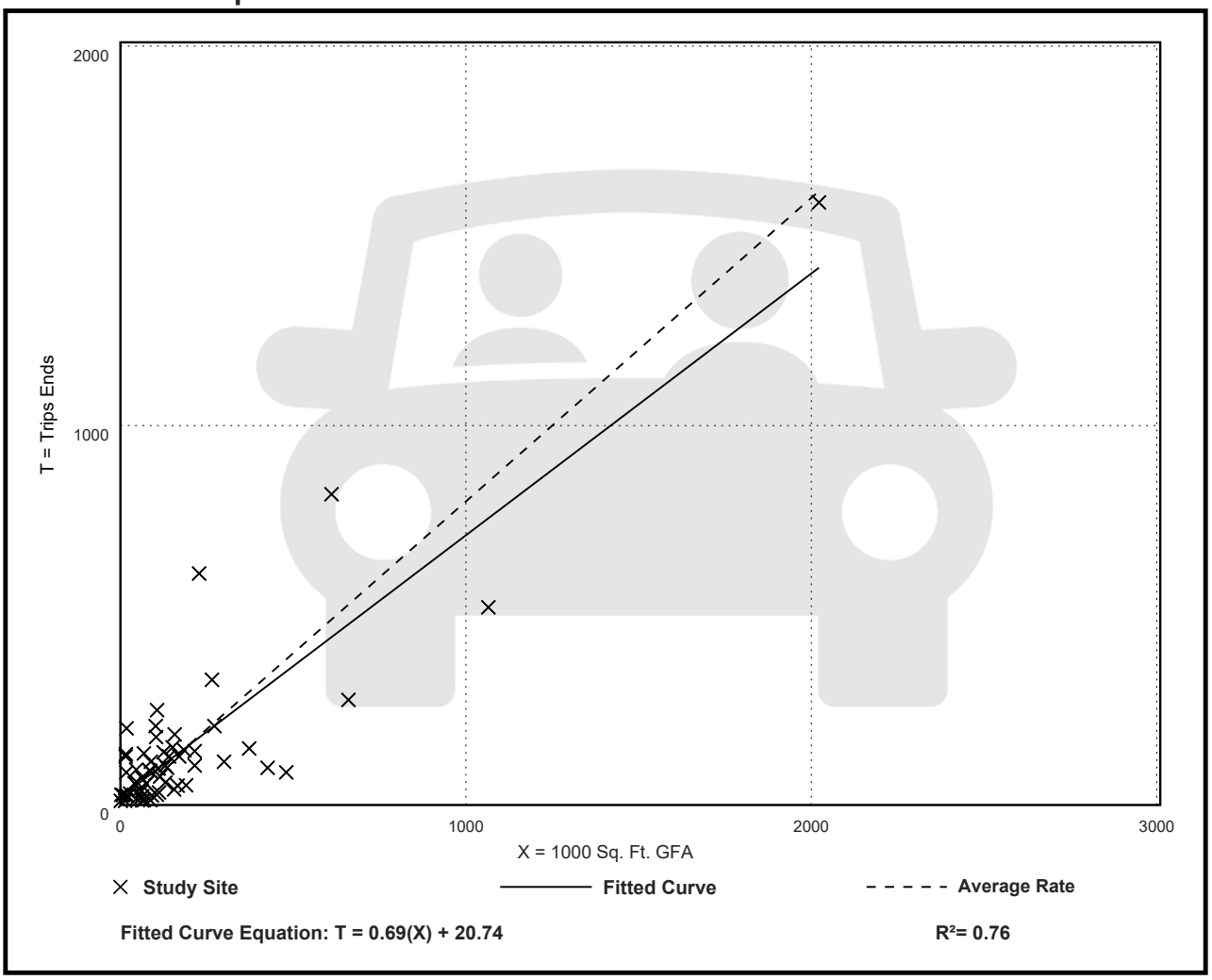
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
PM Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 62
Avg. 1000 Sq. Ft. GFA: 180
Directional Distribution: 42% entering, 58% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.80	0.15 - 11.37	0.82

Data Plot and Equation



Fitted Curve Equation: T = 0.69(X) + 20.74

R^2= 0.76

Manufacturing
(140)

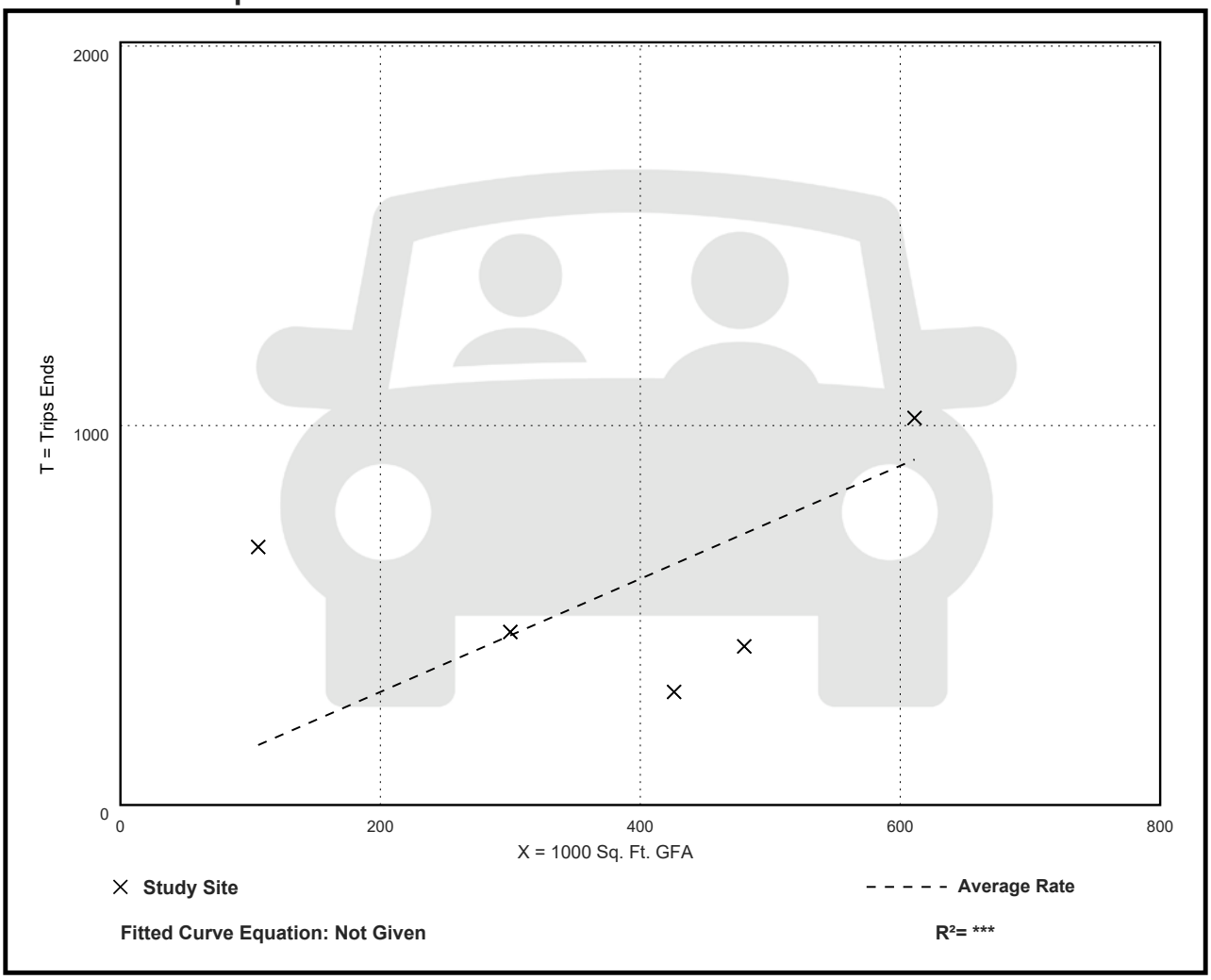
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Saturday

Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. 1000 Sq. Ft. GFA: 385
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.49	0.70 - 6.42	1.41

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ***

Manufacturing
(140)

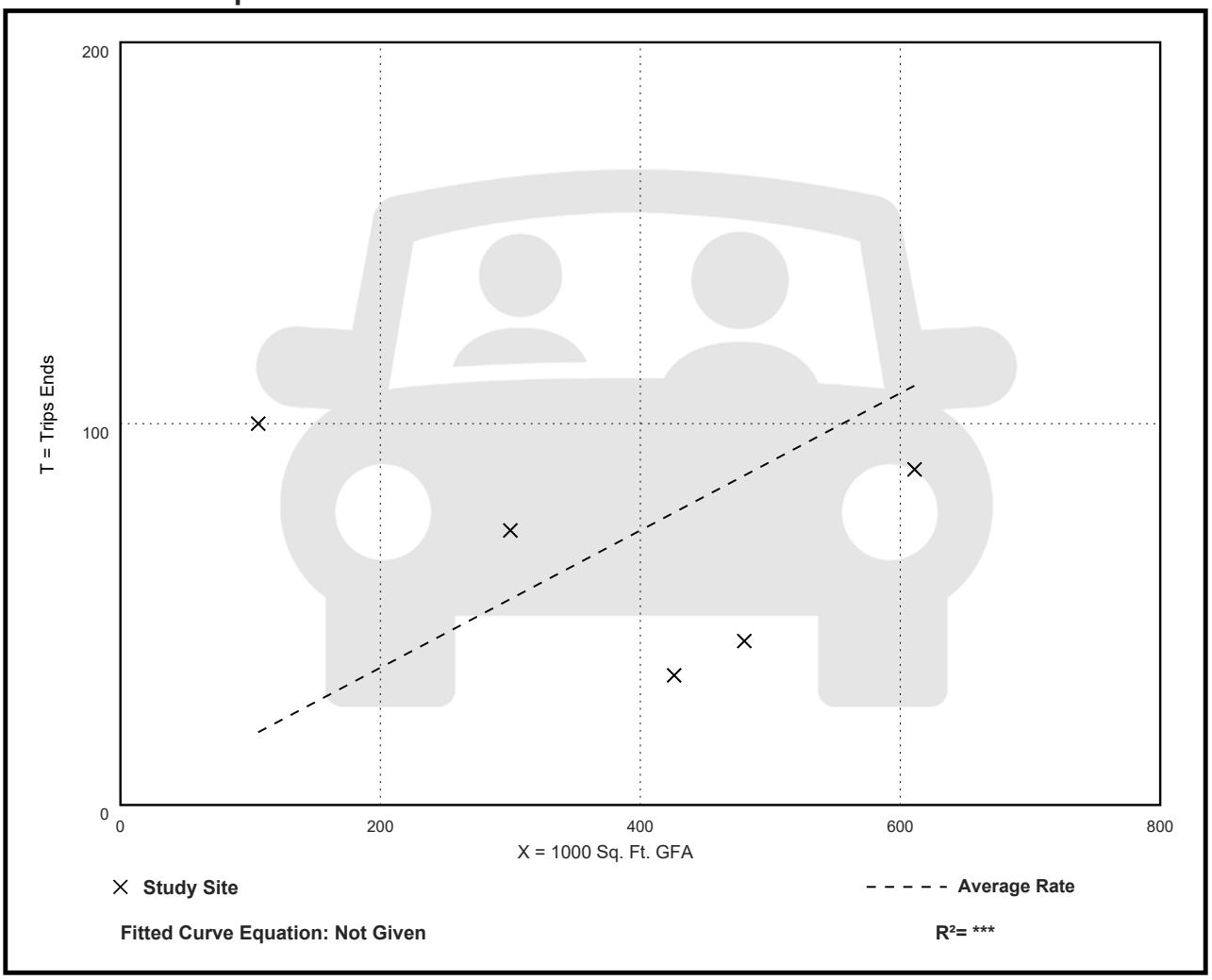
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. 1000 Sq. Ft. GFA: 385
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.18	0.08 - 0.94	0.22

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ***

Manufacturing
(140)

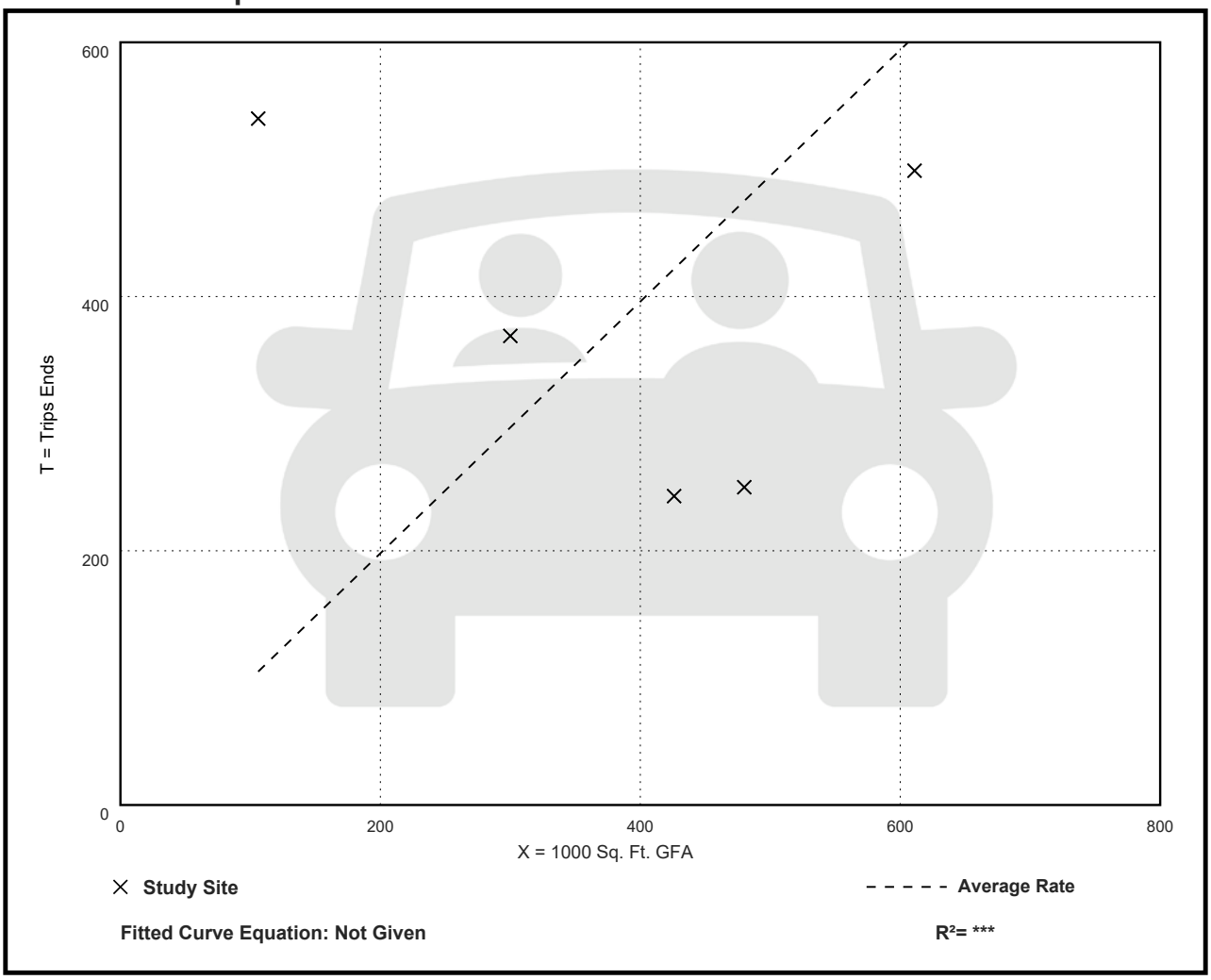
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Sunday

Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. 1000 Sq. Ft. GFA: 385
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.99	0.52 - 5.09	1.14

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ***

Manufacturing
(140)

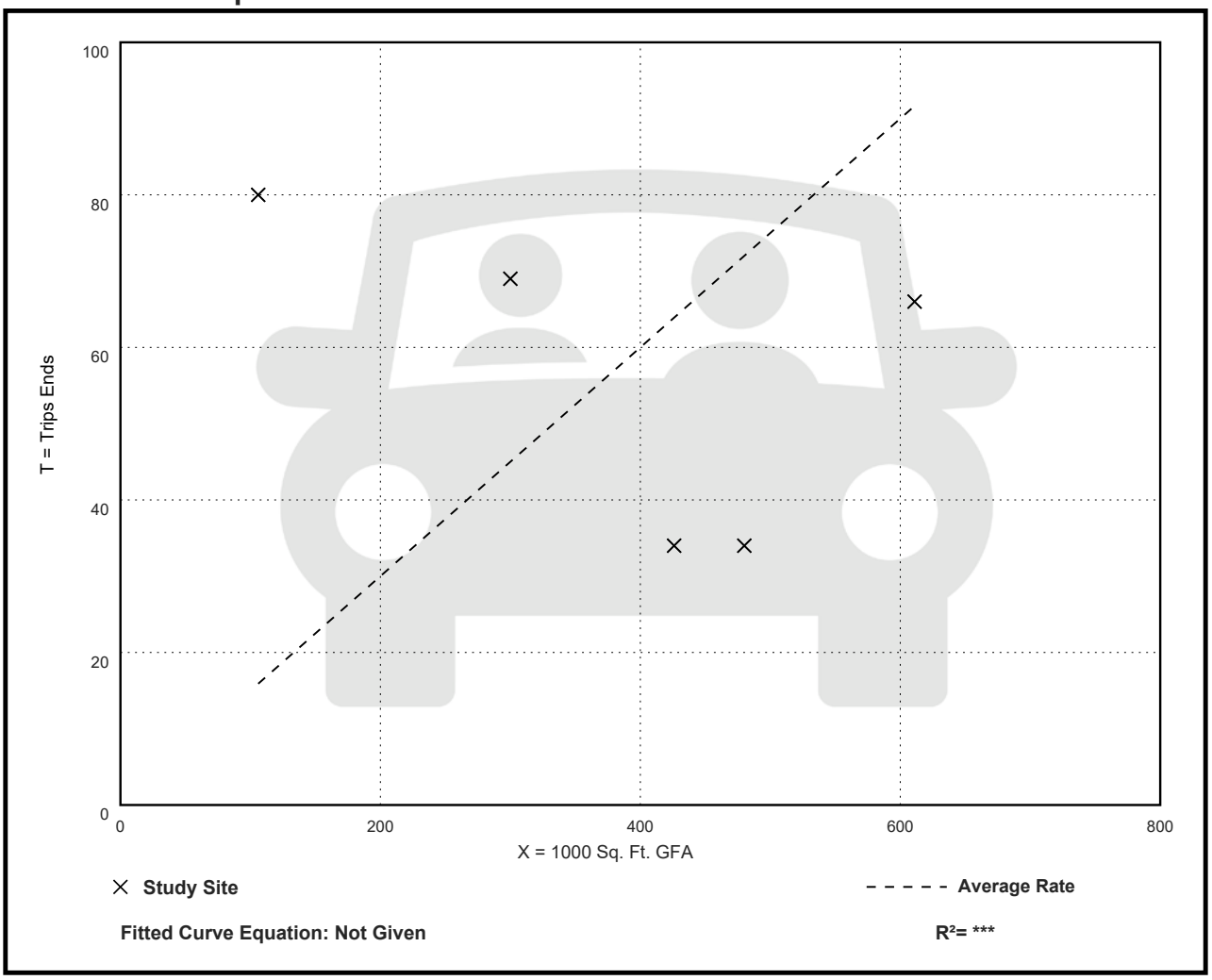
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Sunday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. 1000 Sq. Ft. GFA: 385
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.15	0.07 - 0.75	0.17

Data Plot and Equation



Manufacturing
(140)

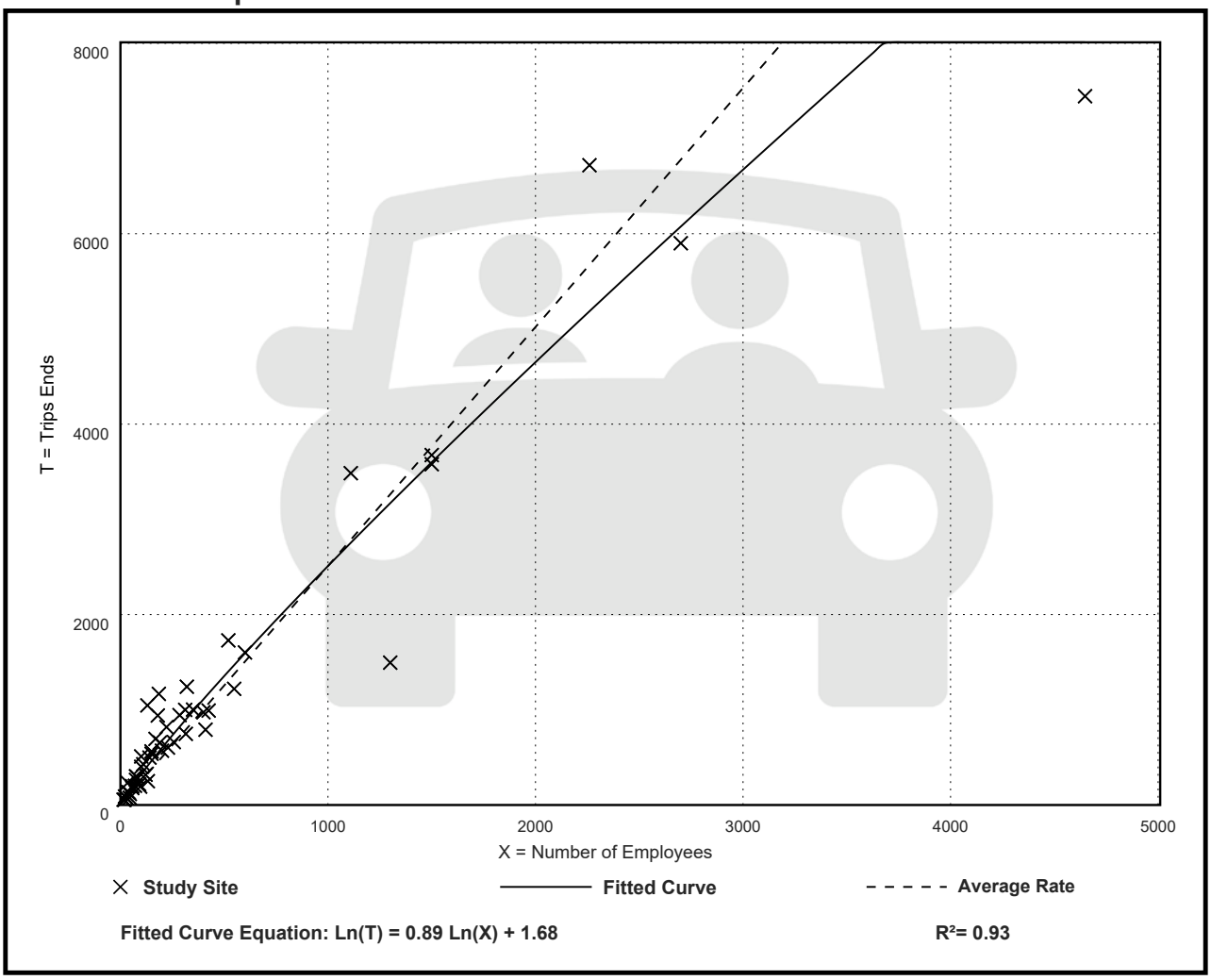
Vehicle Trip Ends vs: Employees
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 53
Avg. Num. of Employees: 437
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
2.51	1.15 - 8.05	0.96

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.89 Ln(X) + 1.68

R^2= 0.93

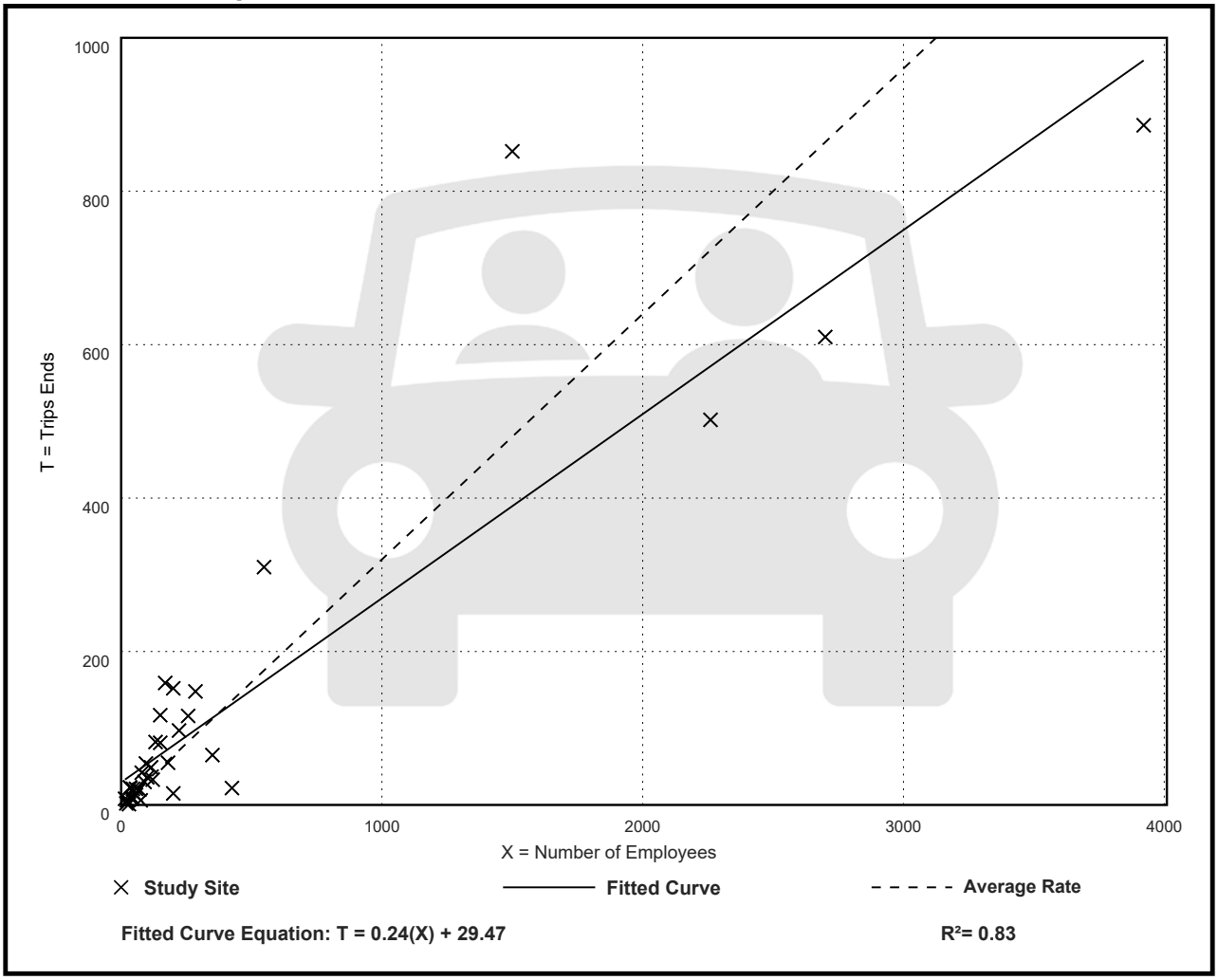
Manufacturing
(140)

Vehicle Trip Ends vs: Employees
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 37
Avg. Num. of Employees: 400
Directional Distribution: 73% entering, 27% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
0.32	0.03 - 0.94	0.18

Data Plot and Equation



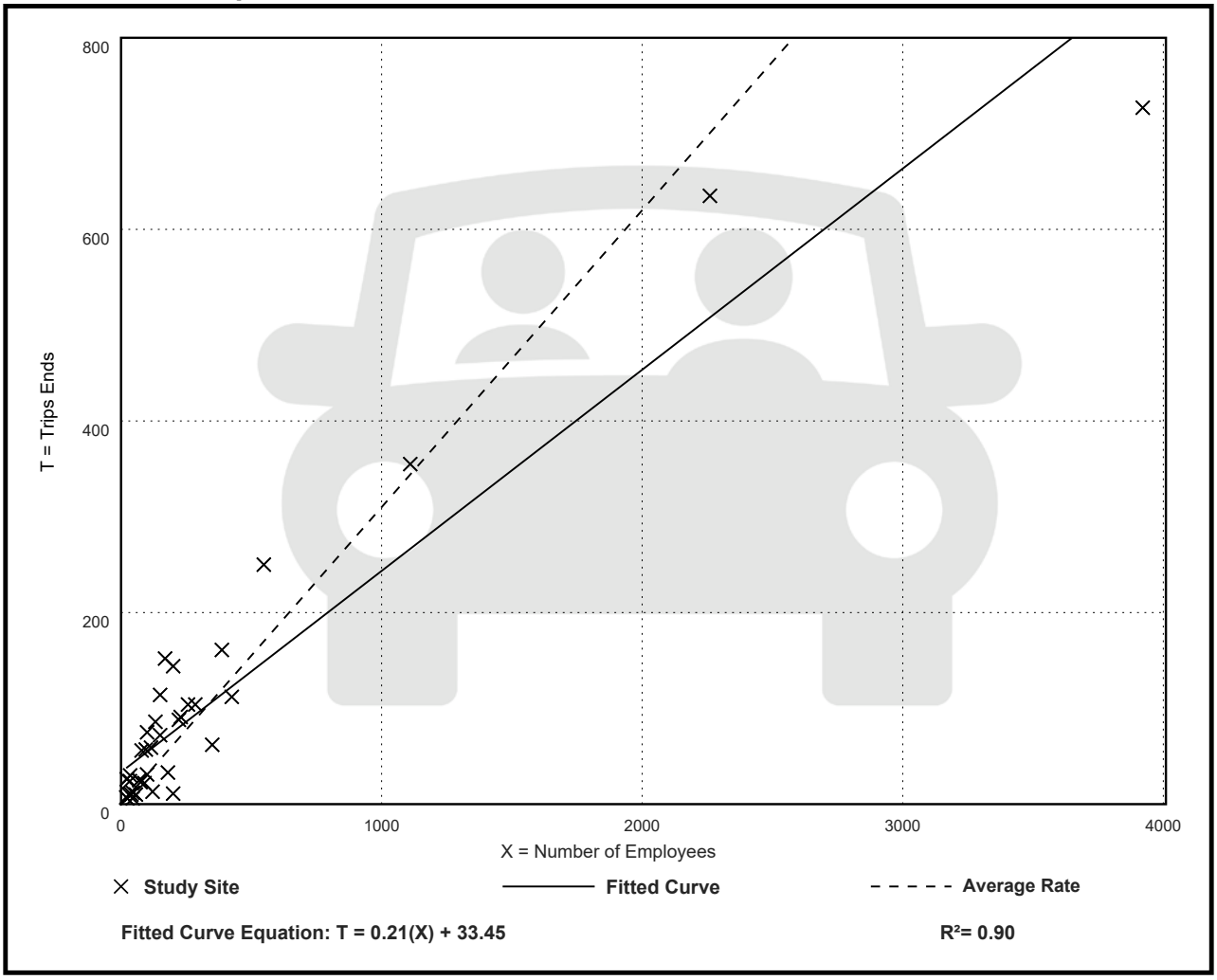
Manufacturing
(140)

Vehicle Trip Ends vs: Employees
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 37
Avg. Num. of Employees: 334
Directional Distribution: 37% entering, 63% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
0.31	0.06 - 1.18	0.17

Data Plot and Equation



Manufacturing
(140)

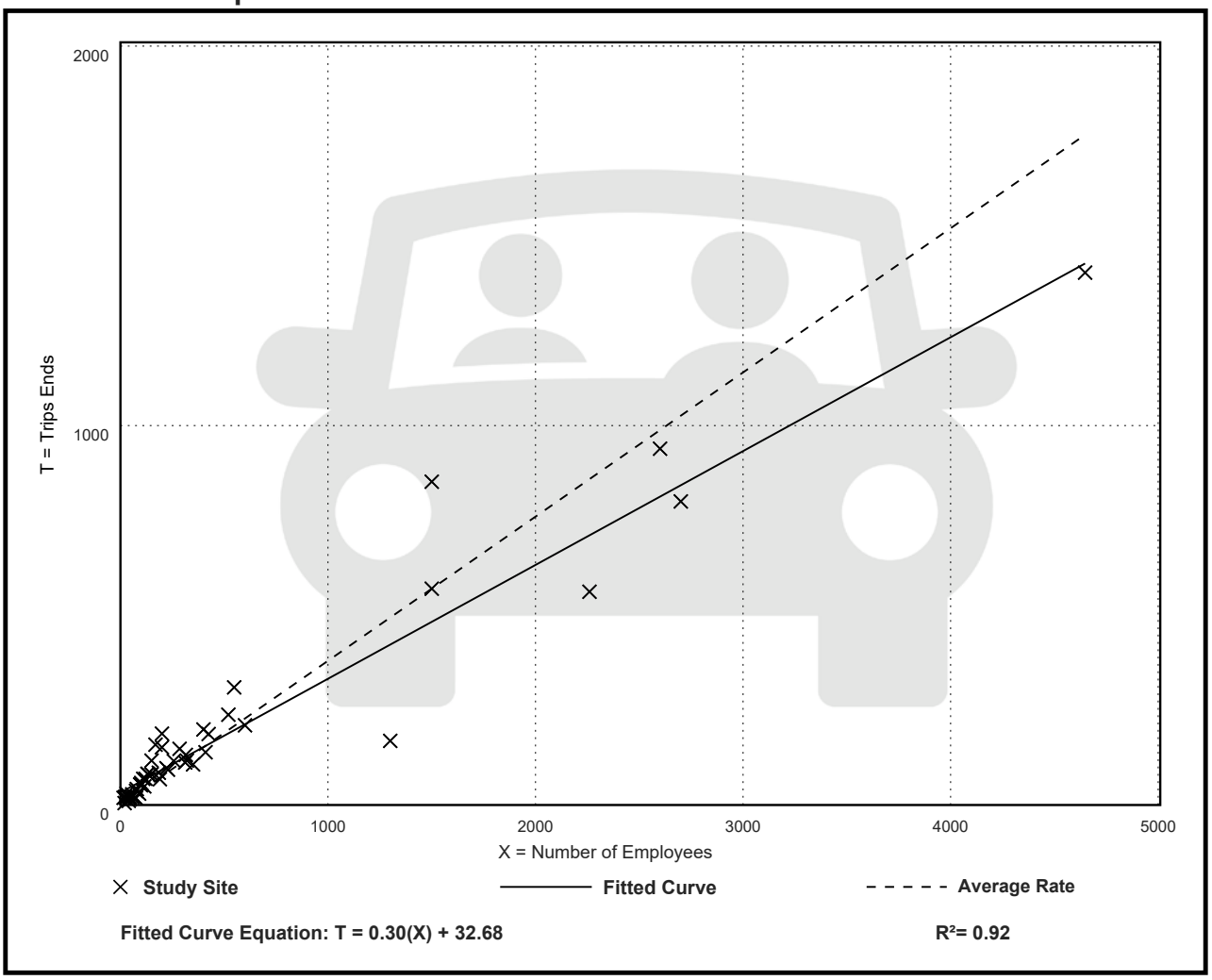
Vehicle Trip Ends vs: Employees
On a: Weekday,
AM Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 54
Avg. Num. of Employees: 459
Directional Distribution: 83% entering, 17% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
0.38	0.13 - 1.27	0.15

Data Plot and Equation



Fitted Curve Equation: T = 0.30(X) + 32.68

R^2= 0.92

Manufacturing
(140)

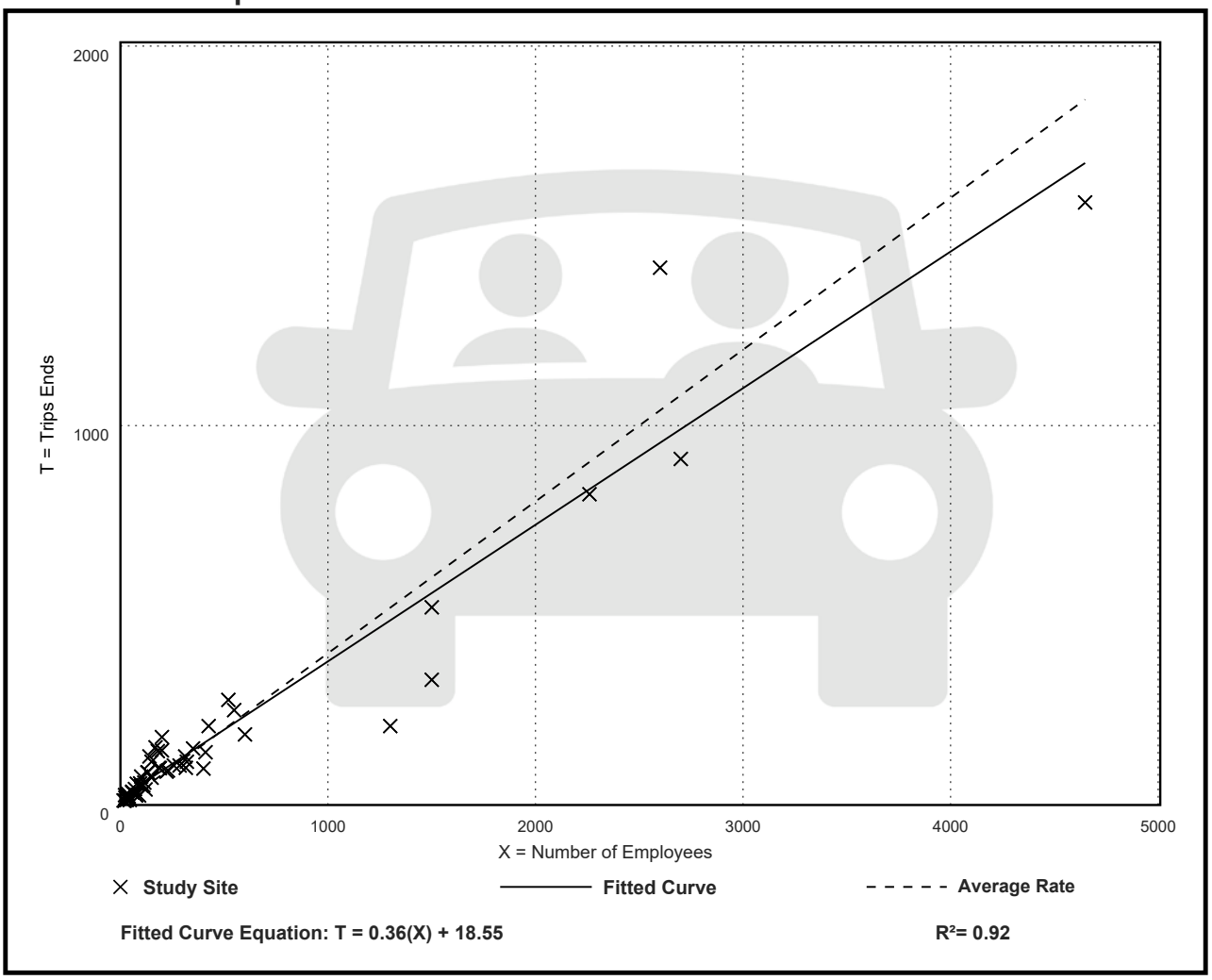
Vehicle Trip Ends vs: Employees
On a: Weekday,
PM Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 55
Avg. Num. of Employees: 454
Directional Distribution: 39% entering, 61% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
0.40	0.16 - 1.18	0.15

Data Plot and Equation



Fitted Curve Equation: T = 0.36(X) + 18.55

R^2= 0.92

Manufacturing
(140)

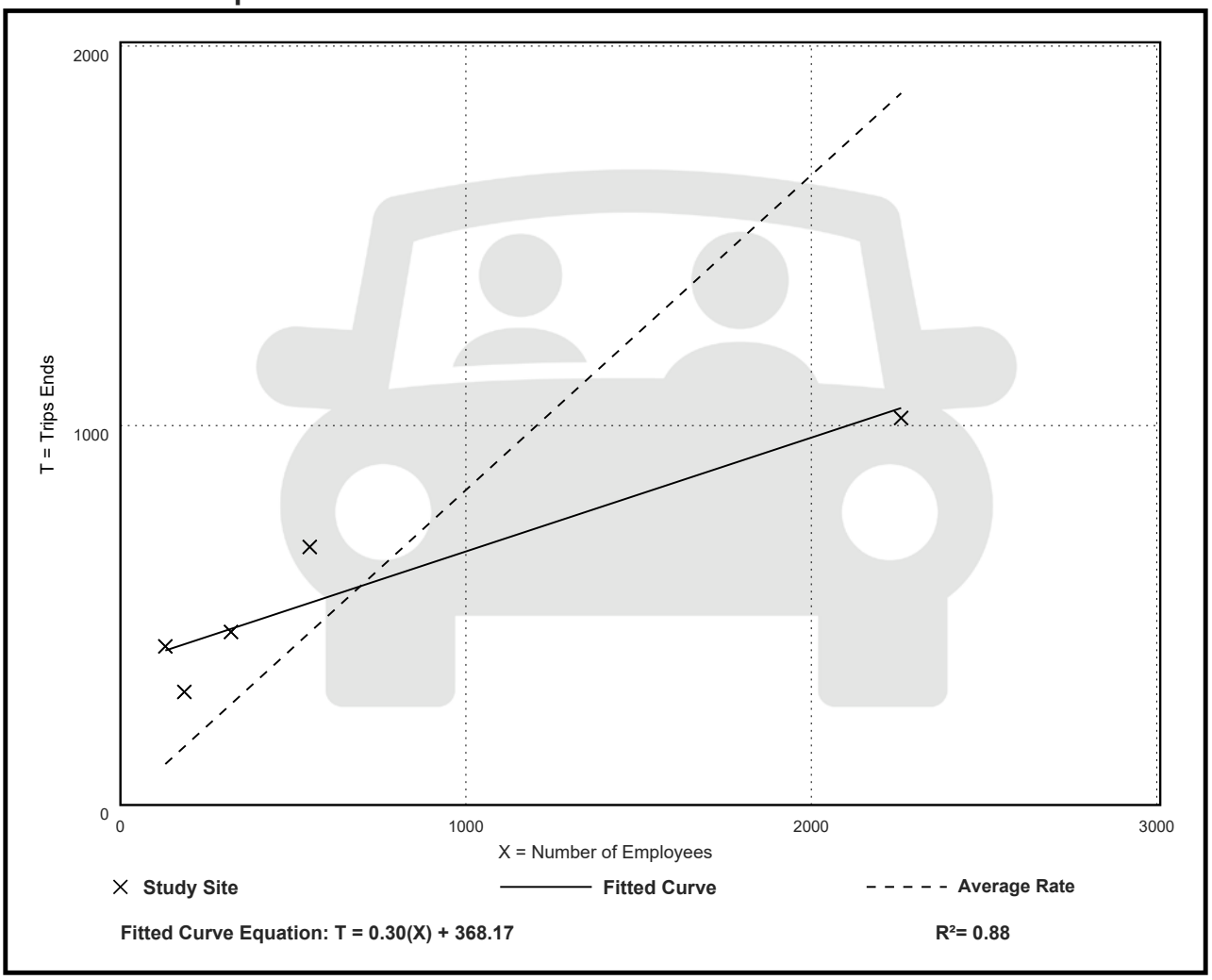
Vehicle Trip Ends vs: Employees
On a: Saturday

Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. Num. of Employees: 689
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
0.83	0.45 - 3.22	0.71

Data Plot and Equation



Fitted Curve Equation: T = 0.30(X) + 368.17

R^2= 0.88

Manufacturing
(140)

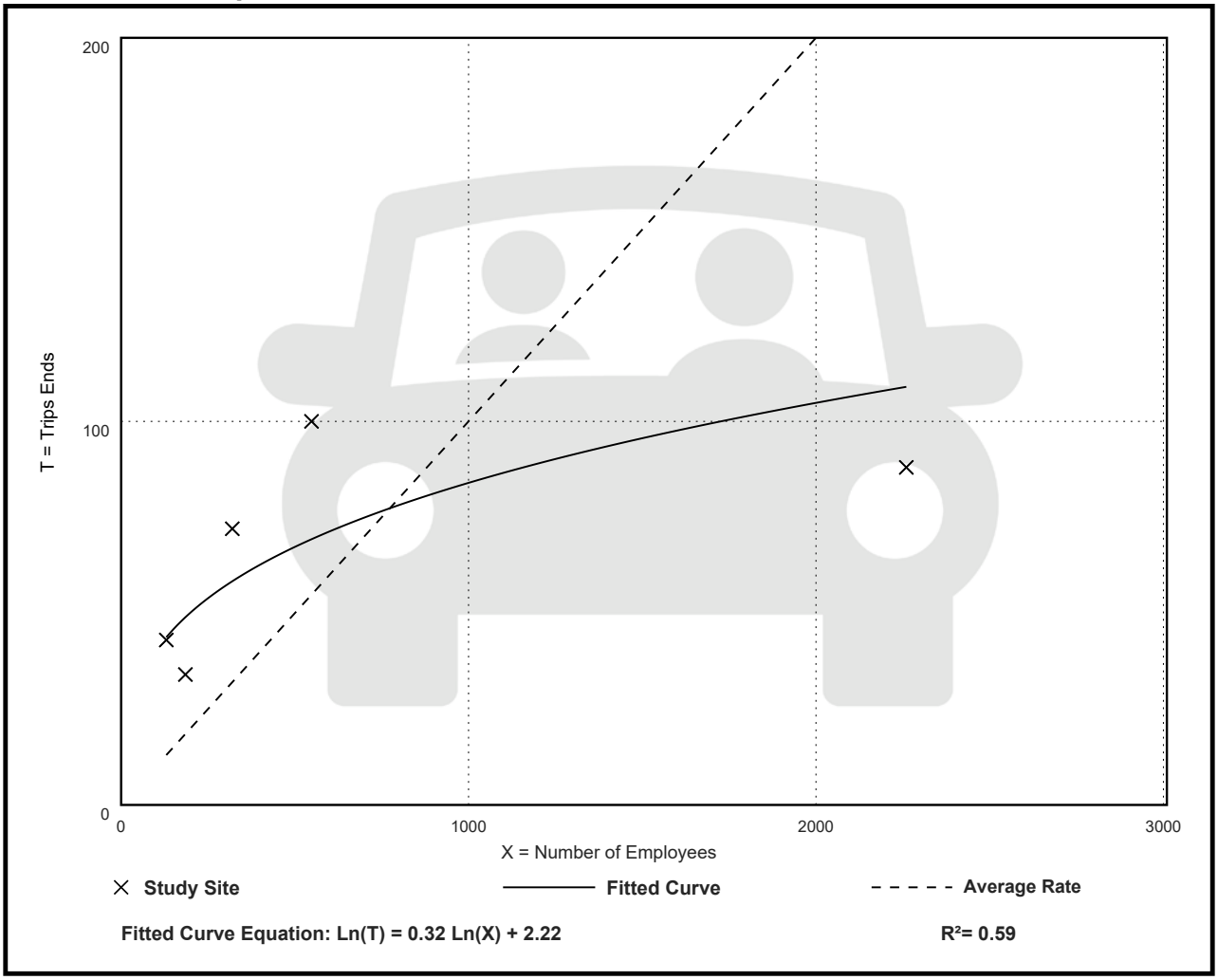
Vehicle Trip Ends vs: Employees
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. Num. of Employees: 689
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
0.10	0.04 - 0.33	0.10

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.32 Ln(X) + 2.22

R^2= 0.59

Manufacturing
(140)

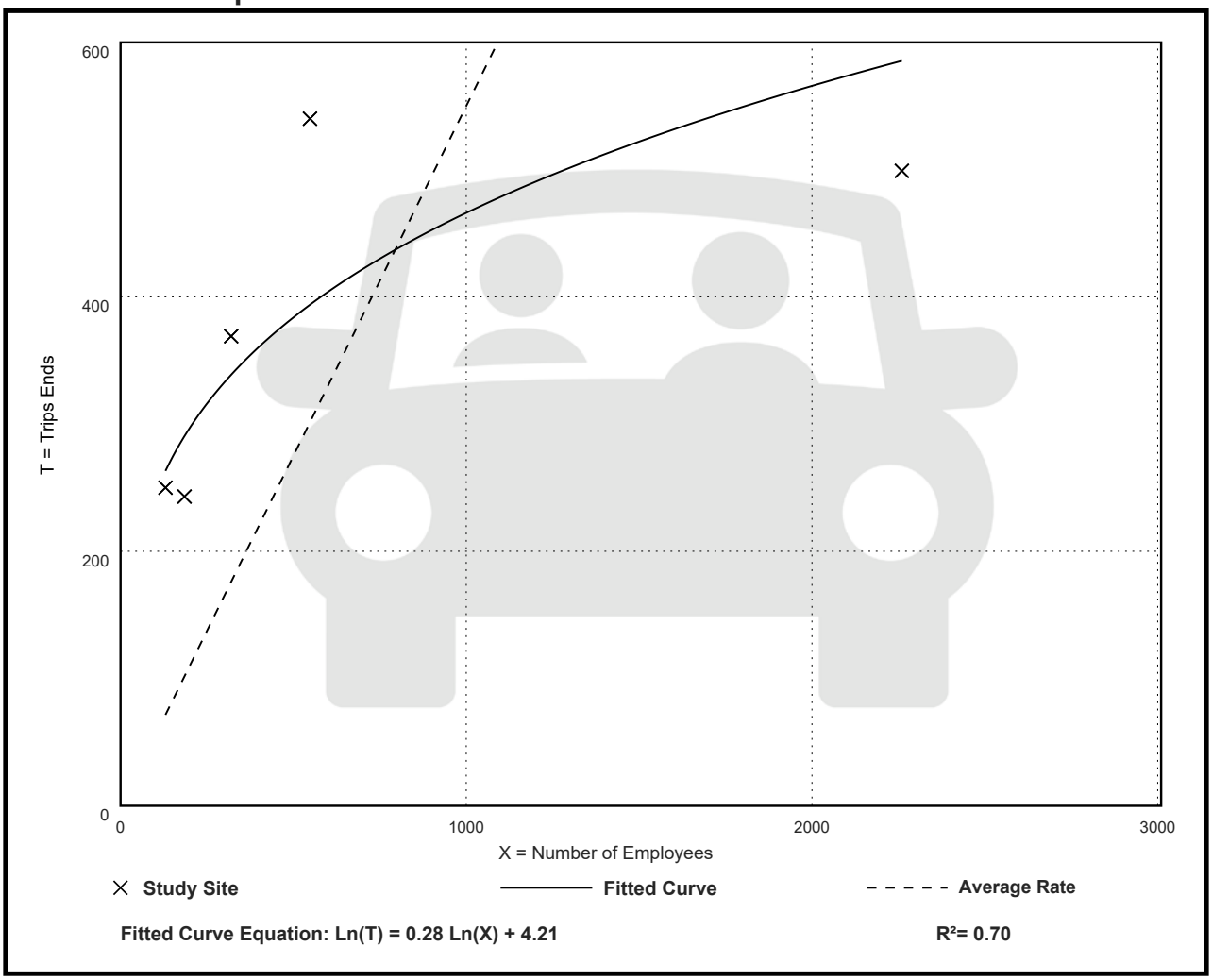
Vehicle Trip Ends vs: Employees
On a: Sunday

Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. Num. of Employees: 689
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
0.55	0.22 - 1.92	0.55

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.28 Ln(X) + 4.21

R^2= 0.70

Manufacturing
(140)

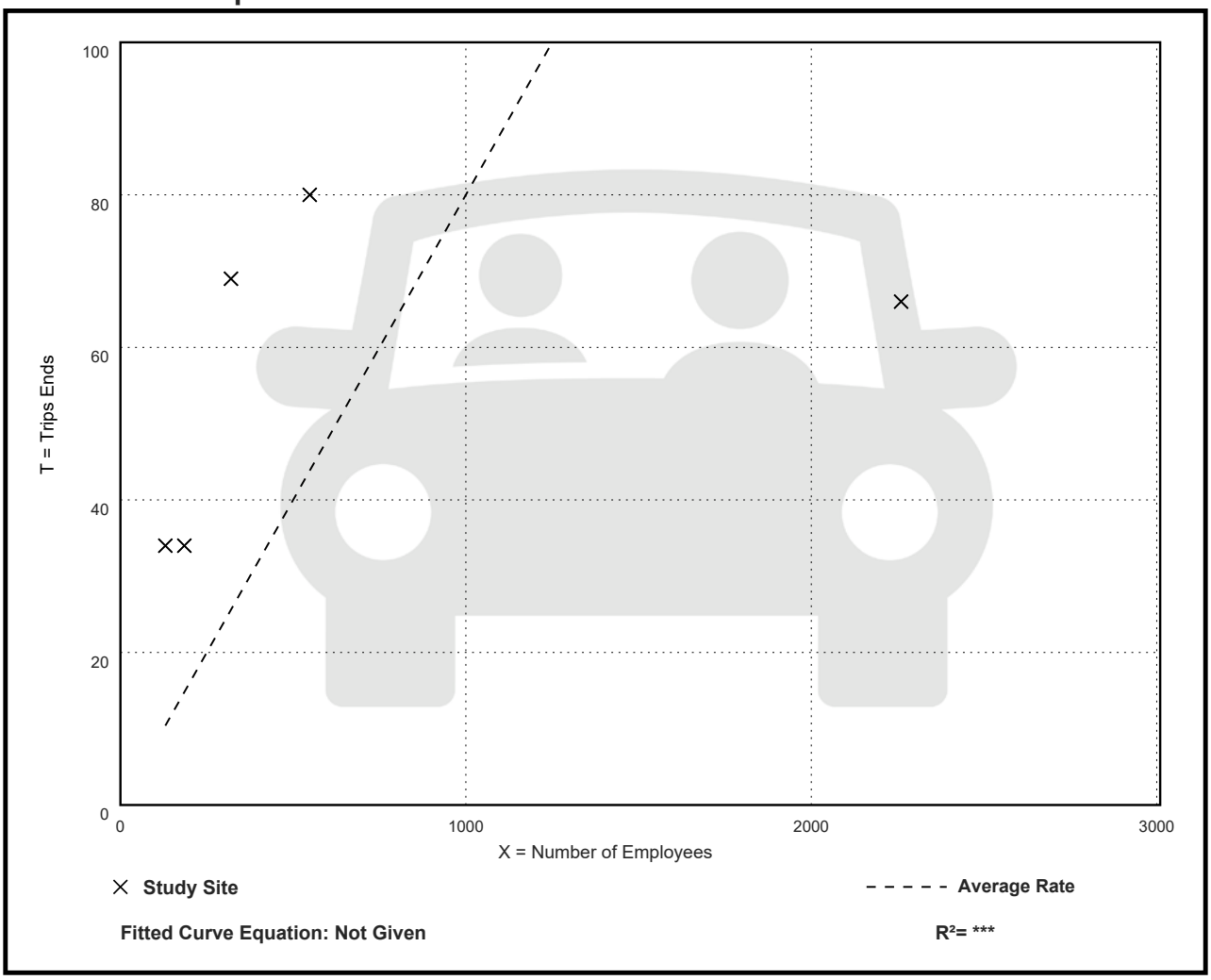
Vehicle Trip Ends vs: Employees
On a: Sunday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. Num. of Employees: 689
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
0.08	0.03 - 0.26	0.09

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ***

Manufacturing
(140)

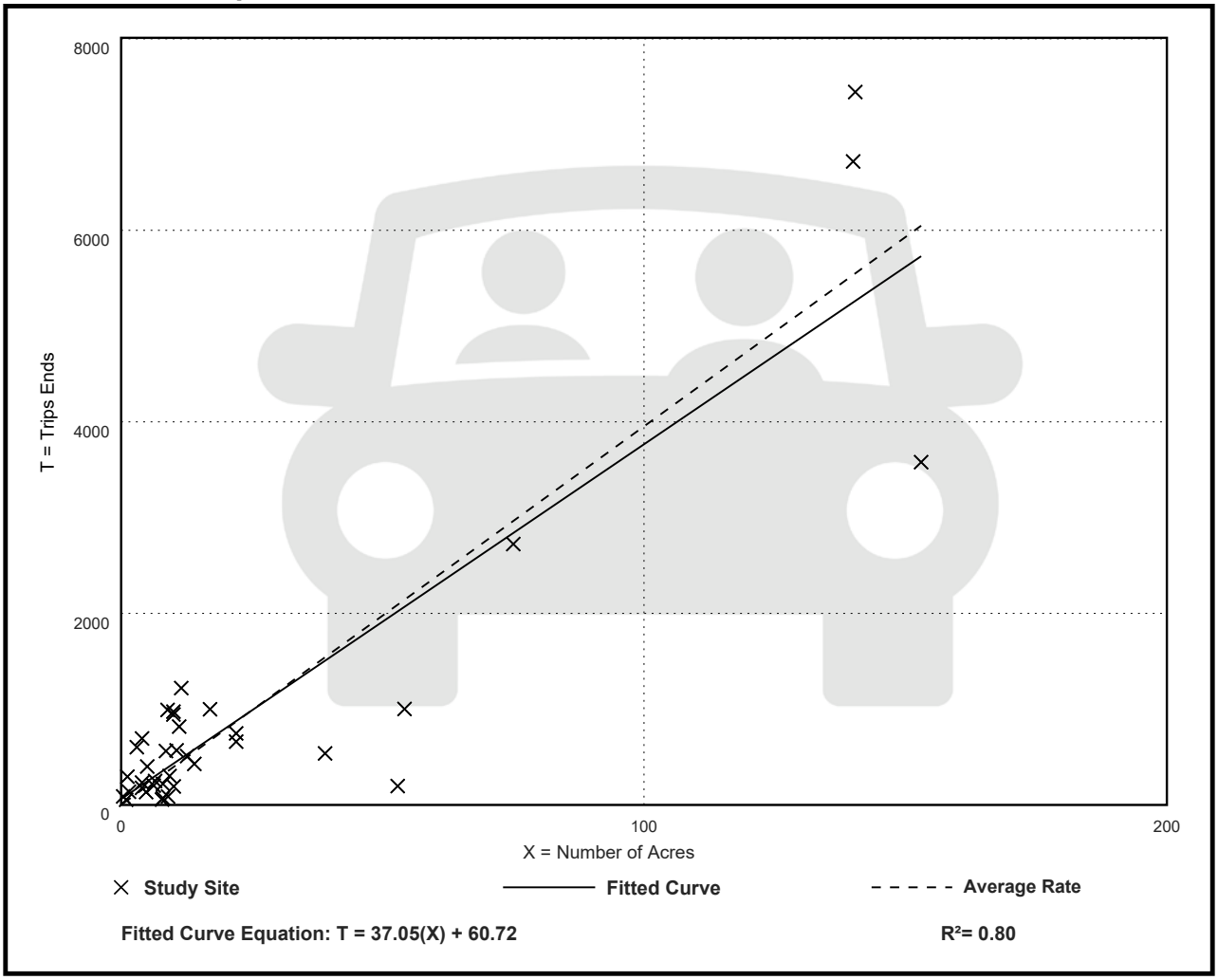
Vehicle Trip Ends vs: Acres
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 37
Avg. Num. of Acres: 24
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Acre

Average Rate	Range of Rates	Standard Deviation
39.53	3.72 - 245.83	27.04

Data Plot and Equation



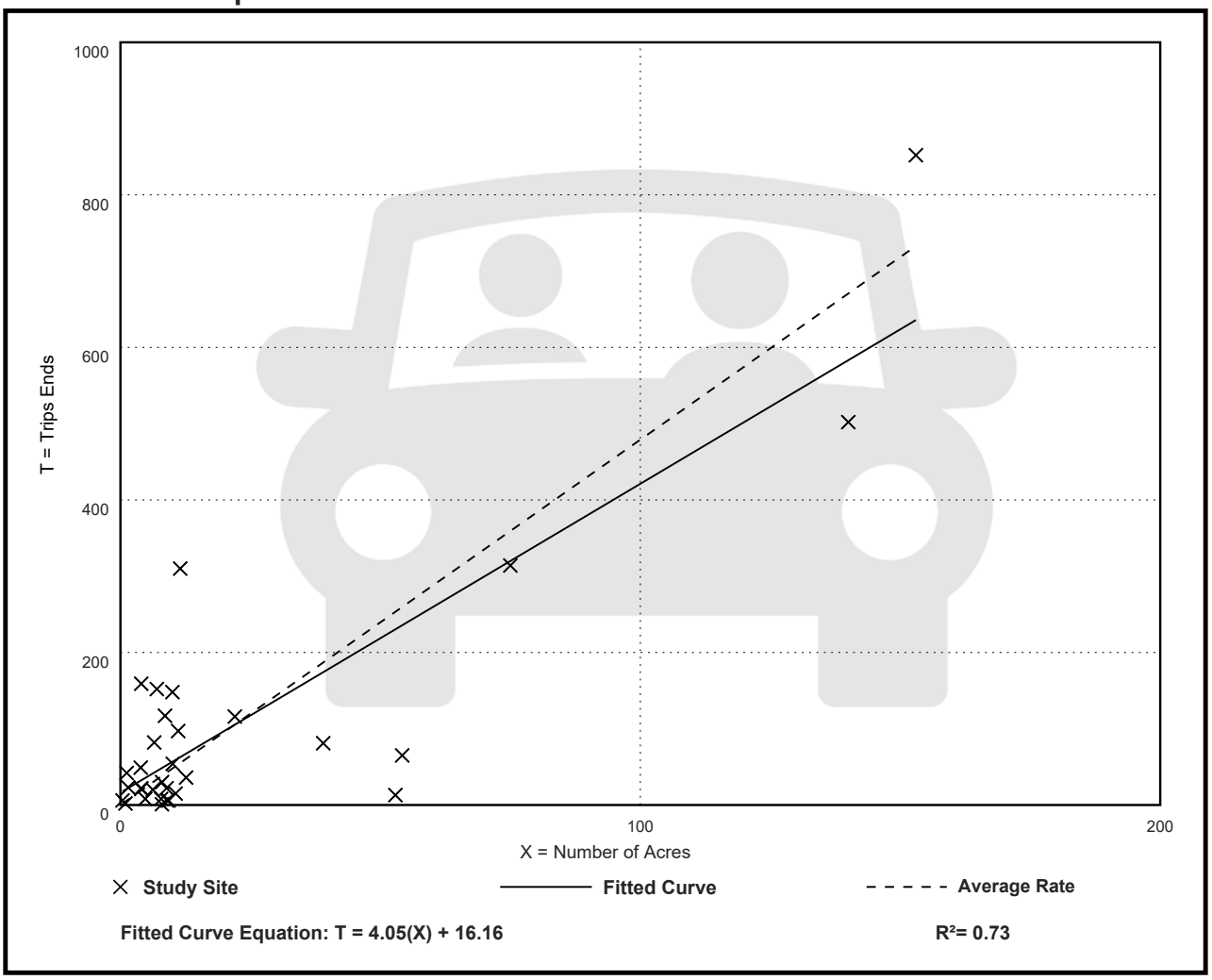
Manufacturing
(140)

Vehicle Trip Ends vs: Acres
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 32
Avg. Num. of Acres: 22
Directional Distribution: 86% entering, 14% exiting

Vehicle Trip Generation per Acre

Average Rate	Range of Rates	Standard Deviation
4.79	0.13 - 39.75	5.36

Data Plot and Equation



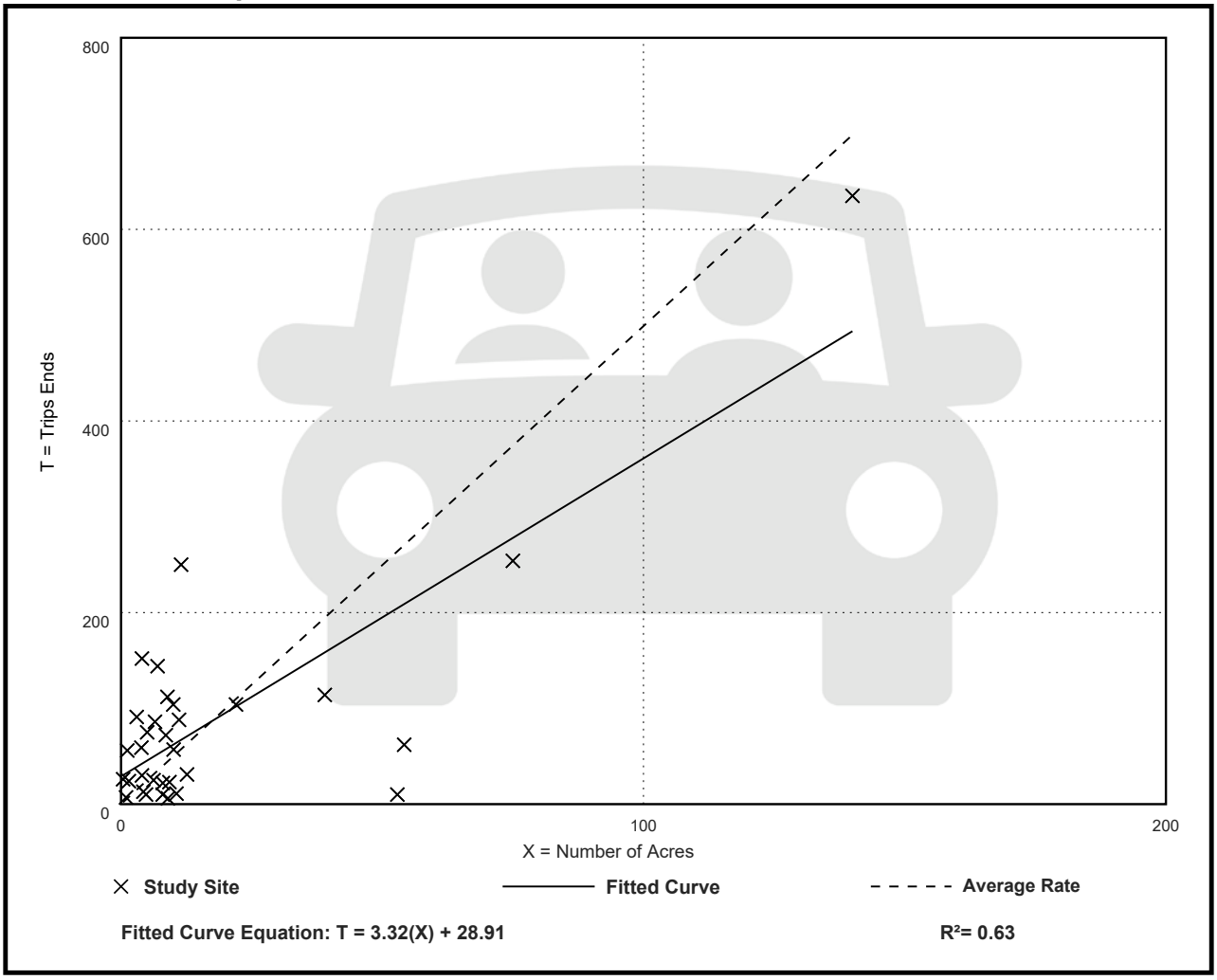
Manufacturing
(140)

Vehicle Trip Ends vs: Acres
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 32
Avg. Num. of Acres: 17
Directional Distribution: 39% entering, 61% exiting

Vehicle Trip Generation per Acre

Average Rate	Range of Rates	Standard Deviation
4.99	0.19 - 65.00	6.17

Data Plot and Equation



Manufacturing
(140)

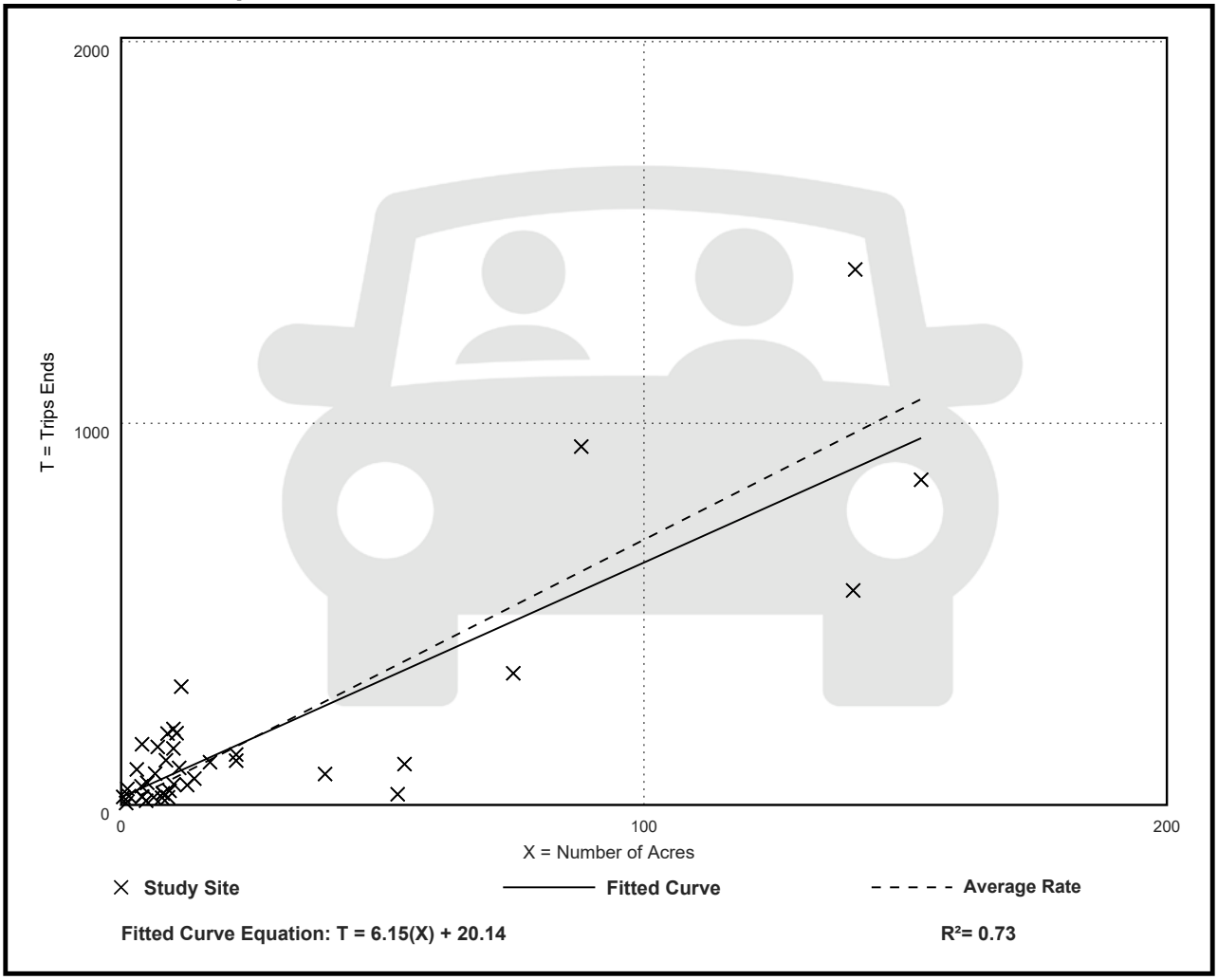
Vehicle Trip Ends vs: Acres
On a: Weekday,
AM Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 40
Avg. Num. of Acres: 25
Directional Distribution: 75% entering, 25% exiting

Vehicle Trip Generation per Acre

Average Rate	Range of Rates	Standard Deviation
6.95	0.53 - 52.50	5.55

Data Plot and Equation



Manufacturing
(140)

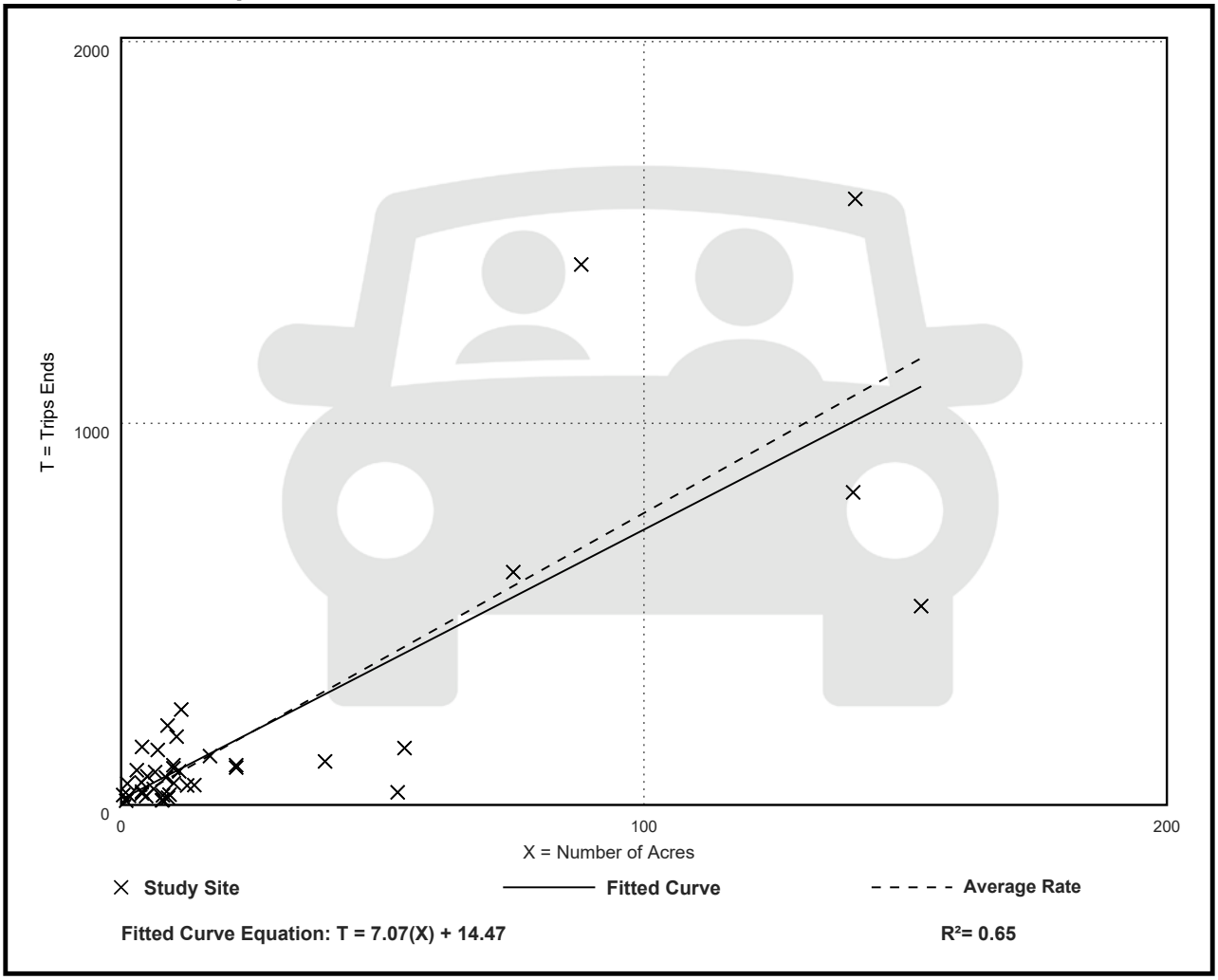
Vehicle Trip Ends vs: Acres
On a: Weekday,
PM Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 40
Avg. Num. of Acres: 25
Directional Distribution: 44% entering, 56% exiting

Vehicle Trip Generation per Acre

Average Rate	Range of Rates	Standard Deviation
7.65	0.62 - 65.00	5.90

Data Plot and Equation



Manufacturing
(140)

Vehicle Trip Ends vs: Acres
On a: Saturday

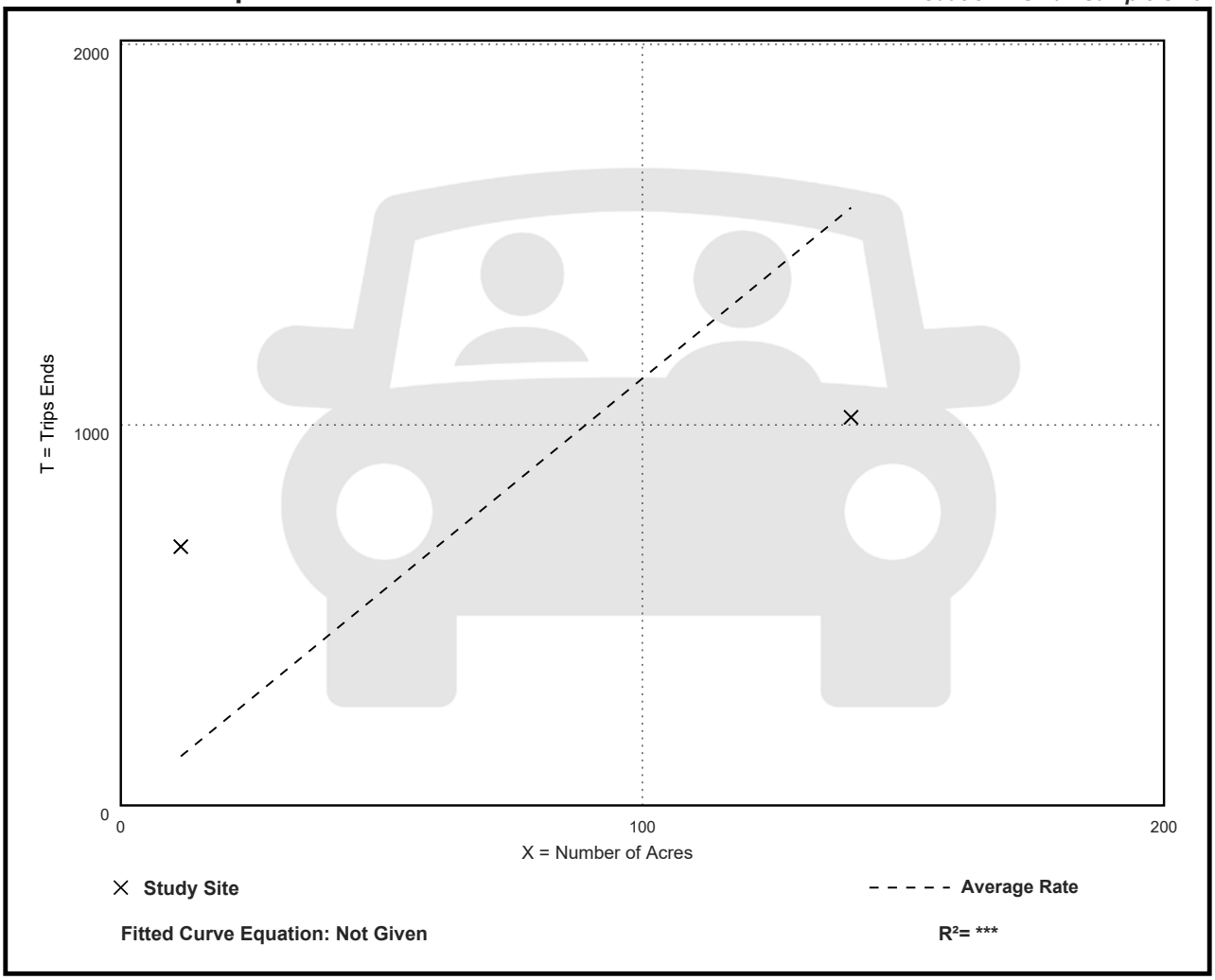
Setting/Location: General Urban/Suburban
Number of Studies: 2
Avg. Num. of Acres: 76
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Acre

Average Rate	Range of Rates	Standard Deviation
11.22	7.29 - 59.13	***

Data Plot and Equation

Caution – Small Sample Size



Manufacturing
(140)

Vehicle Trip Ends vs: Acres
On a: Saturday, Peak Hour of Generator

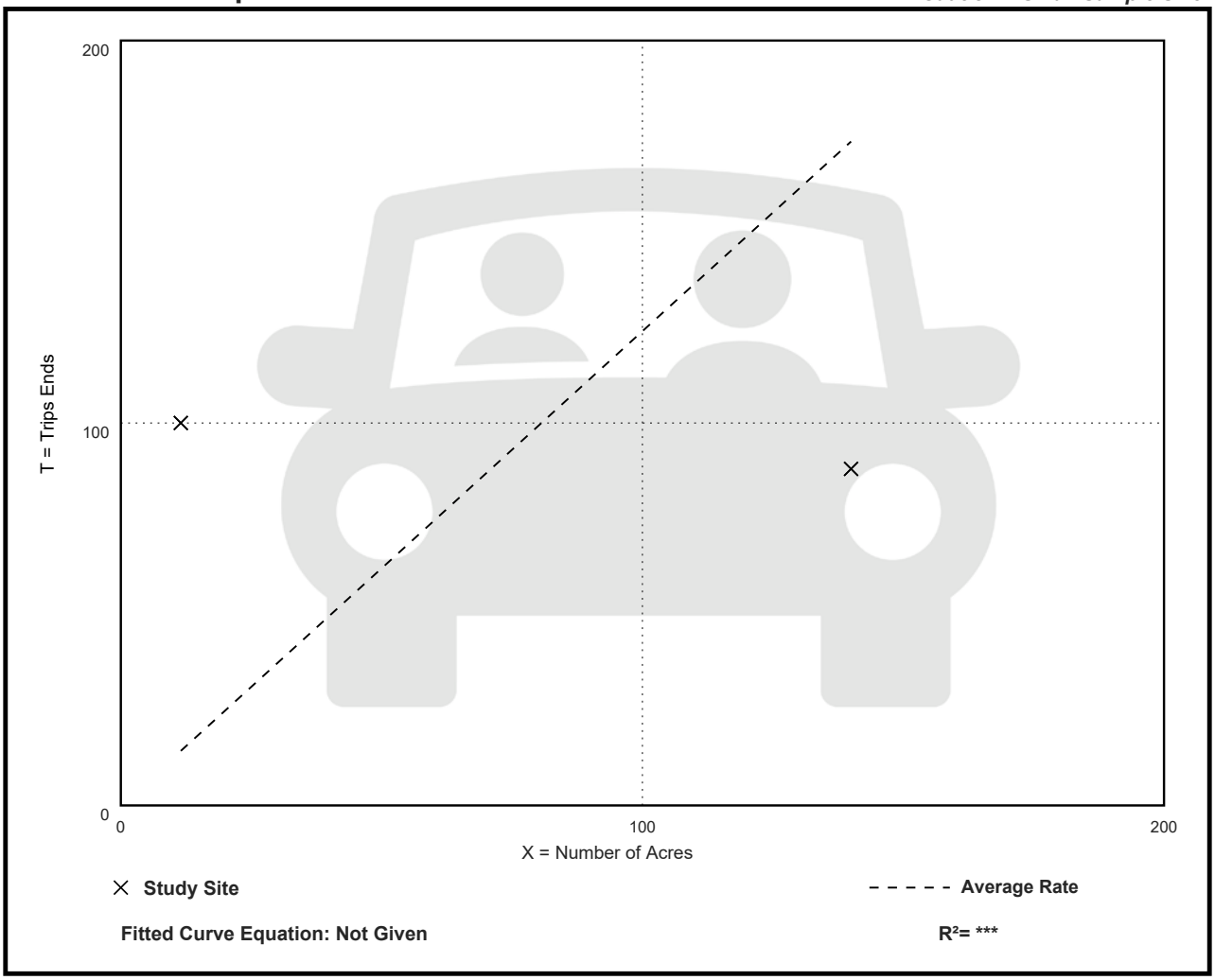
Setting/Location: General Urban/Suburban
Number of Studies: 2
Avg. Num. of Acres: 76
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per Acre

Average Rate	Range of Rates	Standard Deviation
1.24	0.63 - 8.70	***

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= ***

Manufacturing
(140)

Vehicle Trip Ends vs: Acres
On a: Sunday

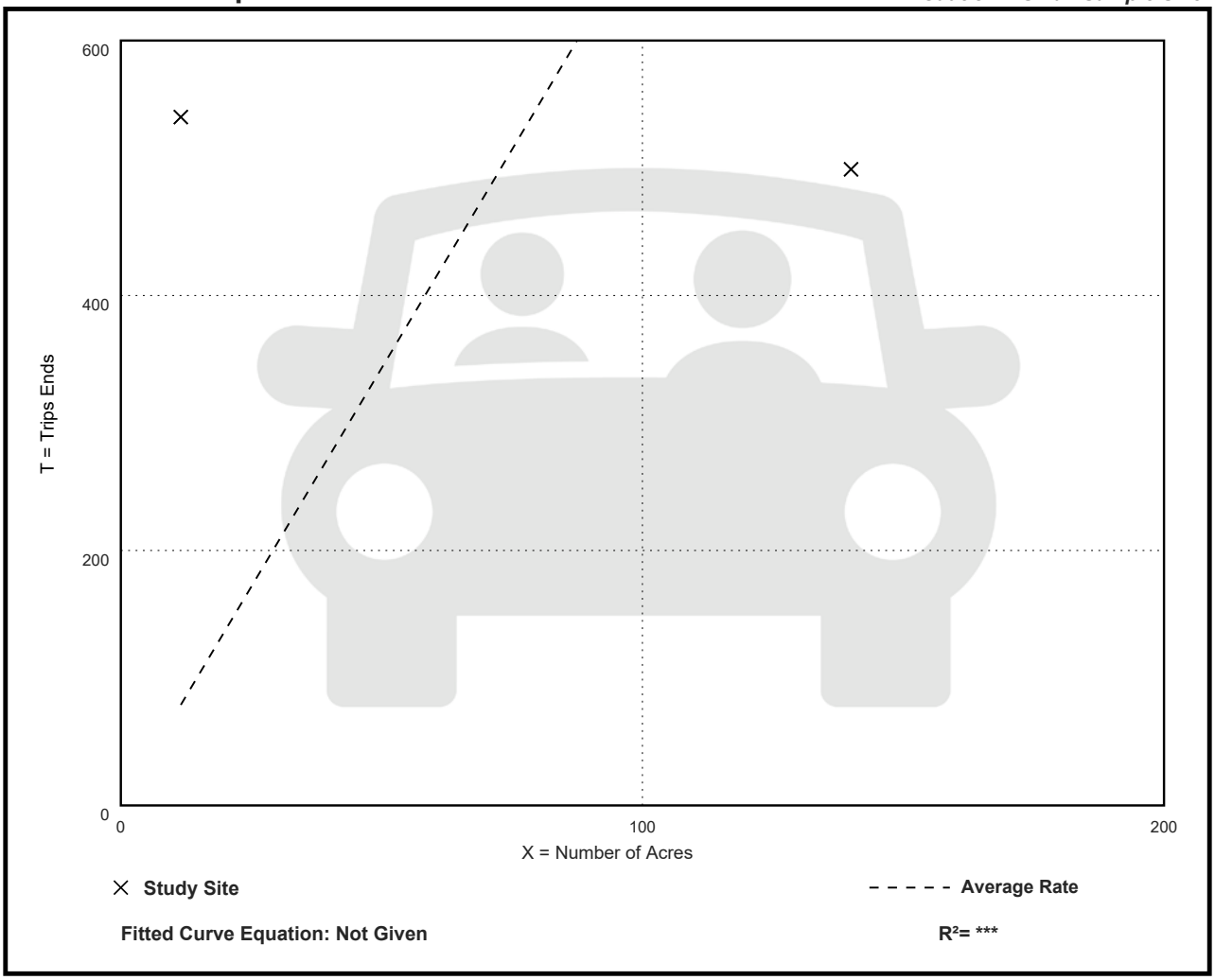
Setting/Location: General Urban/Suburban
Number of Studies: 2
Avg. Num. of Acres: 76
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Acre

Average Rate	Range of Rates	Standard Deviation
6.86	3.56 - 46.96	***

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= ***

Manufacturing
(140)

Vehicle Trip Ends vs: Acres
On a: Sunday, Peak Hour of Generator

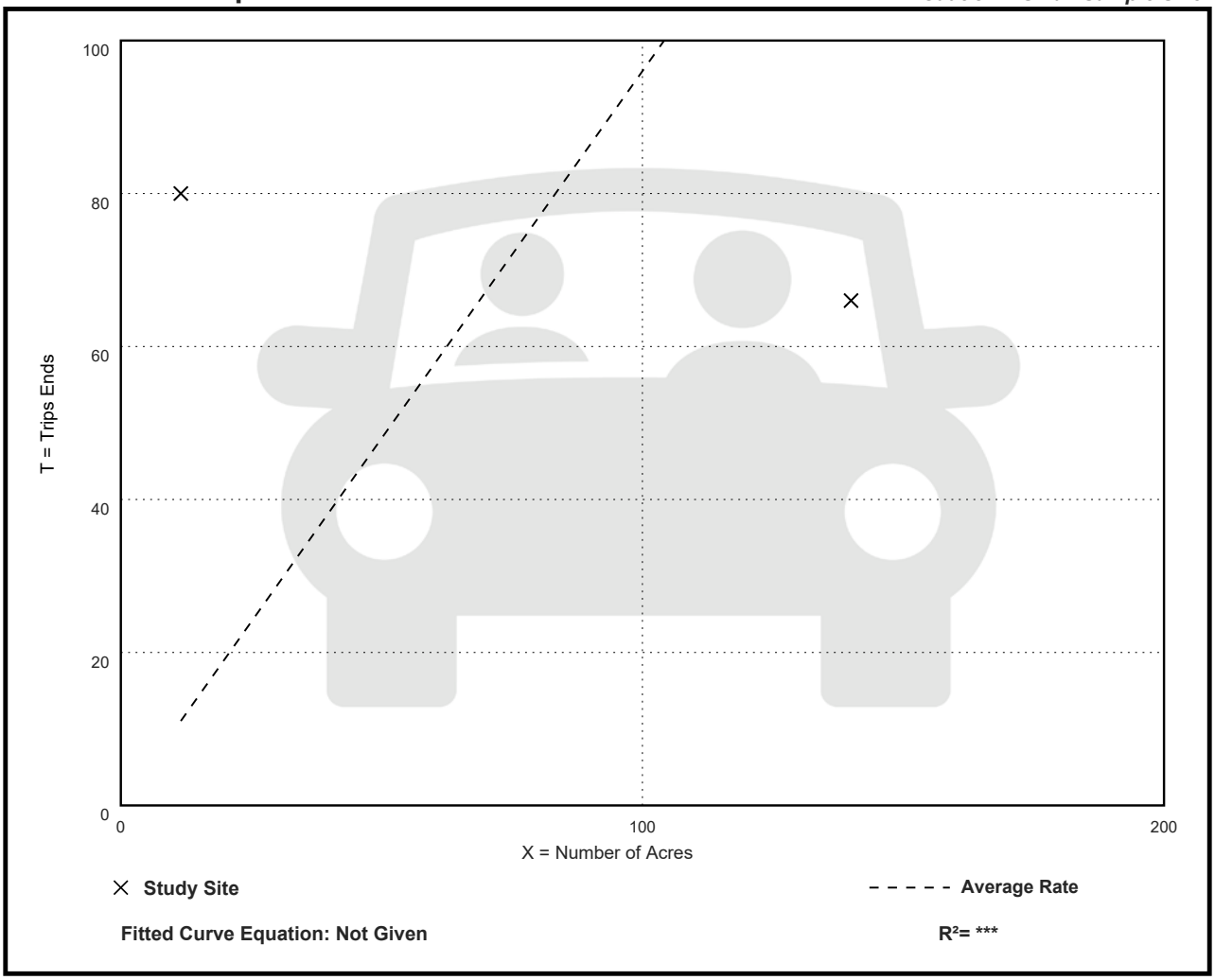
Setting/Location: General Urban/Suburban
Number of Studies: 2
Avg. Num. of Acres: 76
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Acre

Average Rate	Range of Rates	Standard Deviation
0.96	0.47 - 6.96	***

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= ***

Land Use: 715
Single Tenant Office Building

Description

A single tenant office building generally contains offices, meeting rooms, and space for file storage and data processing of a single business or company and possibly other service functions including a restaurant or cafeteria. General office building (Land Use 710), corporate headquarters building (Land Use 714), office park (Land Use 750), research and development center (Land Use 760), and business park (Land Use 770) are related uses.

Additional Data

The sites were surveyed in the 1980s, the 1990s, and the 2000s in California, Kansas, Maryland, Missouri, New Jersey, New York, Pennsylvania, and Virginia.

Source Numbers

212, 262, 273, 279, 303, 304, 322, 323, 324, 327, 407, 510, 701

Single Tenant Office Building
(715)

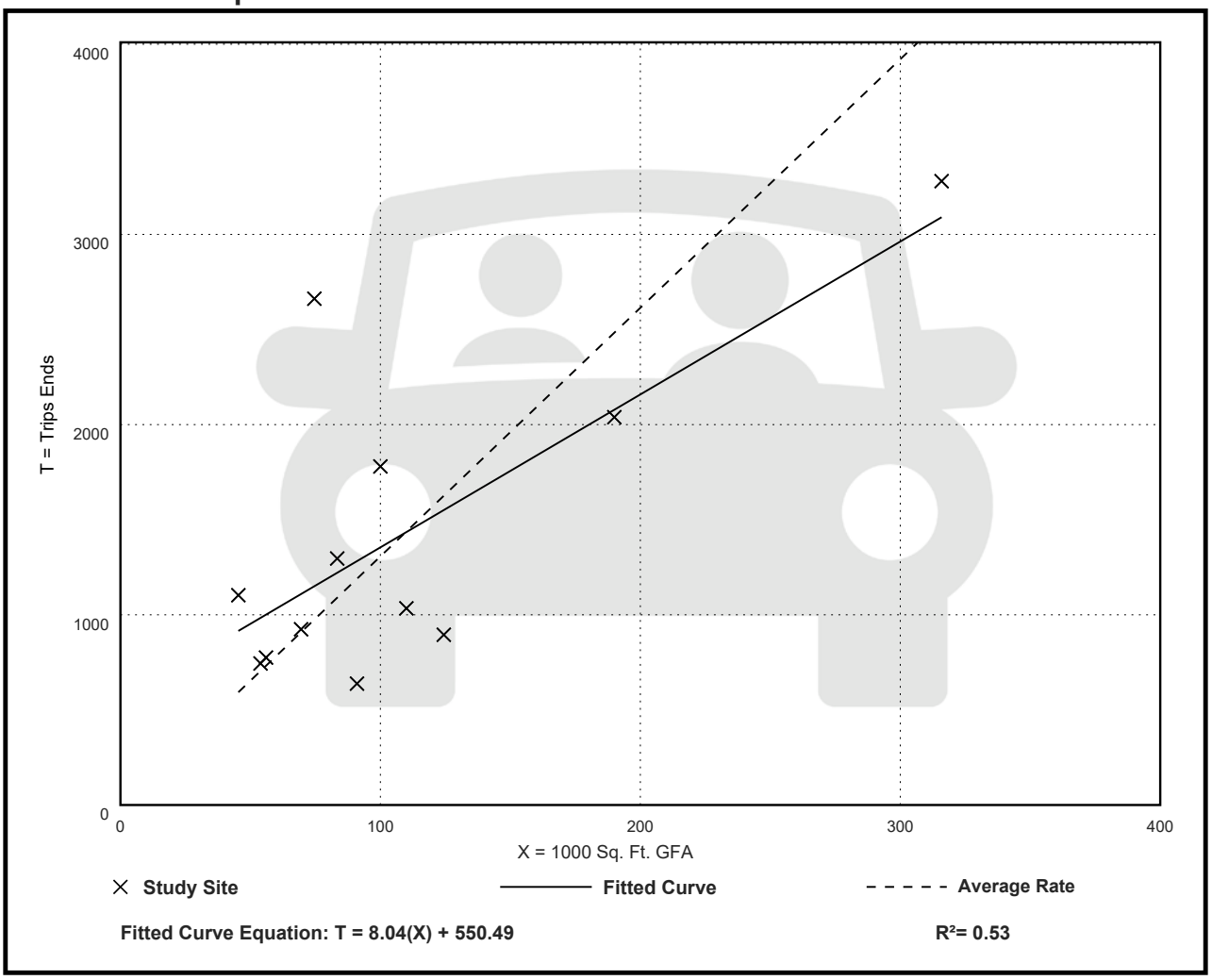
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 12
Avg. 1000 Sq. Ft. GFA: 110
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
13.07	7.01 - 35.68	7.01

Data Plot and Equation



Fitted Curve Equation: T = 8.04(X) + 550.49

R^2= 0.53

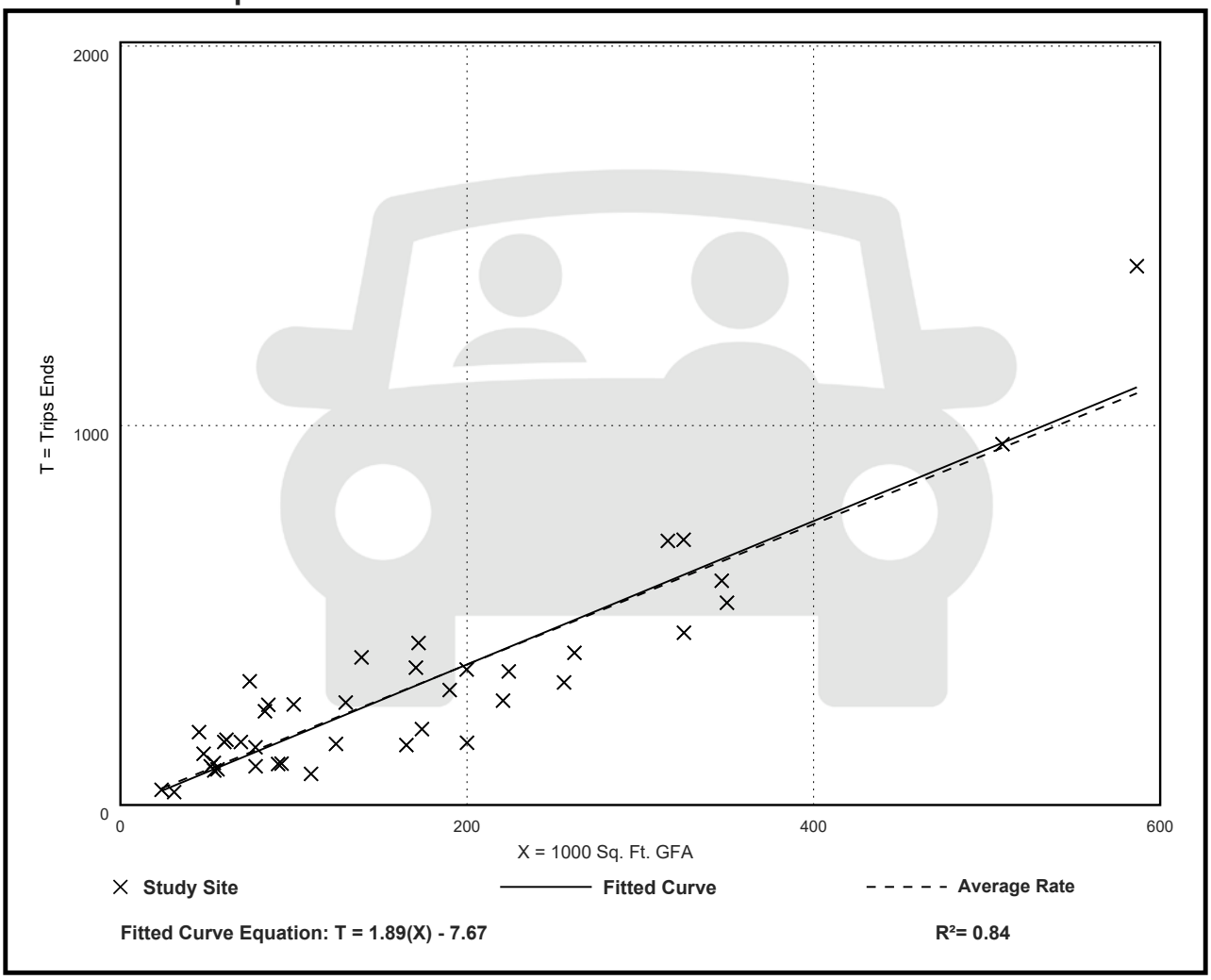
Single Tenant Office Building
(715)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 41
Avg. 1000 Sq. Ft. GFA: 164
Directional Distribution: 89% entering, 11% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.85	0.75 - 4.37	0.65

Data Plot and Equation



Fitted Curve Equation: T = 1.89(X) - 7.67

R^2= 0.84

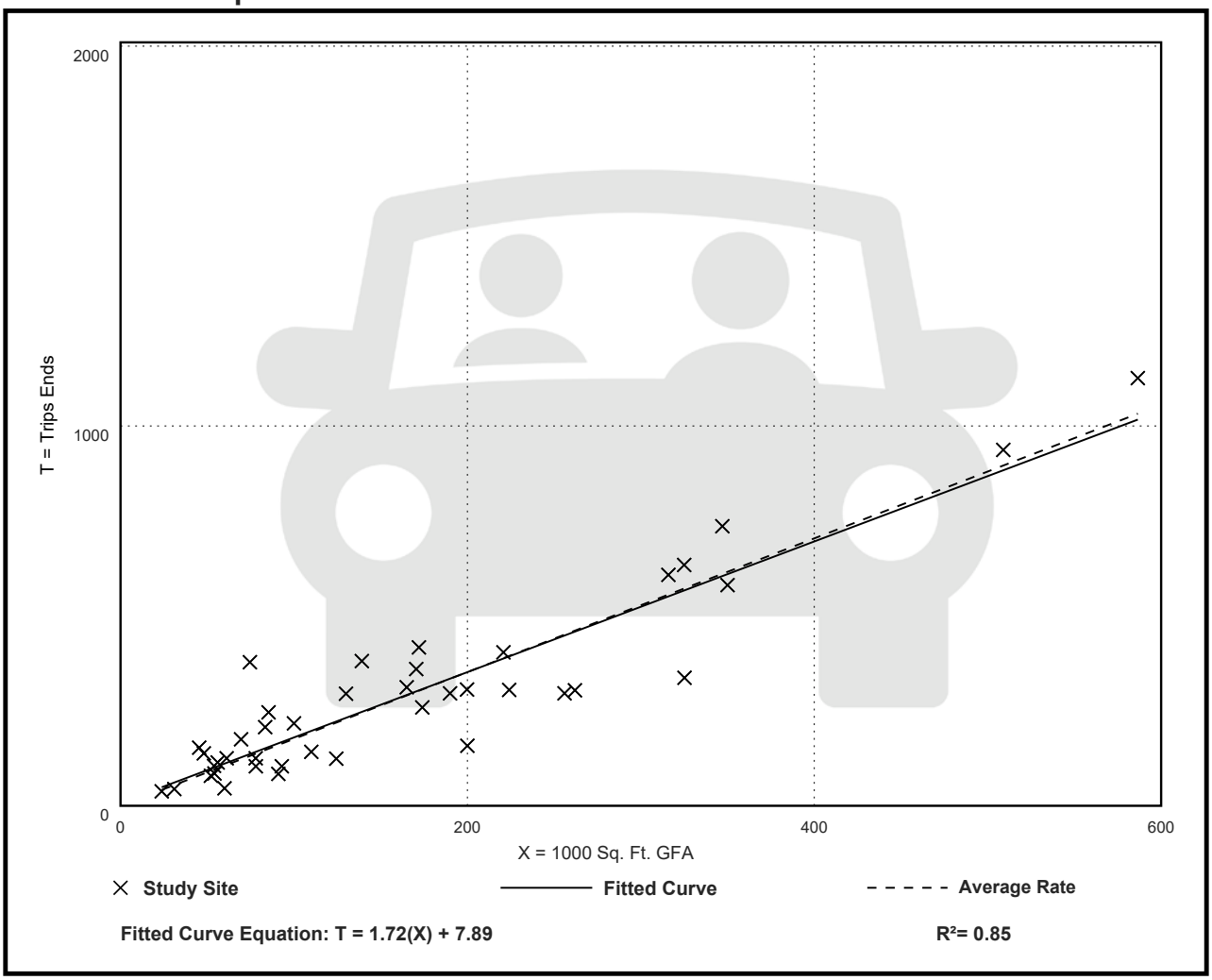
Single Tenant Office Building
(715)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 41
Avg. 1000 Sq. Ft. GFA: 164
Directional Distribution: 15% entering, 85% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.76	0.77 - 5.07	0.61

Data Plot and Equation



Fitted Curve Equation: T = 1.72(X) + 7.89

R^2= 0.85

Single Tenant Office Building
(715)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Saturday

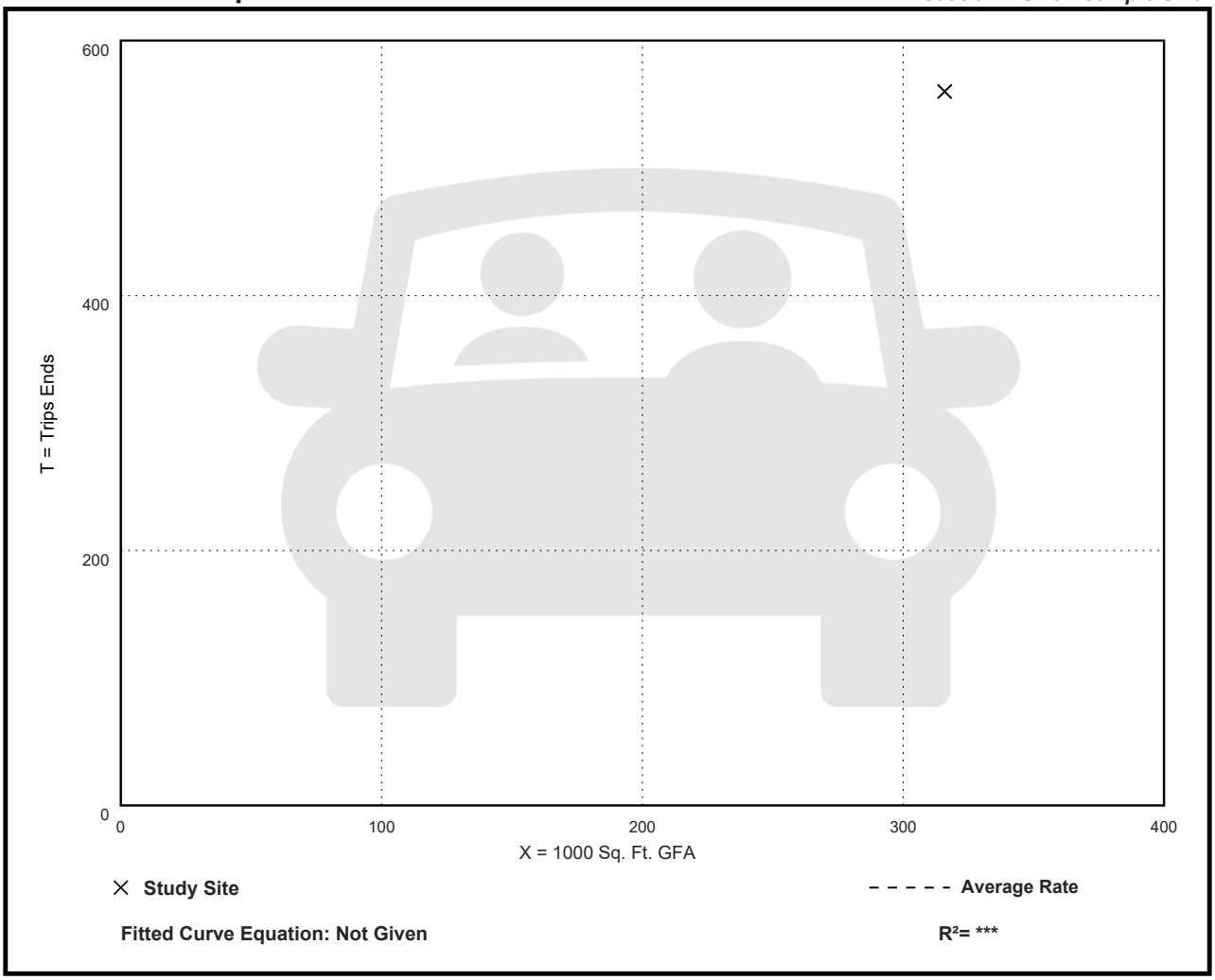
Setting/Location: General Urban/Suburban
Number of Studies: 1
Avg. 1000 Sq. Ft. GFA: 316
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.77	1.77 - 1.77	***

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= *

Single Tenant Office Building
(715)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Sunday

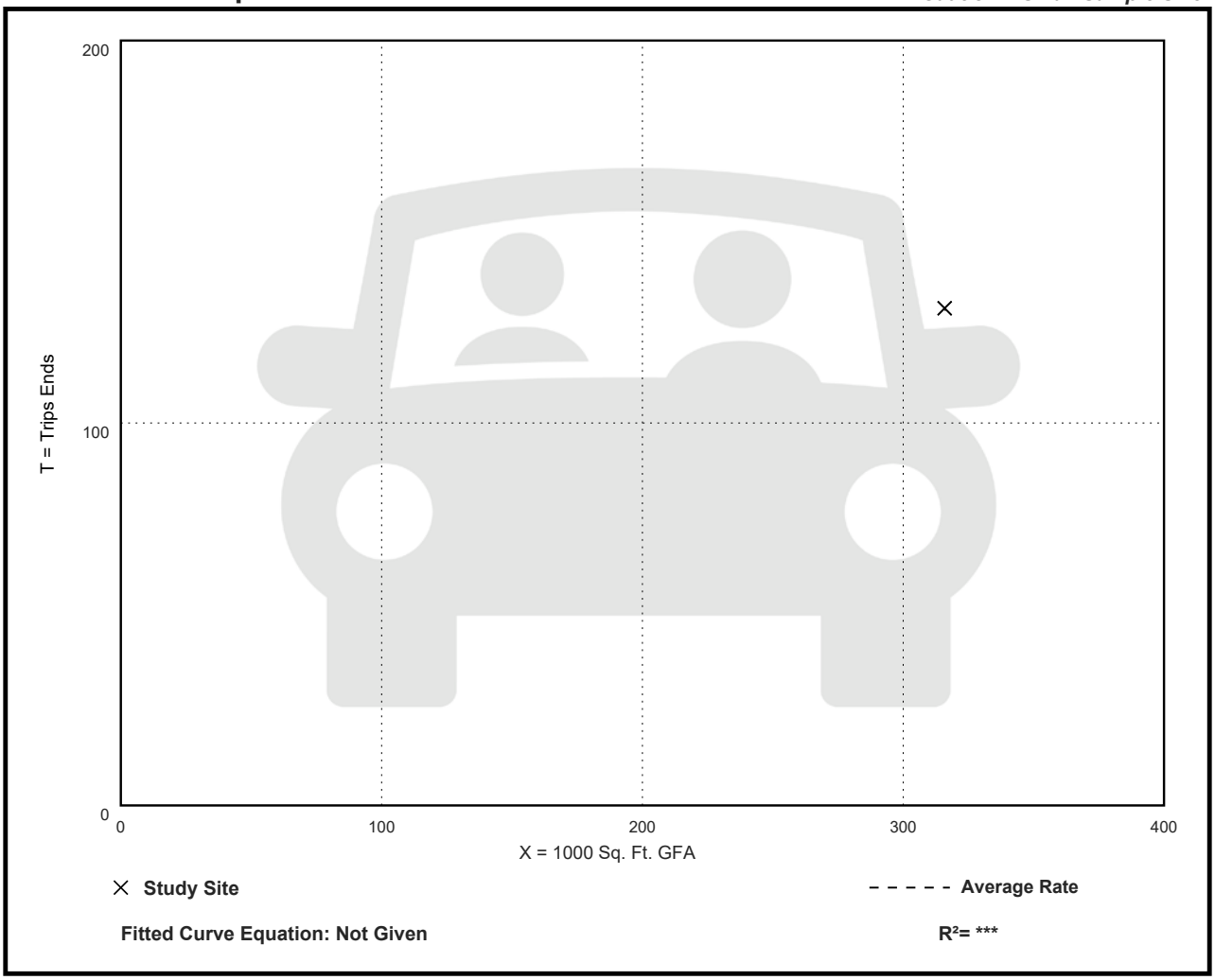
Setting/Location: General Urban/Suburban
Number of Studies: 1
Avg. 1000 Sq. Ft. GFA: 316
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.41	0.41 - 0.41	***

Data Plot and Equation

Caution – Small Sample Size



Single Tenant Office Building
(715)

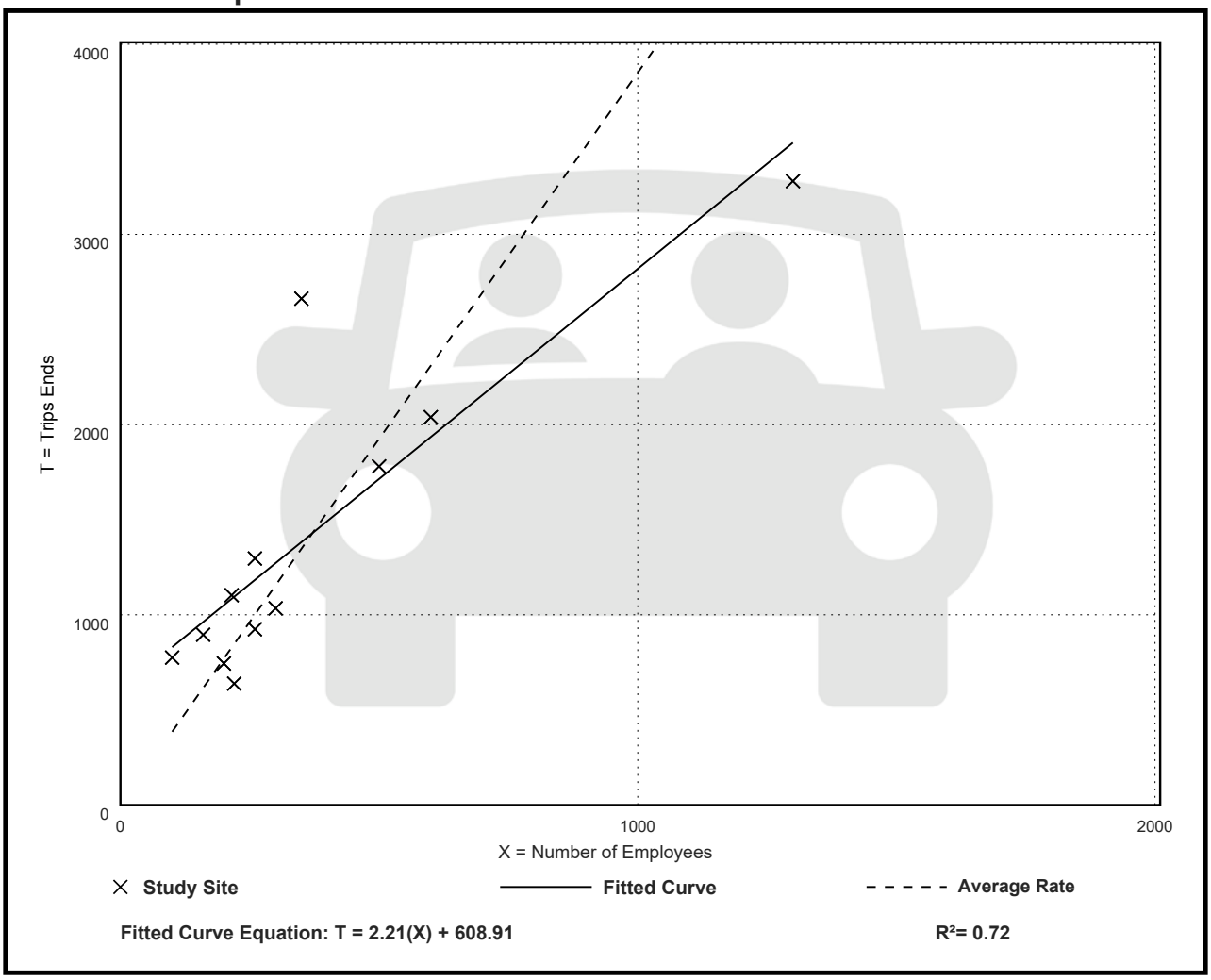
Vehicle Trip Ends vs: Employees
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 12
Avg. Num. of Employees: 372
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
3.85	2.52 - 7.75	1.59

Data Plot and Equation



Fitted Curve Equation: T = 2.21(X) + 608.91

R^2= 0.72

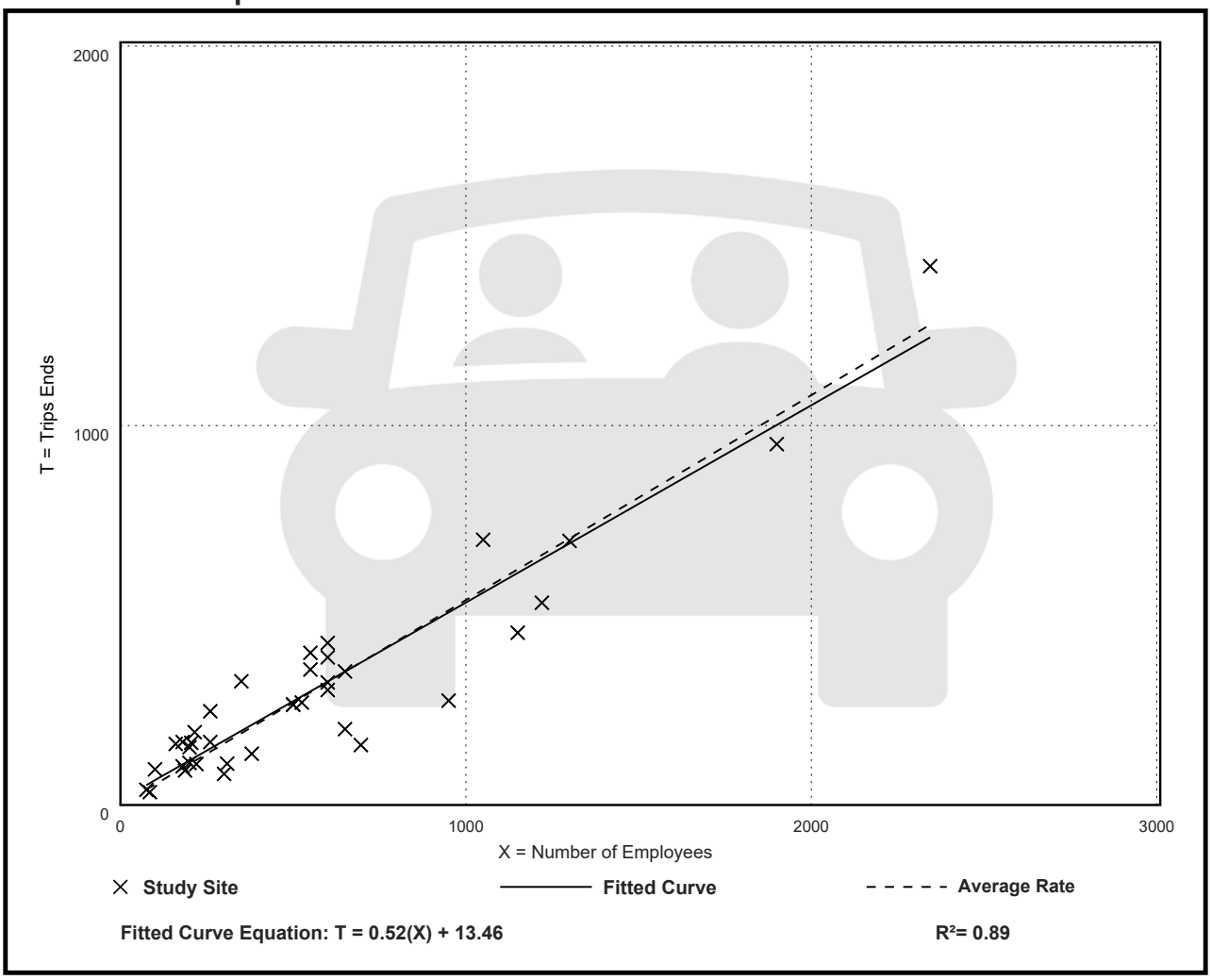
Single Tenant Office Building
(715)

Vehicle Trip Ends vs: Employees
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 37
Avg. Num. of Employees: 562
Directional Distribution: 89% entering, 11% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
0.54	0.23 - 1.01	0.17

Data Plot and Equation



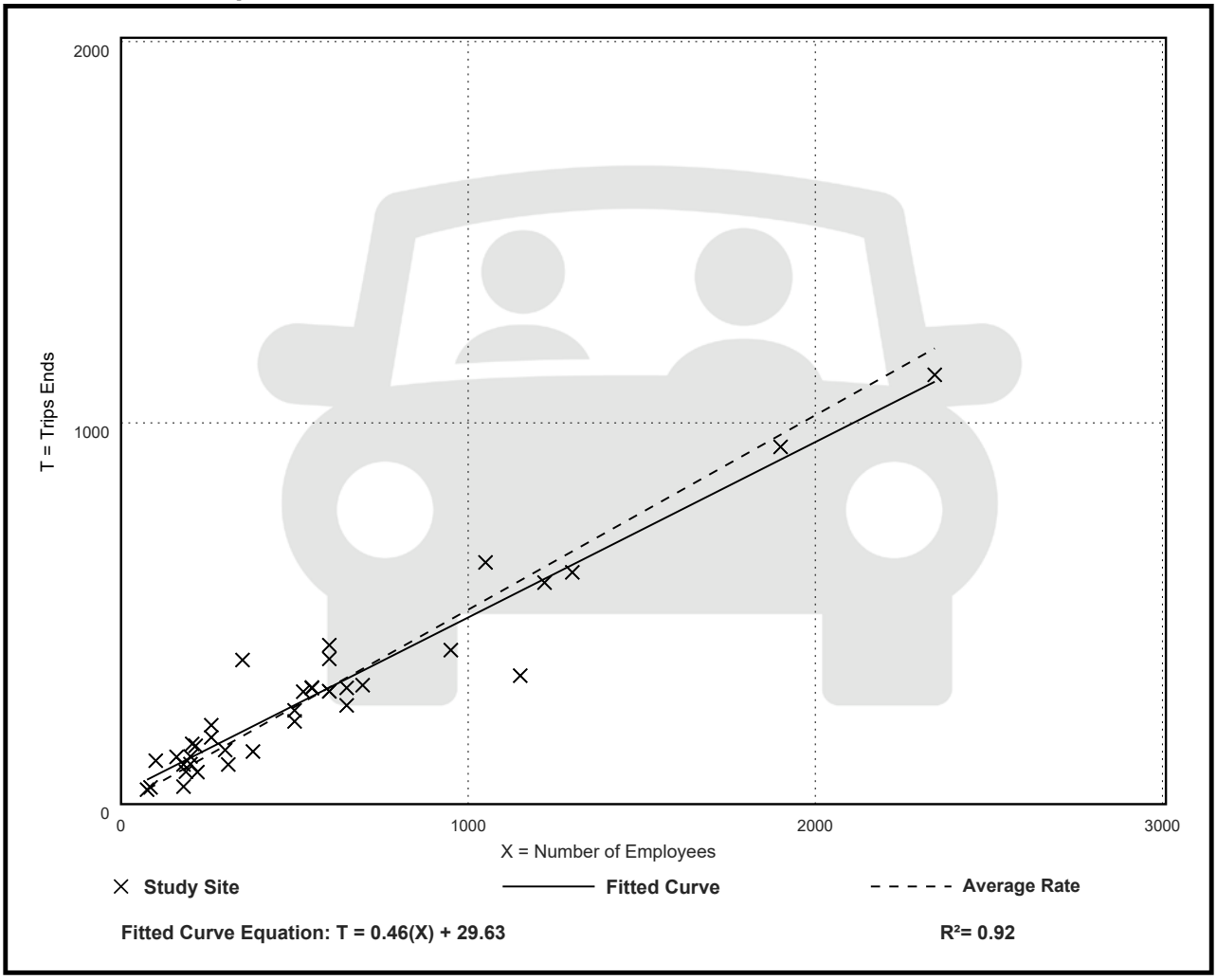
Single Tenant Office Building
(715)

Vehicle Trip Ends vs: Employees
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 37
Avg. Num. of Employees: 562
Directional Distribution: 15% entering, 85% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
0.51	0.26 - 1.14	0.14

Data Plot and Equation



Single Tenant Office Building
(715)

Vehicle Trip Ends vs: Employees
On a: Saturday

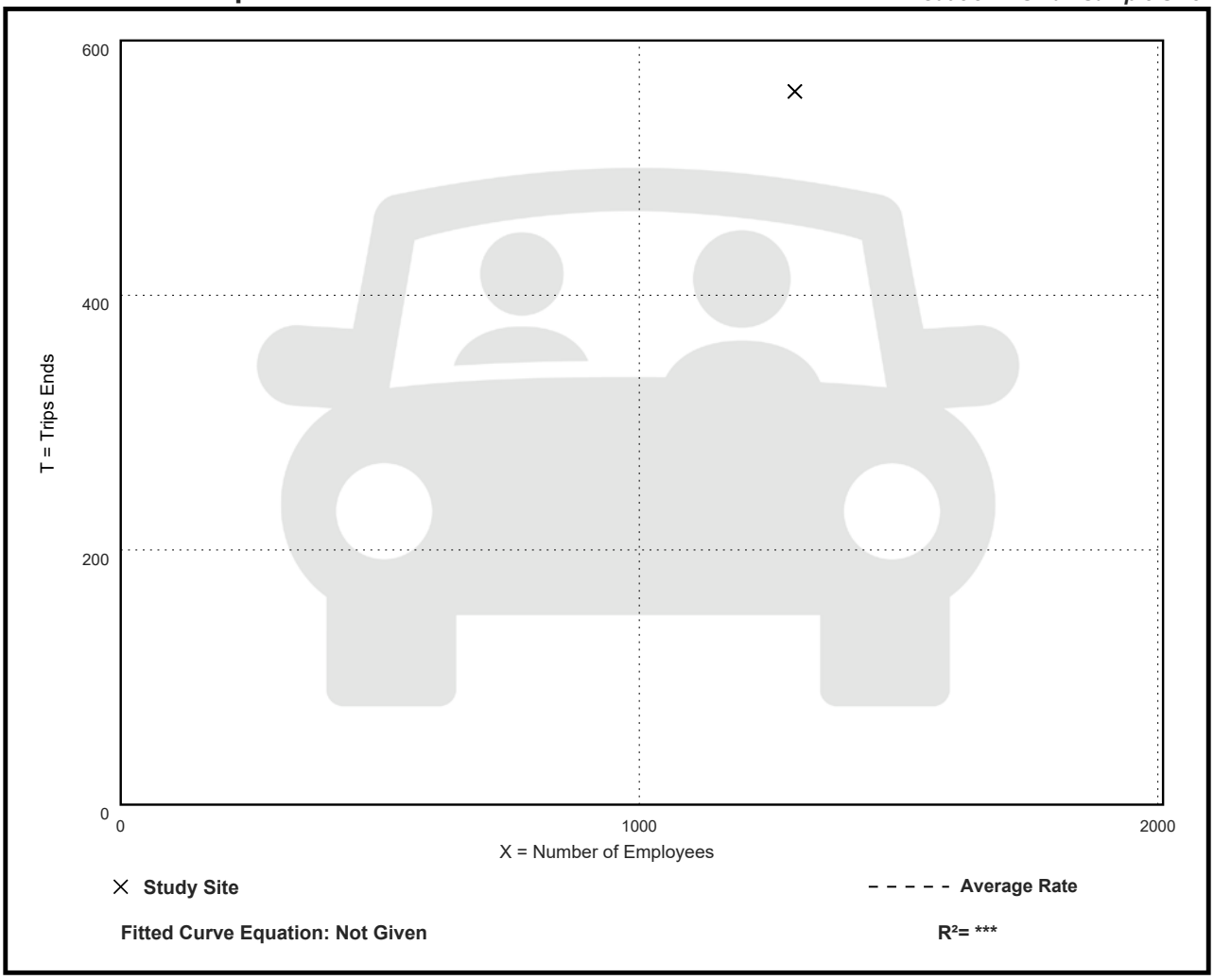
Setting/Location: General Urban/Suburban
Number of Studies: 1
Avg. Num. of Employees: 1300
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
0.43	0.43 - 0.43	***

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= *

Single Tenant Office Building
(715)

Vehicle Trip Ends vs: Employees
On a: Sunday

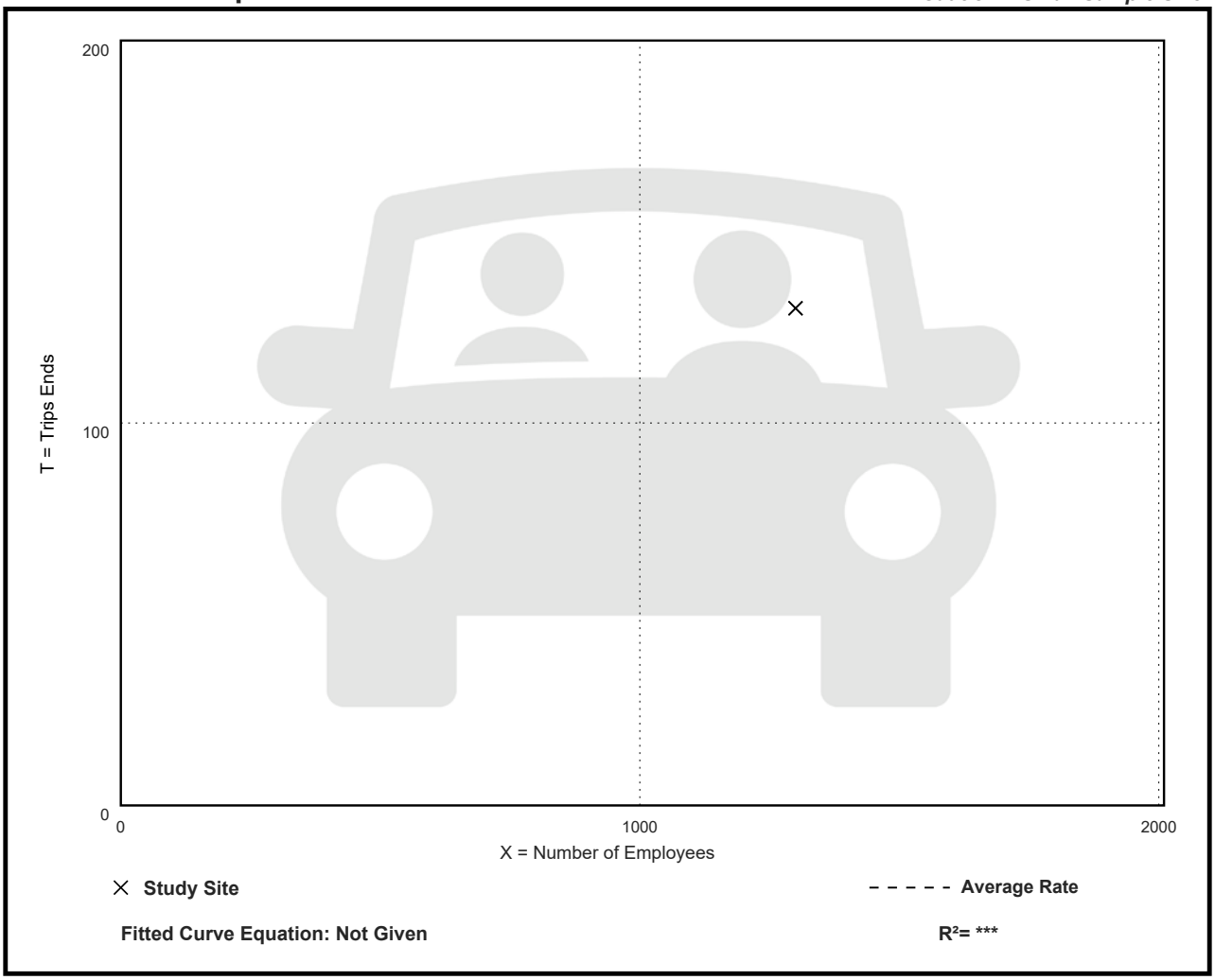
Setting/Location: General Urban/Suburban
Number of Studies: 1
Avg. Num. of Employees: 1300
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
0.10	0.10 - 0.10	***

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= *

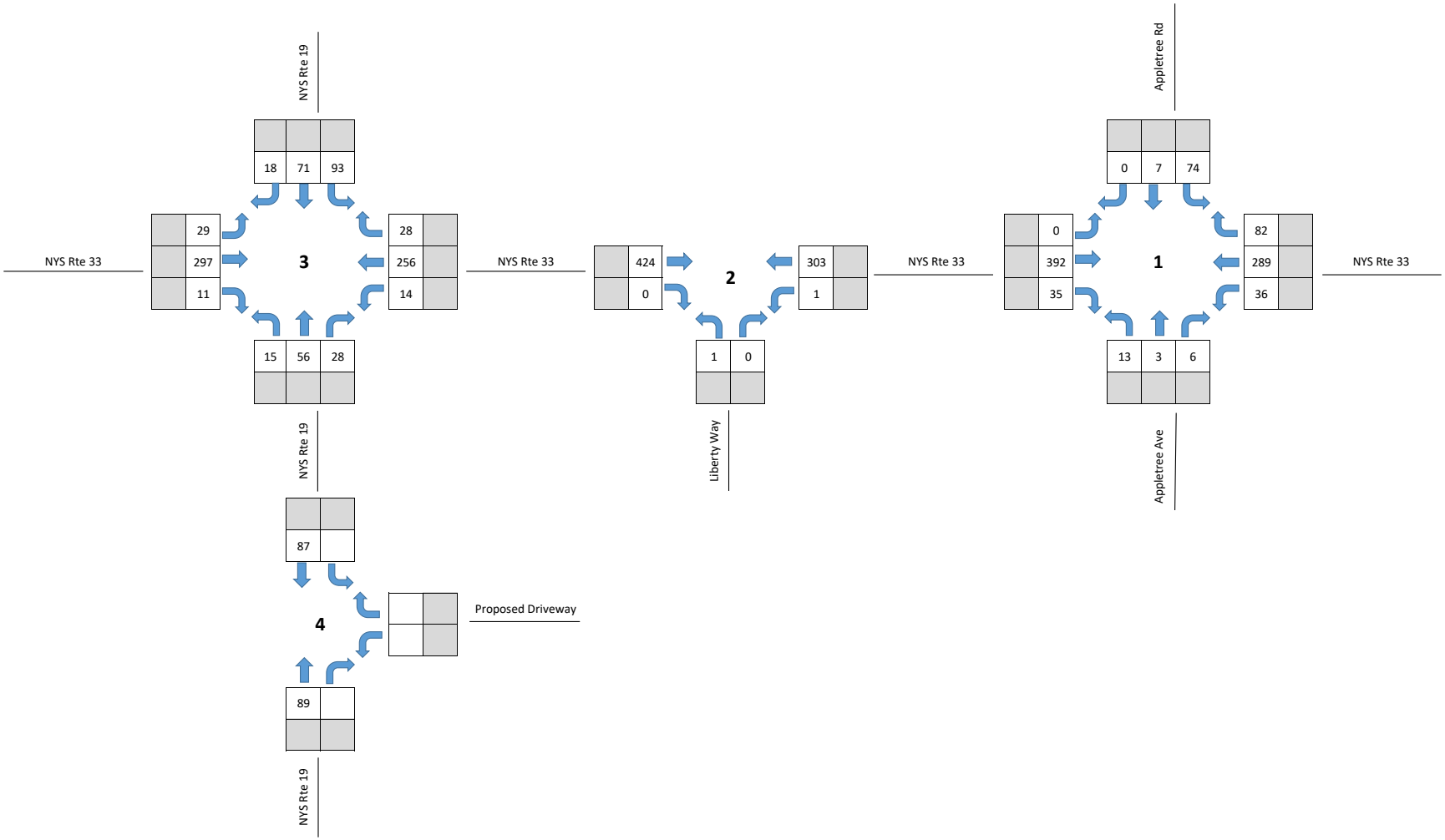
APPENDIX C

Volume Diagrams

Existing Traffic Volumes

AM Peak Hour

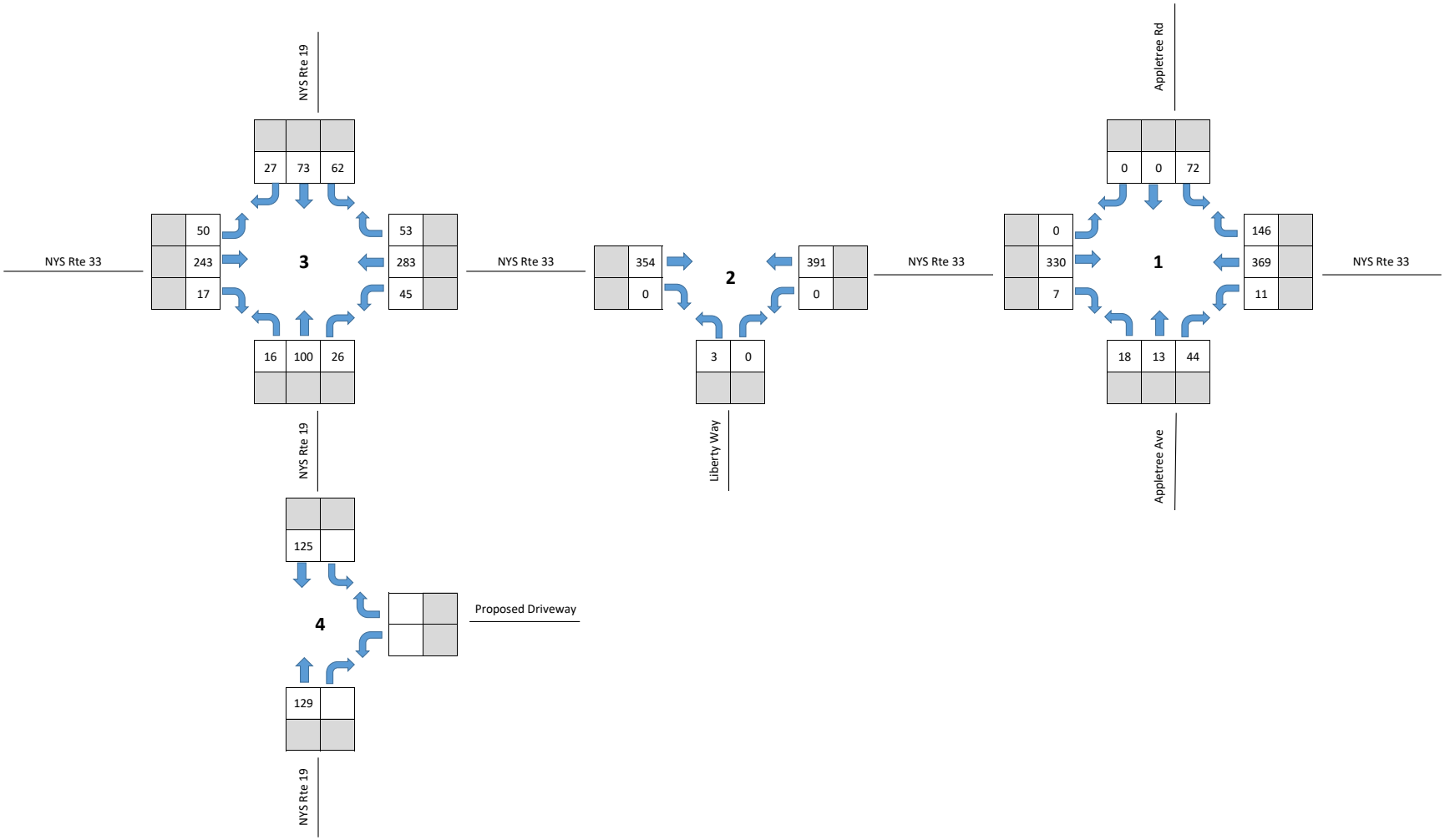
Original Data: 2024



Existing Traffic Volumes

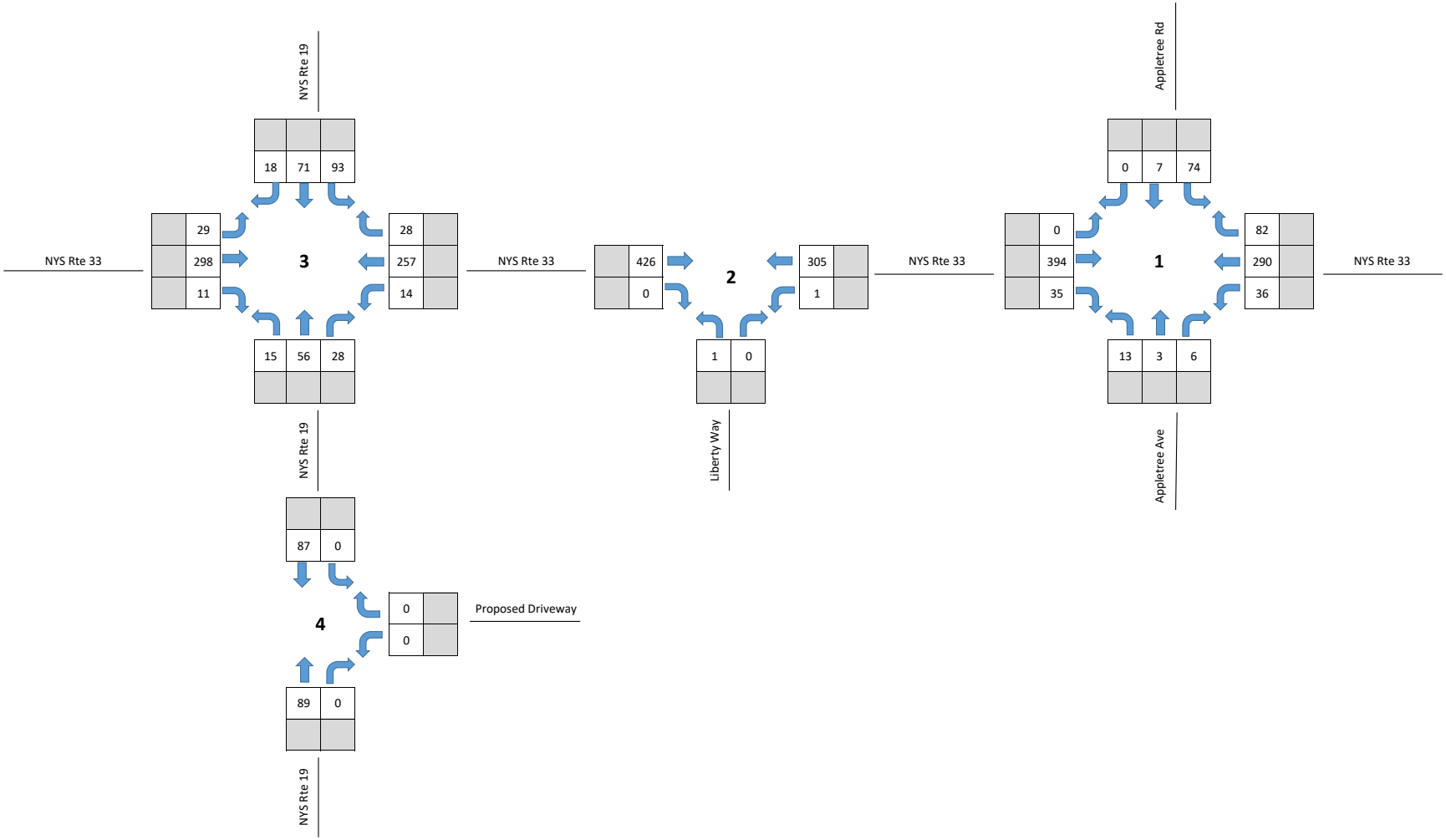
PM Peak Hour

Original Data: 2024



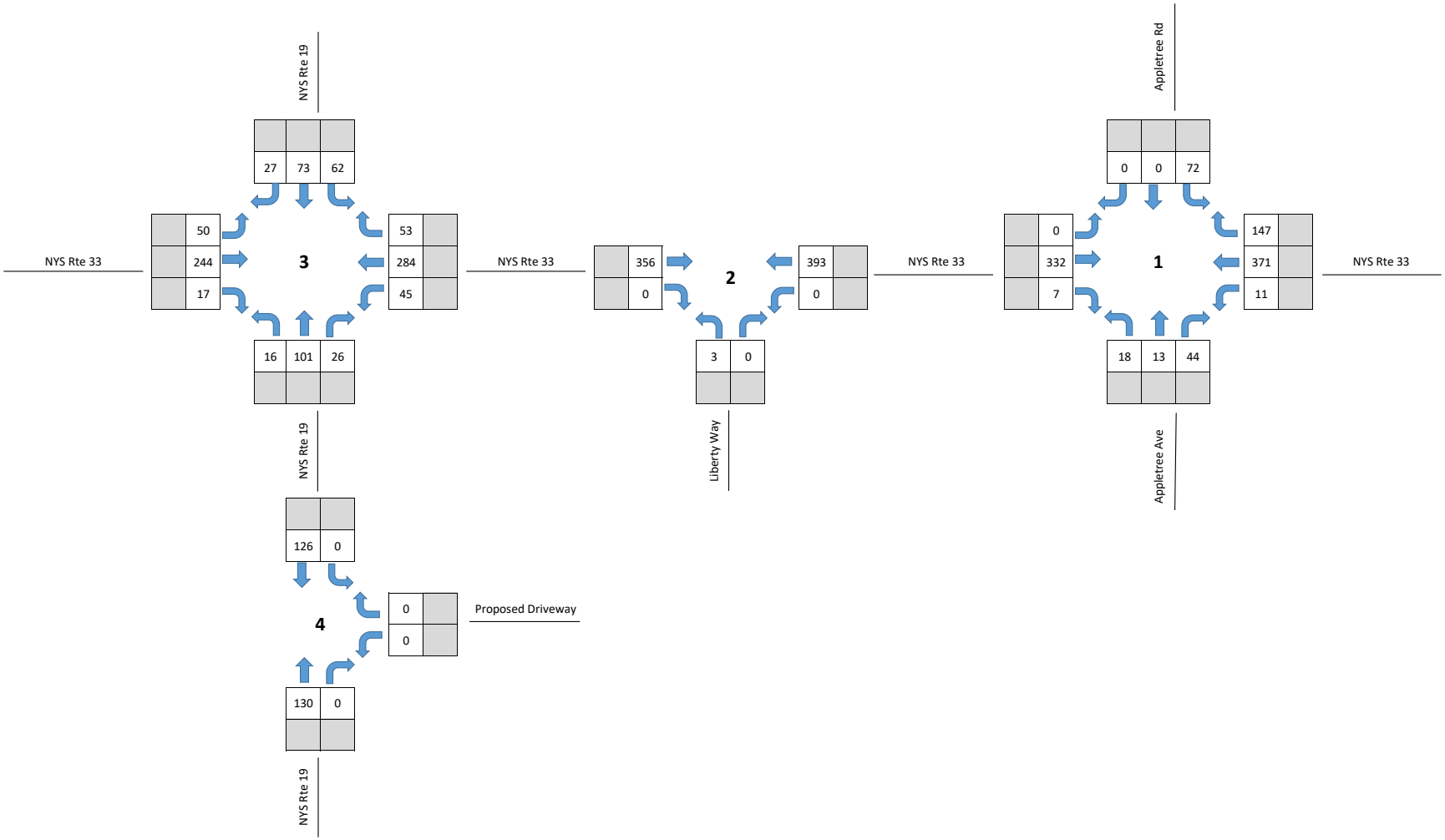
No Build Traffic Volumes

AM Peak Hour
Original Data: 2024
Future Date: 2025
Growth Rate: 0.5%



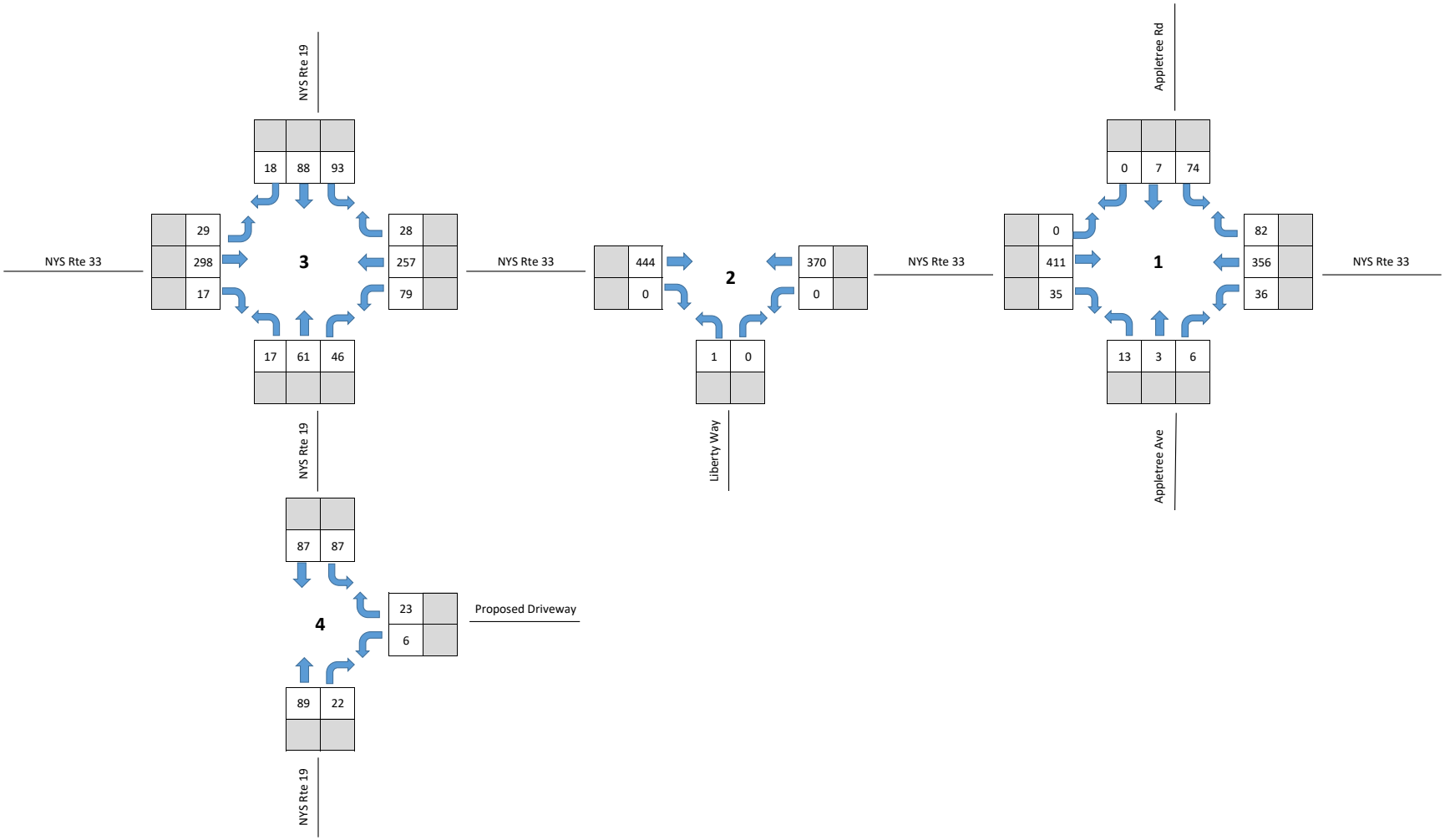
No Build Traffic Volumes

PM Peak Hour
Original Data: 2024
Future Date: 2025
Growth Rate: 0.5%



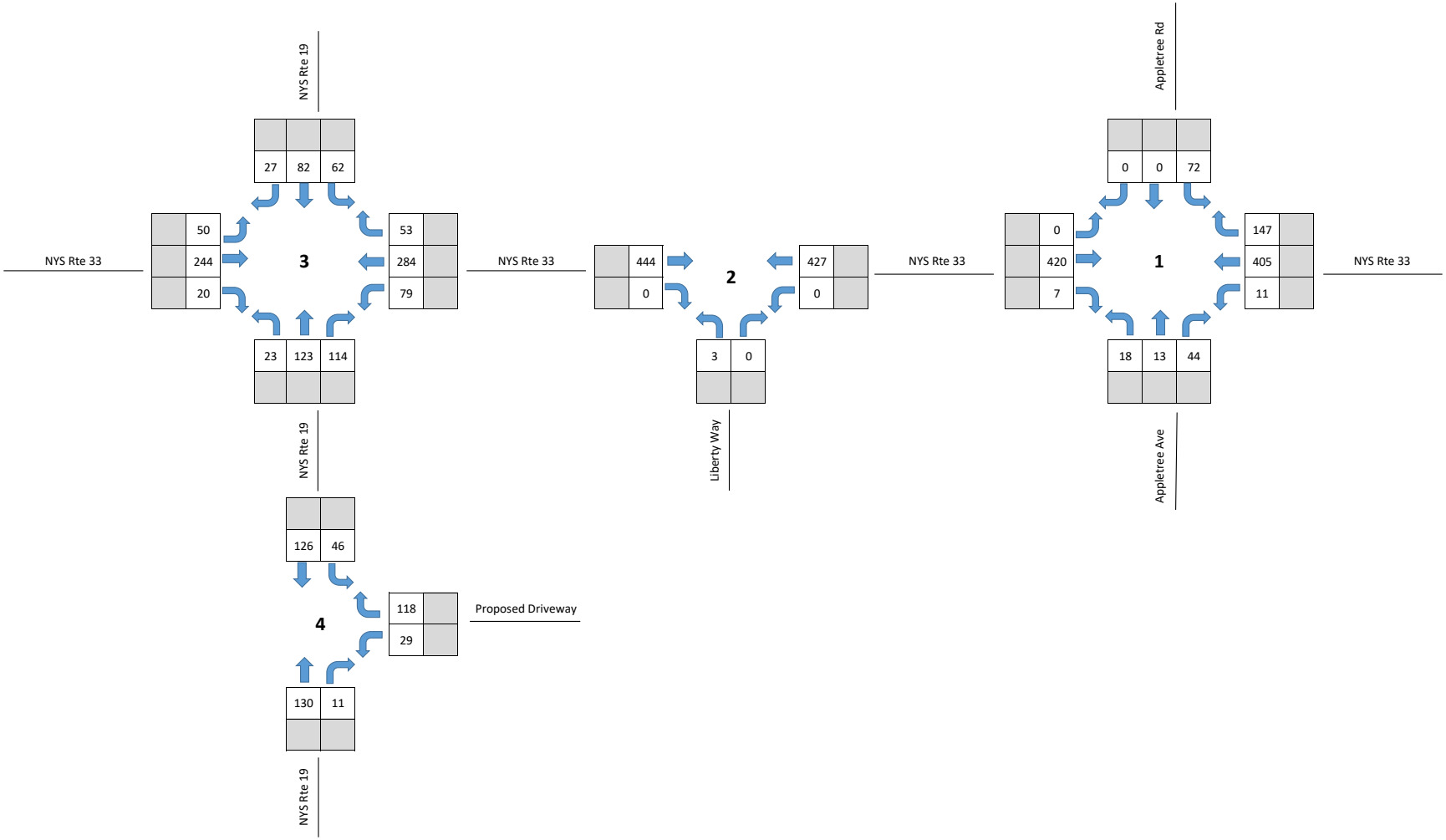
Build Traffic Volumes

AM Peak Hour
Original Data: 2024
Future Date: 2025
Growth Rate: 0.5%



Build Traffic Volumes

PM Peak Hour
Original Data: 2024
Future Date: 2025
Growth Rate: 0.5%



APPENDIX D

Synchro Reports

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	392	35	36	289	82	13	3	6	74	7	0
Future Vol, veh/h	0	392	35	36	289	82	13	3	6	74	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	150	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	436	39	40	321	91	14	3	7	82	8	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	412	0	0	475	0	0	907	948	456	908	922	367
Stage 1	-	-	-	-	-	-	456	456	-	447	447	-
Stage 2	-	-	-	-	-	-	451	492	-	461	475	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1147	-	-	1087	-	-	257	261	604	256	270	678
Stage 1	-	-	-	-	-	-	584	568	-	591	573	-
Stage 2	-	-	-	-	-	-	588	548	-	581	557	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1147	-	-	1087	-	-	244	251	604	243	260	678
Mov Cap-2 Maneuver	-	-	-	-	-	-	244	251	-	243	260	-
Stage 1	-	-	-	-	-	-	584	568	-	591	552	-
Stage 2	-	-	-	-	-	-	558	528	-	571	557	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	18.1	28.1
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	245	604	1147	-	-	1087	-	-	244
HCM Lane V/C Ratio	0.073	0.011	-	-	-	0.037	-	-	0.369
HCM Control Delay (s)	20.8	11	0	-	-	8.4	-	-	28.1
HCM Lane LOS	C	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.2	0	0	-	-	0.1	-	-	1.6

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	424	0	1	303	1	0
Future Vol, veh/h	424	0	1	303	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	493	0	1	352	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	493	0	847	493
Stage 1	-	-	-	-	493	-
Stage 2	-	-	-	-	354	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1071	-	332	576
Stage 1	-	-	-	-	614	-
Stage 2	-	-	-	-	710	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1071	-	332	576
Mov Cap-2 Maneuver	-	-	-	-	450	-
Stage 1	-	-	-	-	614	-
Stage 2	-	-	-	-	709	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	450	-	-	1071	-
HCM Lane V/C Ratio	0.003	-	-	0.001	-
HCM Control Delay (s)	13	-	-	8.4	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	29	297	11	14	256	28	15	56	28	93	71	18
Future Volume (veh/h)	29	297	11	14	256	28	15	56	28	93	71	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	367	0	17	316	0	19	69	35	115	88	18
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	520	779		482	779		535	352	178	535	453	93
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.00	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1064	1870	1585	1015	1870	1585	1288	1170	593	1290	1507	308
Grp Volume(v), veh/h	36	367	0	17	316	0	19	0	104	115	0	106
Grp Sat Flow(s),veh/h/ln	1064	1870	1585	1015	1870	1585	1288	0	1764	1290	0	1815
Q Serve(g_s), s	0.9	5.0	0.0	0.4	4.2	0.0	0.4	0.0	1.5	2.6	0.0	1.5
Cycle Q Clear(g_c), s	5.1	5.0	0.0	5.5	4.2	0.0	1.9	0.0	1.5	4.1	0.0	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		0.17
Lane Grp Cap(c), veh/h	520	779		482	779		535	0	530	535	0	546
V/C Ratio(X)	0.07	0.47		0.04	0.41		0.04	0.00	0.20	0.21	0.00	0.19
Avail Cap(c_a), veh/h	980	1588		921	1588		877	0	998	877	0	1027
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.0	7.5	0.0	9.5	7.2	0.0	9.9	0.0	9.2	10.7	0.0	9.2
Incr Delay (d2), s/veh	0.1	0.4	0.0	0.0	0.3	0.0	0.0	0.0	0.2	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.9	0.0	0.1	0.7	0.0	0.1	0.0	0.5	0.6	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.1	7.9	0.0	9.5	7.6	0.0	9.9	0.0	9.4	10.9	0.0	9.3
LnGrp LOS	A	A		A	A		A	A	A	B	A	A
Approach Vol, veh/h		403			333			123			221	
Approach Delay, s/veh		8.0			7.7			9.4			10.2	
Approach LOS		A			A			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.6		19.7		15.6		19.7				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		20.0		30.0		20.0		30.0				
Max Q Clear Time (g_c+I1), s		3.9		7.1		6.1		7.5				
Green Ext Time (p_c), s		0.2		1.0		0.5		0.8				

Intersection Summary												
HCM 6th Ctrl Delay			8.5									
HCM 6th LOS			A									

Notes

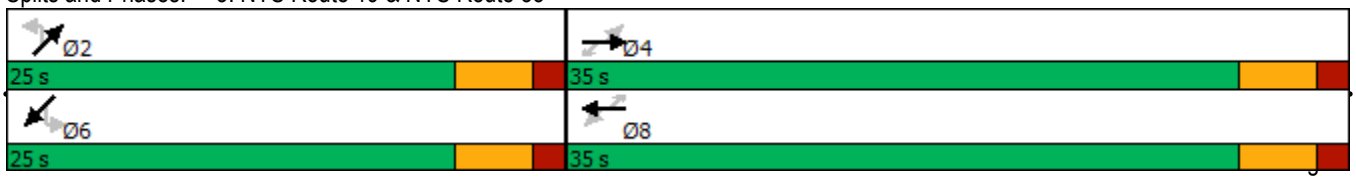
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	29	297	11	14	256	28	15	56	28	93	71	18
Future Volume (vph)	29	297	11	14	256	28	15	56	28	93	71	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		125	150		125	75		0	150		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.950			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1770	0	1770	1816	0
Flt Permitted	0.569			0.543			0.689			0.690		
Satd. Flow (perm)	1060	1863	1583	1011	1863	1583	1283	1770	0	1285	1816	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			36		35			18	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		830			723			1162			939	
Travel Time (s)		10.3			9.0			26.4			21.3	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	1.00
Adj. Flow (vph)	36	367	14	17	316	35	19	69	35	115	88	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	367	14	17	316	35	19	104	0	115	106	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	
Detector Template												
Leading Detector (ft)	10	10	0	10	10	0	10	10		10	10	
Trailing Detector (ft)	4	4	0	4	4	0	4	4		4	4	
Detector 1 Position(ft)	4	4	0	4	4	0	4	4		4	4	
Detector 1 Size(ft)	6	6	20	6	6	20	6	6		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	17.0	17.0		17.0	17.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	25.0	25.0		25.0	25.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)	58.3%	58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0	30.0	20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	None		None	None	
Act Effct Green (s)	17.0	17.0	17.0	17.0	17.0	17.0	14.6	14.6		14.6	14.6	
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.53	0.53	0.46	0.46		0.46	0.46	
v/c Ratio	0.06	0.37	0.02	0.03	0.32	0.04	0.03	0.13		0.20	0.13	
Control Delay	7.1	9.0	1.5	6.8	8.6	3.1	9.4	7.4		11.0	8.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	7.1	9.0	1.5	6.8	8.6	3.1	9.4	7.4		11.0	8.7	
LOS	A	A	A	A	A	A	A	A		B	A	
Approach Delay		8.6			8.0			7.7			9.9	
Approach LOS		A			A			A			A	
90th %ile Green (s)	16.8	16.8	16.8	16.8	16.8	16.8	12.0	12.0		12.0	12.0	
90th %ile Term Code	Gap	Gap	Gap	Hold	Hold	Hold	Min	Min		Min	Min	
70th %ile Green (s)	15.0	15.0	15.0	15.0	15.0	15.0	12.0	12.0		12.0	12.0	
70th %ile Term Code	Min	Min	Min	Min	Min	Min	Min	Min		Min	Min	
50th %ile Green (s)	15.0	15.0	15.0	15.0	15.0	15.0	12.0	12.0		12.0	12.0	
50th %ile Term Code	Min	Min	Min	Min	Min	Min	Min	Min		Min	Min	
30th %ile Green (s)	15.0	15.0	15.0	15.0	15.0	15.0	0.0	0.0		12.0	12.0	
30th %ile Term Code	Min	Min	Min	Min	Min	Min	Skip	Skip		Min	Min	
10th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
10th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Skip		Skip	Skip	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 32			
Natural Cycle: 40			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 8.6		Intersection LOS: A	
Intersection Capacity Utilization 47.5%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 38.8			
70th %ile Actuated Cycle: 37			
50th %ile Actuated Cycle: 37			
30th %ile Actuated Cycle: 37			
10th %ile Actuated Cycle: 10.3			

Splits and Phases: 3: NYS Route 19 & NYS Route 33



Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	89	0	0	87
Future Vol, veh/h	0	0	89	0	0	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	97	0	0	95

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	192	97	0	0	97	0
Stage 1	97	-	-	-	-	-
Stage 2	95	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	797	959	-	-	1496	-
Stage 1	927	-	-	-	-	-
Stage 2	929	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	797	959	-	-	1496	-
Mov Cap-2 Maneuver	797	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	929	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1496	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	330	7	11	369	146	18	13	44	72	0	0
Future Vol, veh/h	0	330	7	11	369	146	18	13	44	72	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	150	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	363	8	12	405	160	20	14	48	79	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	565	0	0	371	0	0	876	956	367	907	880	485
Stage 1	-	-	-	-	-	-	367	367	-	509	509	-
Stage 2	-	-	-	-	-	-	509	589	-	398	371	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1007	-	-	1188	-	-	269	258	678	257	286	582
Stage 1	-	-	-	-	-	-	653	622	-	547	538	-
Stage 2	-	-	-	-	-	-	547	495	-	628	620	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1007	-	-	1188	-	-	267	255	678	227	283	582
Mov Cap-2 Maneuver	-	-	-	-	-	-	267	255	-	227	283	-
Stage 1	-	-	-	-	-	-	653	622	-	547	533	-
Stage 2	-	-	-	-	-	-	541	490	-	570	620	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	14.9	29.1
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	262	678	1007	-	-	1188	-	-	227
HCM Lane V/C Ratio	0.13	0.071	-	-	-	0.01	-	-	0.349
HCM Control Delay (s)	20.8	10.7	0	-	-	8.1	-	-	29.1
HCM Lane LOS	C	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.4	0.2	0	-	-	0	-	-	1.5

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	354	0	0	391	3	0
Future Vol, veh/h	354	0	0	391	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	398	0	0	439	3	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	398	0	837	398
Stage 1	-	-	-	-	398	-
Stage 2	-	-	-	-	439	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1161	-	337	652
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	650	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1161	-	337	652
Mov Cap-2 Maneuver	-	-	-	-	457	-
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	650	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	457	-	-	1161	-
HCM Lane V/C Ratio	0.007	-	-	-	-
HCM Control Delay (s)	12.9	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	50	243	17	45	283	53	16	100	26	62	73	27
Future Volume (veh/h)	50	243	17	45	283	53	16	100	26	62	73	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	256	0	47	298	0	17	105	27	65	77	28
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	552	793		585	793		517	405	104	495	369	134
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.00	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1081	1870	1585	1124	1870	1585	1289	1435	369	1258	1309	476
Grp Volume(v), veh/h	53	256	0	47	298	0	17	0	132	65	0	105
Grp Sat Flow(s),veh/h/ln	1081	1870	1585	1124	1870	1585	1289	0	1804	1258	0	1785
Q Serve(g_s), s	1.2	3.1	0.0	1.0	3.7	0.0	0.3	0.0	1.9	1.4	0.0	1.5
Cycle Q Clear(g_c), s	4.9	3.1	0.0	4.1	3.7	0.0	1.9	0.0	1.9	3.4	0.0	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.27
Lane Grp Cap(c), veh/h	552	793		585	793		517	0	509	495	0	503
V/C Ratio(X)	0.10	0.32		0.08	0.38		0.03	0.00	0.26	0.13	0.00	0.21
Avail Cap(c_a), veh/h	1047	1650		1100	1650		912	0	1061	880	0	1049
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.4	6.5	0.0	7.9	6.7	0.0	10.0	0.0	9.5	10.8	0.0	9.3
Incr Delay (d2), s/veh	0.1	0.2	0.0	0.1	0.3	0.0	0.0	0.0	0.3	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.5	0.0	0.1	0.6	0.0	0.1	0.0	0.6	0.3	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.5	6.8	0.0	8.0	7.0	0.0	10.1	0.0	9.7	10.9	0.0	9.5
LnGrp LOS	A	A		A	A		B	A	A	B	A	A
Approach Vol, veh/h		309			345			149			170	
Approach Delay, s/veh		7.1			7.1			9.8			10.0	
Approach LOS		A			A			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.6		19.4		14.6		19.4				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		20.0		30.0		20.0		30.0				
Max Q Clear Time (g_c+I1), s		3.9		6.9		5.4		6.1				
Green Ext Time (p_c), s		0.3		0.7		0.4		0.8				

Intersection Summary												
HCM 6th Ctrl Delay			8.0									
HCM 6th LOS			A									

Notes

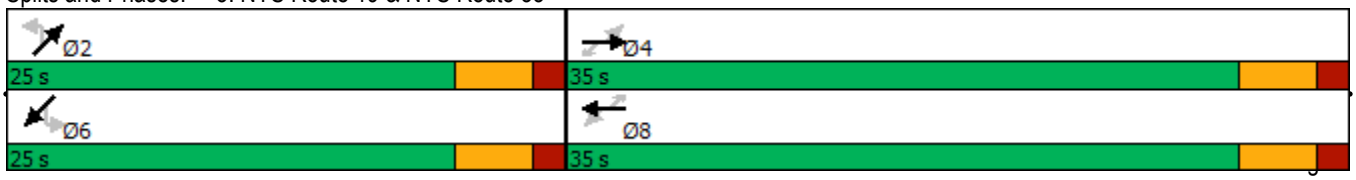
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	50	243	17	45	283	53	16	100	26	62	73	27
Future Volume (vph)	50	243	17	45	283	53	16	100	26	62	73	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		125	150		125	75		0	150		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.969			0.960	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1805	0	1770	1788	0
Flt Permitted	0.578			0.601			0.714			0.714		
Satd. Flow (perm)	1077	1863	1583	1120	1863	1583	1330	1805	0	1330	1788	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			56		23			28	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		830			723			1162			939	
Travel Time (s)		10.3			9.0			26.4			21.3	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	256	18	47	298	56	17	105	27	65	77	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	256	18	47	298	56	17	132	0	65	105	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	
Detector Template												
Leading Detector (ft)	10	10	0	10	10	0	10	10		10	10	
Trailing Detector (ft)	4	4	0	4	4	0	4	4		4	4	
Detector 1 Position(ft)	4	4	0	4	4	0	4	4		4	4	
Detector 1 Size(ft)	6	6	20	6	6	20	6	6		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	17.0	17.0		17.0	17.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	25.0	25.0		25.0	25.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)	58.3%	58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0	30.0	20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	None		None	None	
Act Effct Green (s)	18.5	18.5	18.5	18.5	18.5	18.5	14.4	14.4		14.4	14.4	
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.64	0.64	0.50	0.50		0.50	0.50	
v/c Ratio	0.08	0.21	0.02	0.07	0.25	0.05	0.03	0.14		0.10	0.12	
Control Delay	7.1	7.1	1.9	7.0	7.2	2.9	8.8	7.9		9.1	7.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	7.1	7.1	1.9	7.0	7.2	2.9	8.8	7.9		9.1	7.2	
LOS	A	A	A	A	A	A	A	A		A	A	
Approach Delay		6.8			6.6			8.0			7.9	
Approach LOS		A			A			A			A	
90th %ile Green (s)	15.0	15.0	15.0	15.0	15.0	15.0	12.0	12.0		12.0	12.0	
90th %ile Term Code	Min	Min	Min	Min	Min	Min	Min	Min		Min	Min	
70th %ile Green (s)	15.0	15.0	15.0	15.0	15.0	15.0	12.0	12.0		12.0	12.0	
70th %ile Term Code	Min	Min	Min	Min	Min	Min	Min	Min		Min	Min	
50th %ile Green (s)	15.0	15.0	15.0	15.0	15.0	15.0	12.0	12.0		12.0	12.0	
50th %ile Term Code	Min	Min	Min	Min	Min	Min	Min	Min		Min	Min	
30th %ile Green (s)	15.0	15.0	15.0	15.0	15.0	15.0	0.0	0.0		0.0	0.0	
30th %ile Term Code	Min	Min	Min	Min	Min	Min	Skip	Skip		Skip	Skip	
10th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
10th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Skip		Skip	Skip	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 28.8			
Natural Cycle: 40			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.25			
Intersection Signal Delay: 7.1		Intersection LOS: A	
Intersection Capacity Utilization 64.1%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 37			
70th %ile Actuated Cycle: 37			
50th %ile Actuated Cycle: 37			
30th %ile Actuated Cycle: 20			
10th %ile Actuated Cycle: 13			

Splits and Phases: 3: NYS Route 19 & NYS Route 33



Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	128	0	0	125
Future Vol, veh/h	0	0	128	0	0	125
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	139	0	0	136

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	275	139	0	0	139	0
Stage 1	139	-	-	-	-	-
Stage 2	136	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	715	909	-	-	1445	-
Stage 1	888	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	715	909	-	-	1445	-
Mov Cap-2 Maneuver	715	-	-	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	890	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1445	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	394	35	36	290	82	13	3	6	74	7	0
Future Vol, veh/h	0	394	35	36	290	82	13	3	6	74	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	150	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	438	39	40	322	91	14	3	7	82	8	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	413	0	0	477	0	0	910	951	458	911	925	368
Stage 1	-	-	-	-	-	-	458	458	-	448	448	-
Stage 2	-	-	-	-	-	-	452	493	-	463	477	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1146	-	-	1085	-	-	255	260	603	255	269	677
Stage 1	-	-	-	-	-	-	583	567	-	590	573	-
Stage 2	-	-	-	-	-	-	587	547	-	579	556	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1146	-	-	1085	-	-	242	250	603	243	259	677
Mov Cap-2 Maneuver	-	-	-	-	-	-	242	250	-	243	259	-
Stage 1	-	-	-	-	-	-	583	567	-	590	552	-
Stage 2	-	-	-	-	-	-	557	527	-	569	556	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	18.3	28.1
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	243	603	1146	-	-	1085	-	-	244
HCM Lane V/C Ratio	0.073	0.011	-	-	-	0.037	-	-	0.369
HCM Control Delay (s)	21	11	0	-	-	8.4	-	-	28.1
HCM Lane LOS	C	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.2	0	0	-	-	0.1	-	-	1.6

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	426	0	1	305	1	0
Future Vol, veh/h	426	0	1	305	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	495	0	1	355	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	495	0	852	495
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	357	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1069	-	330	575
Stage 1	-	-	-	-	613	-
Stage 2	-	-	-	-	708	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1069	-	330	575
Mov Cap-2 Maneuver	-	-	-	-	449	-
Stage 1	-	-	-	-	613	-
Stage 2	-	-	-	-	707	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	449	-	-	1069	-
HCM Lane V/C Ratio	0.003	-	-	0.001	-
HCM Control Delay (s)	13	-	-	8.4	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	29	298	11	14	257	28	15	56	28	93	71	18
Future Volume (veh/h)	29	298	11	14	257	28	15	56	28	93	71	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	368	0	17	317	0	19	69	35	115	88	18
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	520	779		481	779		535	352	178	535	453	93
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.00	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1063	1870	1585	1014	1870	1585	1288	1170	593	1290	1507	308
Grp Volume(v), veh/h	36	368	0	17	317	0	19	0	104	115	0	106
Grp Sat Flow(s),veh/h/ln	1063	1870	1585	1014	1870	1585	1288	0	1764	1290	0	1815
Q Serve(g_s), s	0.9	5.1	0.0	0.4	4.2	0.0	0.4	0.0	1.5	2.6	0.0	1.5
Cycle Q Clear(g_c), s	5.1	5.1	0.0	5.5	4.2	0.0	1.9	0.0	1.5	4.1	0.0	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.34	1.00		0.17
Lane Grp Cap(c), veh/h	520	779		481	779		535	0	530	535	0	546
V/C Ratio(X)	0.07	0.47		0.04	0.41		0.04	0.00	0.20	0.21	0.00	0.19
Avail Cap(c_a), veh/h	979	1587		919	1587		877	0	998	877	0	1027
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.0	7.5	0.0	9.5	7.2	0.0	9.9	0.0	9.2	10.7	0.0	9.2
Incr Delay (d2), s/veh	0.1	0.4	0.0	0.0	0.3	0.0	0.0	0.0	0.2	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.9	0.0	0.1	0.7	0.0	0.1	0.0	0.5	0.6	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.1	7.9	0.0	9.5	7.6	0.0	9.9	0.0	9.4	10.9	0.0	9.3
LnGrp LOS	A	A		A	A		A	A	A	B	A	A
Approach Vol, veh/h		404			334			123			221	
Approach Delay, s/veh		8.0			7.7			9.4			10.2	
Approach LOS		A			A			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.6		19.7		15.6		19.7				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		20.0		30.0		20.0		30.0				
Max Q Clear Time (g_c+I1), s		3.9		7.1		6.1		7.5				
Green Ext Time (p_c), s		0.2		1.0		0.5		0.8				

Intersection Summary												
HCM 6th Ctrl Delay			8.5									
HCM 6th LOS			A									

Notes

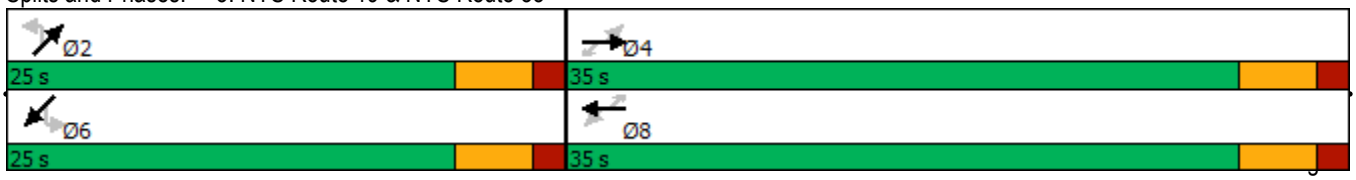
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	29	298	11	14	257	28	15	56	28	93	71	18
Future Volume (vph)	29	298	11	14	257	28	15	56	28	93	71	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		125	150		125	75		0	150		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.950			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1770	0	1770	1816	0
Flt Permitted	0.568			0.542			0.689			0.690		
Satd. Flow (perm)	1058	1863	1583	1010	1863	1583	1283	1770	0	1285	1816	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			36		35			18	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		830			723			1162			939	
Travel Time (s)		10.3			9.0			26.4			21.3	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	1.00
Adj. Flow (vph)	36	368	14	17	317	35	19	69	35	115	88	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	368	14	17	317	35	19	104	0	115	106	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	
Detector Template												
Leading Detector (ft)	10	10	0	10	10	0	10	10		10	10	
Trailing Detector (ft)	4	4	0	4	4	0	4	4		4	4	
Detector 1 Position(ft)	4	4	0	4	4	0	4	4		4	4	
Detector 1 Size(ft)	6	6	20	6	6	20	6	6		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	17.0	17.0		17.0	17.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	25.0	25.0		25.0	25.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)	58.3%	58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0	30.0	20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	None		None	None	
Act Effct Green (s)	17.0	17.0	17.0	17.0	17.0	17.0	14.6	14.6		14.6	14.6	
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.53	0.53	0.46	0.46		0.46	0.46	
v/c Ratio	0.06	0.37	0.02	0.03	0.32	0.04	0.03	0.13		0.20	0.13	
Control Delay	7.1	9.0	1.5	6.8	8.6	3.1	9.4	7.5		11.0	8.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	7.1	9.0	1.5	6.8	8.6	3.1	9.4	7.5		11.0	8.7	
LOS	A	A	A	A	A	A	A	A		B	A	
Approach Delay		8.6			8.0			7.8			9.9	
Approach LOS		A			A			A			A	
90th %ile Green (s)	16.9	16.9	16.9	16.9	16.9	16.9	12.0	12.0		12.0	12.0	
90th %ile Term Code	Gap	Gap	Gap	Hold	Hold	Hold	Min	Min		Min	Min	
70th %ile Green (s)	15.0	15.0	15.0	15.0	15.0	15.0	12.0	12.0		12.0	12.0	
70th %ile Term Code	Min	Min	Min	Min	Min	Min	Min	Min		Min	Min	
50th %ile Green (s)	15.0	15.0	15.0	15.0	15.0	15.0	12.0	12.0		12.0	12.0	
50th %ile Term Code	Min	Min	Min	Min	Min	Min	Min	Min		Min	Min	
30th %ile Green (s)	15.0	15.0	15.0	15.0	15.0	15.0	0.0	0.0		12.0	12.0	
30th %ile Term Code	Min	Min	Min	Min	Min	Min	Skip	Skip		Min	Min	
10th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
10th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Skip		Skip	Skip	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 32			
Natural Cycle: 40			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 8.6		Intersection LOS: A	
Intersection Capacity Utilization 47.5%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 38.9			
70th %ile Actuated Cycle: 37			
50th %ile Actuated Cycle: 37			
30th %ile Actuated Cycle: 37			
10th %ile Actuated Cycle: 10.3			

Splits and Phases: 3: NYS Route 19 & NYS Route 33



Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	89	0	0	87
Future Vol, veh/h	0	0	89	0	0	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	97	0	0	95

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	192	97	0	0	97	0
Stage 1	97	-	-	-	-	-
Stage 2	95	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	797	959	-	-	1496	-
Stage 1	927	-	-	-	-	-
Stage 2	929	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	797	959	-	-	1496	-
Mov Cap-2 Maneuver	797	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	929	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1496	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	332	7	11	371	147	18	13	44	72	0	0
Future Vol, veh/h	0	332	7	11	371	147	18	13	44	72	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	150	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	369	8	12	412	163	20	14	49	80	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	575	0	0	377	0	0	891	972	373	923	895	494
Stage 1	-	-	-	-	-	-	373	373	-	518	518	-
Stage 2	-	-	-	-	-	-	518	599	-	405	377	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	998	-	-	1181	-	-	263	252	673	250	280	575
Stage 1	-	-	-	-	-	-	648	618	-	541	533	-
Stage 2	-	-	-	-	-	-	541	490	-	622	616	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	998	-	-	1181	-	-	261	249	673	220	277	575
Mov Cap-2 Maneuver	-	-	-	-	-	-	261	249	-	220	277	-
Stage 1	-	-	-	-	-	-	648	618	-	541	528	-
Stage 2	-	-	-	-	-	-	536	485	-	563	616	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	15.1	30.4
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	256	673	998	-	-	1181	-	-	220
HCM Lane V/C Ratio	0.135	0.073	-	-	-	0.01	-	-	0.364
HCM Control Delay (s)	21.2	10.8	0	-	-	8.1	-	-	30.4
HCM Lane LOS	C	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.5	0.2	0	-	-	0	-	-	1.6

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	356	0	0	393	3	0
Future Vol, veh/h	356	0	0	393	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	414	0	0	457	3	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	414	0	871	414
Stage 1	-	-	-	-	414	-
Stage 2	-	-	-	-	457	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1145	-	322	638
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	638	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1145	-	322	638
Mov Cap-2 Maneuver	-	-	-	-	444	-
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	638	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	444	-	-	1145	-
HCM Lane V/C Ratio	0.008	-	-	-	-
HCM Control Delay (s)	13.2	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	50	244	17	45	284	53	16	101	26	62	73	27
Future Volume (veh/h)	50	244	17	45	284	53	16	101	26	62	73	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	62	301	0	56	351	0	20	125	32	77	90	27
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	503	789		542	789		515	419	107	482	403	121
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.00	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1030	1870	1585	1078	1870	1585	1275	1436	368	1230	1381	414
Grp Volume(v), veh/h	62	301	0	56	351	0	20	0	157	77	0	117
Grp Sat Flow(s),veh/h/ln	1030	1870	1585	1078	1870	1585	1275	0	1804	1230	0	1796
Q Serve(g_s), s	1.6	3.9	0.0	1.3	4.7	0.0	0.4	0.0	2.4	1.8	0.0	1.7
Cycle Q Clear(g_c), s	6.2	3.9	0.0	5.2	4.7	0.0	2.1	0.0	2.4	4.2	0.0	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.23
Lane Grp Cap(c), veh/h	503	789		542	789		515	0	526	482	0	524
V/C Ratio(X)	0.12	0.38		0.10	0.44		0.04	0.00	0.30	0.16	0.00	0.22
Avail Cap(c_a), veh/h	955	1609		1014	1609		875	0	1035	829	0	1030
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.4	6.9	0.0	8.7	7.2	0.0	10.2	0.0	9.6	11.2	0.0	9.4
Incr Delay (d2), s/veh	0.1	0.3	0.0	0.1	0.4	0.0	0.0	0.0	0.3	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.6	0.0	0.2	0.8	0.0	0.1	0.0	0.7	0.4	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.5	7.3	0.0	8.8	7.6	0.0	10.2	0.0	9.9	11.4	0.0	9.6
LnGrp LOS	A	A		A	A		B	A	A	B	A	A
Approach Vol, veh/h		363			407			177			194	
Approach Delay, s/veh		7.6			7.7			9.9			10.3	
Approach LOS		A			A			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.2		19.7		15.2		19.7				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		20.0		30.0		20.0		30.0				
Max Q Clear Time (g_c+I1), s		4.4		8.2		6.2		7.2				
Green Ext Time (p_c), s		0.4		0.9		0.4		1.0				

Intersection Summary												
HCM 6th Ctrl Delay			8.5									
HCM 6th LOS			A									

Notes

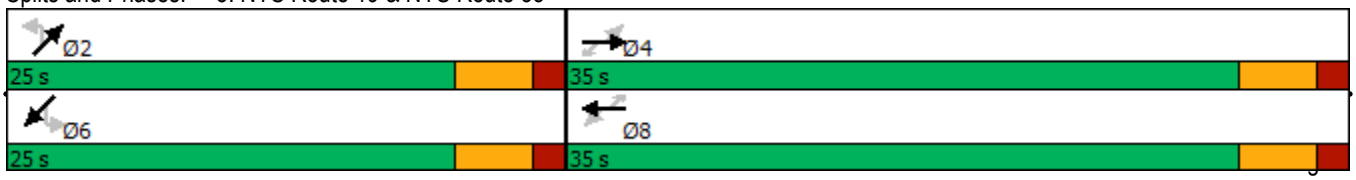
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	50	244	17	45	284	53	16	101	26	62	73	27
Future Volume (vph)	50	244	17	45	284	53	16	101	26	62	73	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		125	150		125	75		0	150		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.969			0.965	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1805	0	1770	1798	0
Flt Permitted	0.551			0.577			0.682			0.657		
Satd. Flow (perm)	1026	1863	1583	1075	1863	1583	1270	1805	0	1224	1798	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			65		23			27	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		830			723			1162			939	
Travel Time (s)		10.3			9.0			26.4			21.3	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	1.00
Adj. Flow (vph)	62	301	21	56	351	65	20	125	32	77	90	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	301	21	56	351	65	20	157	0	77	117	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	
Detector Template												
Leading Detector (ft)	10	10	0	10	10	0	10	10		10	10	
Trailing Detector (ft)	4	4	0	4	4	0	4	4		4	4	
Detector 1 Position(ft)	4	4	0	4	4	0	4	4		4	4	
Detector 1 Size(ft)	6	6	20	6	6	20	6	6		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	17.0	17.0		17.0	17.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	25.0	25.0		25.0	25.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)	58.3%	58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0	30.0	20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	None		None	None	
Act Effct Green (s)	16.9	16.9	16.9	16.9	16.9	16.9	14.6	14.6		14.6	14.6	
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.53	0.53	0.46	0.46		0.46	0.46	
v/c Ratio	0.11	0.31	0.02	0.10	0.36	0.07	0.03	0.19		0.14	0.14	
Control Delay	7.7	8.5	2.3	7.5	8.9	2.8	9.4	9.2		10.4	8.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	7.7	8.5	2.3	7.5	8.9	2.8	9.4	9.2		10.4	8.3	
LOS	A	A	A	A	A	A	A	A		B	A	
Approach Delay		8.0			7.9			9.2			9.1	
Approach LOS		A			A			A			A	
90th %ile Green (s)	16.6	16.6	16.6	16.6	16.6	16.6	12.0	12.0		12.0	12.0	
90th %ile Term Code	Hold	Hold	Hold	Gap	Gap	Gap	Min	Min		Min	Min	
70th %ile Green (s)	15.0	15.0	15.0	15.0	15.0	15.0	12.0	12.0		12.0	12.0	
70th %ile Term Code	Min	Min	Min	Min	Min	Min	Min	Min		Min	Min	
50th %ile Green (s)	15.0	15.0	15.0	15.0	15.0	15.0	12.0	12.0		12.0	12.0	
50th %ile Term Code	Min	Min	Min	Min	Min	Min	Min	Min		Min	Min	
30th %ile Green (s)	15.0	15.0	15.0	15.0	15.0	15.0	12.0	12.0		12.0	12.0	
30th %ile Term Code	Min	Min	Min	Min	Min	Min	Min	Min		Min	Min	
10th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
10th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Skip		Skip	Skip	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 32			
Natural Cycle: 40			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 8.3		Intersection LOS: A	
Intersection Capacity Utilization 64.1%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 38.6			
70th %ile Actuated Cycle: 37			
50th %ile Actuated Cycle: 37			
30th %ile Actuated Cycle: 37			
10th %ile Actuated Cycle: 10.2			

Splits and Phases: 3: NYS Route 19 & NYS Route 33



Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	129	0	0	126
Future Vol, veh/h	0	0	129	0	0	126
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	140	0	0	137

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	277	140	0	0	140	0
Stage 1	140	-	-	-	-	-
Stage 2	137	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	713	908	-	-	1443	-
Stage 1	887	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	713	908	-	-	1443	-
Mov Cap-2 Maneuver	713	-	-	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	890	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1443	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	411	35	36	356	82	13	3	6	74	7	0
Future Vol, veh/h	0	411	35	36	356	82	13	3	6	74	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	150	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	457	39	40	396	91	14	3	7	82	8	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	487	0	0	496	0	0	1003	1044	477	1004	1018	442
Stage 1	-	-	-	-	-	-	477	477	-	522	522	-
Stage 2	-	-	-	-	-	-	526	567	-	482	496	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1076	-	-	1068	-	-	221	229	588	220	237	615
Stage 1	-	-	-	-	-	-	569	556	-	538	531	-
Stage 2	-	-	-	-	-	-	535	507	-	565	545	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1076	-	-	1068	-	-	209	221	588	209	228	615
Mov Cap-2 Maneuver	-	-	-	-	-	-	209	221	-	209	228	-
Stage 1	-	-	-	-	-	-	569	556	-	538	511	-
Stage 2	-	-	-	-	-	-	507	488	-	555	545	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	20.2	34.2
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	211	588	1076	-	-	1068	-	-	211
HCM Lane V/C Ratio	0.084	0.011	-	-	-	0.037	-	-	0.427
HCM Control Delay (s)	23.6	11.2	0	-	-	8.5	-	-	34.2
HCM Lane LOS	C	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.3	0	0	-	-	0.1	-	-	2

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	444	0	0	370	1	0
Future Vol, veh/h	444	0	0	370	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	516	0	0	430	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	516	0	946	516
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	430	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1050	-	290	559
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	656	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1050	-	290	559
Mov Cap-2 Maneuver	-	-	-	-	418	-
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	656	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	418	-	-	1050	-
HCM Lane V/C Ratio	0.003	-	-	-	-
HCM Control Delay (s)	13.6	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	29	298	17	79	257	28	17	61	46	93	88	18
Future Volume (veh/h)	29	298	17	79	257	28	17	61	46	93	88	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	368	0	98	317	0	21	75	57	115	109	18
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	514	774		476	774		523	302	229	515	479	79
Arrive On Green	0.41	0.41	0.00	0.41	0.41	0.00	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1063	1870	1585	1014	1870	1585	1264	986	749	1258	1565	258
Grp Volume(v), veh/h	36	368	0	98	317	0	21	0	132	115	0	127
Grp Sat Flow(s),veh/h/ln	1063	1870	1585	1014	1870	1585	1264	0	1735	1258	0	1824
Q Serve(g_s), s	0.9	5.1	0.0	2.8	4.3	0.0	0.4	0.0	2.0	2.7	0.0	1.9
Cycle Q Clear(g_c), s	5.1	5.1	0.0	7.9	4.3	0.0	2.3	0.0	2.0	4.7	0.0	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.43	1.00		0.14
Lane Grp Cap(c), veh/h	514	774		476	774		523	0	531	515	0	558
V/C Ratio(X)	0.07	0.48		0.21	0.41		0.04	0.00	0.25	0.22	0.00	0.23
Avail Cap(c_a), veh/h	969	1573		909	1573		845	0	973	835	0	1023
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.2	7.6	0.0	10.5	7.4	0.0	10.1	0.0	9.3	11.1	0.0	9.2
Incr Delay (d2), s/veh	0.1	0.5	0.0	0.2	0.3	0.0	0.0	0.0	0.2	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.9	0.0	0.4	0.8	0.0	0.1	0.0	0.6	0.6	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.3	8.1	0.0	10.7	7.7	0.0	10.1	0.0	9.5	11.3	0.0	9.4
LnGrp LOS	A	A		B	A		B	A	A	B	A	A
Approach Vol, veh/h		404			415			153			242	
Approach Delay, s/veh		8.2			8.4			9.6			10.3	
Approach LOS		A			A			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.9		19.8		15.9		19.8				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		20.0		30.0		20.0		30.0				
Max Q Clear Time (g_c+I1), s		4.3		7.1		6.7		9.9				
Green Ext Time (p_c), s		0.3		1.0		0.5		1.1				

Intersection Summary												
HCM 6th Ctrl Delay			8.9									
HCM 6th LOS			A									

Notes

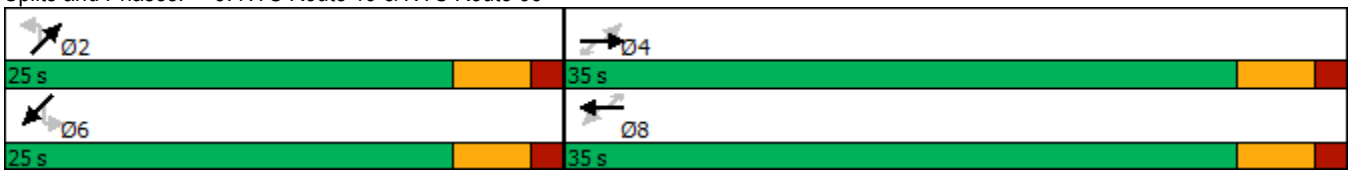
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	29	298	17	79	257	28	17	61	46	93	88	18
Future Volume (vph)	29	298	17	79	257	28	17	61	46	93	88	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		125	150		125	75		0	150		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.935			0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1742	0	1770	1824	0
Flt Permitted	0.568			0.542			0.676			0.673		
Satd. Flow (perm)	1058	1863	1583	1010	1863	1583	1259	1742	0	1254	1824	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			36		57			15	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		830			723			1162			939	
Travel Time (s)		10.3			9.0			26.4			21.3	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	1.00
Adj. Flow (vph)	36	368	21	98	317	35	21	75	57	115	109	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	368	21	98	317	35	21	132	0	115	127	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	
Detector Template												
Leading Detector (ft)	10	10	0	10	10	0	10	10		10	10	
Trailing Detector (ft)	4	4	0	4	4	0	4	4		4	4	
Detector 1 Position(ft)	4	4	0	4	4	0	4	4		4	4	
Detector 1 Size(ft)	6	6	20	6	6	20	6	6		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	17.0	17.0		17.0	17.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	25.0	25.0		25.0	25.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)	58.3%	58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0	30.0	20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	None		None	None	
Act Effct Green (s)	17.0	17.0	17.0	17.0	17.0	17.0	14.6	14.6		14.6	14.6	
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.53	0.53	0.46	0.46		0.46	0.46	
v/c Ratio	0.06	0.37	0.02	0.18	0.32	0.04	0.04	0.16		0.20	0.15	
Control Delay	7.1	9.1	2.3	8.4	8.6	3.2	9.5	6.9		11.1	9.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	7.1	9.1	2.3	8.4	8.6	3.2	9.5	6.9		11.1	9.3	
LOS	A	A	A	A	A	A	A	A		B	A	
Approach Delay		8.6			8.1			7.2			10.1	
Approach LOS		A			A			A			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 32			
Natural Cycle: 40			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 8.6		Intersection LOS: A	
Intersection Capacity Utilization 52.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: NYS Route 19 & NYS Route 33



Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	23	89	22	87	87
Future Vol, veh/h	6	23	89	22	87	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	25	97	24	95	95

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	394	109	0	0	121	0
Stage 1	109	-	-	-	-	-
Stage 2	285	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	611	945	-	-	1467	-
Stage 1	916	-	-	-	-	-
Stage 2	763	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	569	945	-	-	1467	-
Mov Cap-2 Maneuver	569	-	-	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	711	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	3.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	569	945	1467	-
HCM Lane V/C Ratio	-	-	0.011	0.026	0.064	-
HCM Control Delay (s)	-	-	11.4	8.9	7.6	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0.1	0.2	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	420	7	11	405	147	18	13	44	72	0	0
Future Vol, veh/h	0	420	7	11	405	147	18	13	44	72	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	150	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	467	8	12	450	163	20	14	49	80	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	613	0	0	475	0	0	1027	1108	471	1059	1031	532
Stage 1	-	-	-	-	-	-	471	471	-	556	556	-
Stage 2	-	-	-	-	-	-	556	637	-	503	475	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	966	-	-	1087	-	-	213	210	593	202	233	547
Stage 1	-	-	-	-	-	-	573	560	-	515	513	-
Stage 2	-	-	-	-	-	-	515	471	-	551	557	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	966	-	-	1087	-	-	211	208	593	174	230	547
Mov Cap-2 Maneuver	-	-	-	-	-	-	211	208	-	174	230	-
Stage 1	-	-	-	-	-	-	573	560	-	515	507	-
Stage 2	-	-	-	-	-	-	509	466	-	493	557	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	17.3	42.2
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	210	593	966	-	-	1087	-	-	174
HCM Lane V/C Ratio	0.164	0.082	-	-	-	0.011	-	-	0.46
HCM Control Delay (s)	25.5	11.6	0	-	-	8.3	-	-	42.2
HCM Lane LOS	D	B	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	0.6	0.3	0	-	-	0	-	-	2.2

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	444	0	0	427	3	0
Future Vol, veh/h	444	0	0	427	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	516	0	0	497	3	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	516	0	1013	516
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	497	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1050	-	265	559
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	611	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1050	-	265	559
Mov Cap-2 Maneuver	-	-	-	-	397	-
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	611	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	397	-	-	1050	-
HCM Lane V/C Ratio	0.009	-	-	-	-
HCM Control Delay (s)	14.1	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	50	244	20	79	284	53	23	123	114	62	82	27
Future Volume (veh/h)	50	244	20	79	284	53	23	123	114	62	82	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	62	301	0	98	351	0	28	152	141	77	101	27
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	477	763		515	763		532	283	263	390	451	121
Arrive On Green	0.41	0.41	0.00	0.41	0.41	0.00	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1030	1870	1585	1078	1870	1585	1262	893	828	1086	1422	380
Grp Volume(v), veh/h	62	301	0	98	351	0	28	0	293	77	0	128
Grp Sat Flow(s),veh/h/ln	1030	1870	1585	1078	1870	1585	1262	0	1721	1086	0	1802
Q Serve(g_s), s	1.7	4.1	0.0	2.6	5.0	0.0	0.6	0.0	5.1	2.3	0.0	1.9
Cycle Q Clear(g_c), s	6.7	4.1	0.0	6.7	5.0	0.0	2.5	0.0	5.1	7.4	0.0	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.48	1.00		0.21
Lane Grp Cap(c), veh/h	477	763		515	763		532	0	546	390	0	571
V/C Ratio(X)	0.13	0.39		0.19	0.46		0.05	0.00	0.54	0.20	0.00	0.22
Avail Cap(c_a), veh/h	907	1543		965	1543		826	0	947	643	0	991
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.3	7.6	0.0	10.0	7.8	0.0	10.1	0.0	10.2	13.3	0.0	9.1
Incr Delay (d2), s/veh	0.1	0.3	0.0	0.2	0.4	0.0	0.0	0.0	0.8	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.8	0.0	0.4	0.9	0.0	0.1	0.0	1.5	0.5	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.4	7.9	0.0	10.1	8.3	0.0	10.1	0.0	11.0	13.5	0.0	9.3
LnGrp LOS	B	A		B	A		B	A	B	B	A	A
Approach Vol, veh/h		363			449			321			205	
Approach Delay, s/veh		8.3			8.7			11.0			10.9	
Approach LOS		A			A			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.5		19.8		16.5		19.8				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		20.0		30.0		20.0		30.0				
Max Q Clear Time (g_c+I1), s		7.1		8.7		9.4		8.7				
Green Ext Time (p_c), s		0.7		0.9		0.4		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			9.5									
HCM 6th LOS			A									

Notes

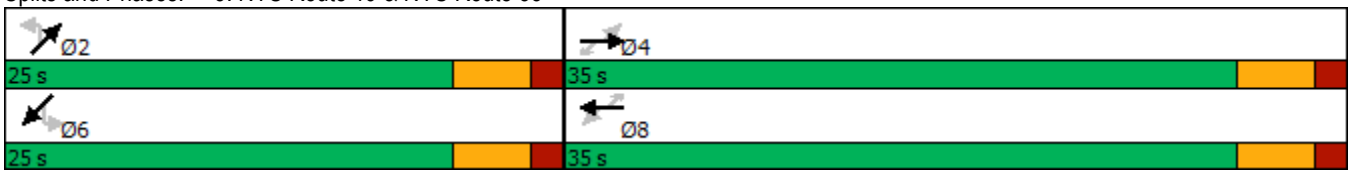
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	50	244	20	79	284	53	23	123	114	62	82	27
Future Volume (vph)	50	244	20	79	284	53	23	123	114	62	82	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		125	150		125	75		0	150		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.928			0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1729	0	1770	1803	0
Flt Permitted	0.534			0.577			0.675			0.581		
Satd. Flow (perm)	995	1863	1583	1075	1863	1583	1257	1729	0	1082	1803	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			65		83			24	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		830			723			1162			939	
Travel Time (s)		10.3			9.0			26.4			21.3	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	1.00
Adj. Flow (vph)	62	301	25	98	351	65	28	152	141	77	101	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	301	25	98	351	65	28	293	0	77	128	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1	0	1	1		1	1	
Detector Template												
Leading Detector (ft)	10	10	0	10	10	0	10	10		10	10	
Trailing Detector (ft)	4	4	0	4	4	0	4	4		4	4	
Detector 1 Position(ft)	4	4	0	4	4	0	4	4		4	4	
Detector 1 Size(ft)	6	6	20	6	6	20	6	6		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	12.0	12.0		12.0	12.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	17.0	17.0		17.0	17.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0	35.0	25.0	25.0		25.0	25.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Total Split (%)	58.3%	58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%		41.7%	41.7%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0	30.0	20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	None		None	None	
Act Effct Green (s)	15.8	15.8	15.8	15.8	15.8	15.8	12.6	12.6		12.6	12.6	
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	0.41	0.33	0.33		0.33	0.33	
v/c Ratio	0.15	0.39	0.04	0.22	0.46	0.09	0.07	0.47		0.22	0.21	
Control Delay	8.5	10.0	2.9	9.1	10.7	3.1	9.8	10.4		11.6	9.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	8.5	10.0	2.9	9.1	10.7	3.1	9.8	10.4		11.6	9.2	
LOS	A	A	A	A	B	A	A	B		B	A	
Approach Delay		9.3			9.5			10.3			10.1	
Approach LOS		A			A			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 38.4			
Natural Cycle: 40			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 9.7		Intersection LOS: A	
Intersection Capacity Utilization 67.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: NYS Route 19 & NYS Route 33



Intersection	
Int Delay, s/veh	3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	118	130	11	46	126
Future Vol, veh/h	29	118	130	11	46	126
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	128	141	12	50	137

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	384	147	0	0	153	0
Stage 1	147	-	-	-	-	-
Stage 2	237	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	619	900	-	-	1428	-
Stage 1	880	-	-	-	-	-
Stage 2	802	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	595	900	-	-	1428	-
Mov Cap-2 Maneuver	595	-	-	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	772	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	595	900	1428	-
HCM Lane V/C Ratio	-	-	0.053	0.143	0.035	-
HCM Control Delay (s)	-	-	11.4	9.7	7.6	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.5	0.1	-

APPENDIX E

Traffic Signal Records

D252467

FED. ROAD REG. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
I	N.Y.		4F6	

TRAFFIC SIGNAL INSTALLATION AND
MODIFICATION ON VARIOUS STATE HIGHWAYS
REGIONS 4 AND 6

DRAFTED BY _____ DATE _____
CHECKED BY _____
ESTIMATED BY _____
CHECKED BY _____
DESIGNED BY _____
CHECKED BY _____
IN CHARGE OF _____

POLE NOTES:

SPAN LENGTH = 110 L.F.
POLE HEIGHT = 32 L.F.
MAXIMUM LOAD = 6000 LBS.
OVERTURNING MOMENT = 183 FT. KIPS.
FOUNDATION CODE = M-12

NORTH

RTE. 19 ℄
RTE. 33 ℄
45'
36'
49'
14'
14'
12'
44'

10206.0315(42') 175'
10206.0320(133')
680.520105
680.71

10680.9903
10680.9905

680.54
680.72

10206.0320
680.520108 24'
680.700608
680.950206

10206.0320
680.520103 16'

680.510301

10206.0315(90') 100'
10206.0320(10')
680.520108(2)
680.71(4)

10206.0320
680.520108(2) 14'
680.71(8)
15680.950206

680.500
680.600632
680.503245

10206.0315 8'
680.520103

680.54
680.72

680.510201
4' 10206.0320
680.520103
680.54
680.72

PARKING LOT
BL 60-86
Loop No. 10
6'x18'
BL 60-88
255 RTC1
SONIC DETECTOR
BL 60-87-1
ROAD NARROWS
ROW
CURB
GRAVEL E.S.
A-672+00
RTE. 19
C.V.
PUMP ISLAND
CONC. PAD
D.I.
DO NOT ENTER
YIELD
DEADMAN
CONC. CURB
Ø2
Ø1
Loop No. 5
6'x18'

10206.0315(80')
10206.0320(5') 85'
680.520108(2)
680.71(2)

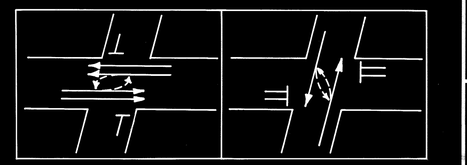
680.510301

10206.0315 8'
680.520103

10206.0315(115')
10206.0320(95') 210'
680.520105
680.71

460'± TO STOP BAR
LOOP NO. 2
6'x6'
668+00
669+00
RAISED ASPH. ISLAND
GRAVEL DRIVE
R.O.W.
NO PARKING
220'
10206.0315(132')
10206.0320(88')
680.520105
680.71
680.510201
10206.0315(54') 220'
10206.0320(166')
680.520105
680.71
680.510201
4' 10206.0320
680.520103
680.54
680.72
CONC. PAD
680.510301
10206.0315 18'
680.520103
PARKING
GENESEE & MUSEUM
M.M. 19 41.03
SOUTH
156
10206.0315(55') 220'
10206.0320(165')
680.520105
680.71
680.510201
10206.0320 210'
680.520105
680.71
680.510201
10206.0320 10'
680.520103
GRAVEL DR.
BL 60-89
A-669+00
R.O.W.
G.V.
Loop No. 8
6'x6'
450'± TO STOP BAR
680.54
680.72
Loop No. 1
6'x6'
670+00
A-670+00
SIGN CLUSTER
RAISED ASPHALT ISLAND
DO NOT ENTER
YIELD
14 RTC 38
SIGNAL POLE
10680.9910
680.7001
680.731914
680.8101(24)
680.8112(4)
680.8120
10680.9903
10680.9905
DIESEL
SUNOCO
BERGEN PLAZA
1 STORY WOOD FRAME
Loop No. 3
6'x6'
671+00
672+00
RTE. 33
680.54
680.72
SIGN CLUSTER
GRAVEL AREA
CURB
CONC. CURB
SUGAR CREEK
680.510201
10206.0315(95') 235'
10206.0320(140')
680.520105
680.71
680.510201
4' 10206.0320
680.520103
680.54
680.72
ASPH. DR.
Loop No. 4
6'x6'
460'± TO STOP BAR

FOR APPROVAL SIGNATURE
SEE SHEET NO. 4F5.



AS-BUILT REVISIONS

SIGNATURE _____ DATE _____

SIGNAL NO. 16
ROUTE 19 AT ROUTE 33
TOWN OF BERGEN GENESEE CO.

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

DRAWING NO.	SCALE	DATE	REGION	CADD
TS-10	1"=20'-0"	8/88	4	GWH

D252467

FED. ROAD REG. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
I	N.Y.		4F7	

SIGNAL INSTALLATION & MODIFICATION ON VARIOUS STATE HIGHWAYS REGIONS 4&6

DATE ____ CHECKED BY ____ DRAFTED BY ____ CHECKED BY ____ ESTIMATED BY ____ CHECKED BY ____ DESIGNED BY ____ IN CHARGE OF ____

SIGNAL OPERATIONS SPECIFICATIONS TABLE OF SWITCH PACKS

SIGNAL NO. 16 COUNTY GENESEE

SWITCH PACK	FUNCTION	FACE NOS.	INDICATIONS	TERMINAL WIRING BOARD TERMINAL	WIRE COLOR CODE
SP 1	Ø1	1,2	R Y G GRND. WIRE	SP 1R SP 1Y SP 1G GRND BUS	14 R 19C O I G W
SP 2	Ø1	3,4	R Y G GRND. WIRE	SP 2R SP 2Y SP 2G GRND BUS	14 R/W 19C BL/W I G/W B/W
SP 3	Ø2	5,6	R Y G GRND. WIRE	SP 3R SP 3Y SP 3G GRND BUS	14 R/B 19C O/B I G/B W/B
SP 4	Ø2	7,8	R Y G GRND. WIRE	SP 4R SP 4Y SP 4G GRND BUS	14 B/R 19C O/R I BL/R W/R
SP 5			GRND. WIRE	SP 5R SP 5Y SP 5G GRND BUS	
SP 6			GRND. WIRE	SP 6R SP 6Y SP 6G GRND BUS	
SP 7			GRND. WIRE	SP 7R SP 7Y SP 7G GRND BUS	
SP 8			GRND. WIRE	SP 8R SP 8Y SP 8G GRND BUS	
SP 9			GRND. WIRE	SP 9R SP 9Y SP 9G GRND BUS	
SP 10			GRND. WIRE	SP 10R SP 10Y SP 10G GRND BUS	
SP 11			GRND. WIRE	SP 11R SP 11Y SP 11G GRND BUS	
SP 12			GRND. WIRE	SP 12R SP 12Y SP 12G GRND BUS	
SP 13			GRND. WIRE	SP 13R SP 13Y SP 13G GRND BUS	
SP 14			GRND. WIRE	SP 14R SP 14Y SP 14G GRND BUS	

SIGNAL OPERATIONS SPECIFICATIONS TABLE OF INPUT WIRING

SIGNAL NO. 16 COUNTY GENESEE

FUNCTION	DETECTOR NUMBER	TYPE	TERMINAL BOARD WIRING
Ø1	1	222	1A , 1B
Ø1	2	222	2A , 2B
Ø1	3	222	3A , 3B
Ø1	4	222	4A , 4B
Ø2	5	222	5A , 5B
Ø2	6	222	6A , 6B
Ø2	7	222	7A , 7B
Ø2	8	222	8A , 8B
			9A , 9B
			10A , 10B
			11A , 11B
			12A , 12B
			13A , 13B
			14A , 14B
			15A , 15B
			16A , 16B
			17A , 17B
			18A , 18B
			19A , 19B
			20A , 20B
			21A , 21B
			22A , 22B
			23A , 23B
			24A , 24B
			25A , 25B
			26A , 26B
			27A , 27B
			28A , 28B

TABLE OF OPERATIONS

PHASE	FACES 1	2	3	4	5	6	7	8	9	10	11	12	13	14	PEDESTRIAN INDICATIONS A	B	C	D
Ø1	G	G	G	G	R	R	R	R										
Ø2	R	R	R	R	G	G	G	G										
EMERG. FLASH	FL-Y	FL-Y	FL-Y	FL-Y	FL-R	FL-R	FL-R	FL-R										

TABLE OF CLEARANCES

TO \ FROM	G	R	R ←	R →	G →	G ←
G	G	R	R ⟲	R →	G →	G ⟲
R	Y	R	R ⟲	R ⟲	Y ⟲	Y ⟲
R ←	Y	R	R ←	X	X	Y ←
R →	Y →	R	X	R →	Y →	X
G ←	G	R	R ←	X	X	G ←
G →	G →	R	X	R →	G →	X

KEY FOR WIRE COLOR CODE

14 / 19C - I - R / B

(XX) / (XXC) - (X) - (X) - (X)

AWG | NO. OF CONDUCTORS | CABLE NO. FOR THE GIVEN CONDUCTOR SIZE | COLOR OF WIRE | TRACER COLOR

COLOR: R-RED, O-ORANGE, G-GREEN, BL-BLUE, W-WHITE, B-BLACK

LEGEND

G = CIRCULAR GREEN; ← = LEFT GREEN ARROW; → = RIGHT GREEN ARROW; ↑ = VERT. GREEN ARROW

Y = CIRCULAR YELLOW; ⟲ = LEFT YELLOW ARROW; ⟲ = RIGHT YELLOW ARROW

R = CIRCULAR RED; ← = LEFT RED ARROW; → = RIGHT RED ARROW

ITEM NO.	DESCRIPTION	UNIT	QUANT.
10206.0315	TRAF SIGNAL CONDUIT EXCAV AND RESTOR IN ASPHALT CONCRETE	LF	700
10206.0320	TRAF SIGNAL CONDUIT EXCAV AND RESTOR IN GRASS & UNPAV AREA	LF	1100
680.5001	POLE EXCAVATION AND CONCRETE FOUNDATION	CY	4.8
680.510201	PULLB-CIR, 18 IN DIA, REINF CONC	EA	7
680.510301	PULLB-CIR, 24 IN DIA, REINF CONC.	EA	3
680.520103	CONDUIT, METAL STEEL, ZINC COATED 1 INCH DIA.	LF	75
680.520105	CONDUIT, METAL STEEL, ZINC COATED 1½ INCH DIA.	LF	1550
680.520108	CONDUIT, METAL STEEL, ZINC COATED 3 INCH DIA.	LF	440
680.54	INDUCTANCE LOOP INSTALLATION	LF	440
680.600632	TRAF. SIGN. POLE - SPAN WIRE, 6000 LBS., 32 LF	EA	1
680.7001	SINGLE SPAN WIRE ASSEMBLY	EA	1
680.700608	RISER ASSEM., 3 IN. DIA.	EA	1
680.71	SHIELDED LEAD IN CABLE	LF	2450
680.72	INDUCTANCE LOOP WIRE	LF	1450
680.731914	SIGN. CABLE, 19 COND., 14 AWG.	LF	130
15680.803245	INSTALL MICROCOMPUTER CABINET	EA	1
680.8101	TRAFFIC SIGNAL SECTION - 12 INCH	EA	24
680.8112	TRAFFIC SIGNAL BRACKET ASSEMBLY - 2 WAY	EA	4
680.8120	TRAFFIC SIGNAL DISCONN HANGER	EA	4.
15680.950206	SERV. CABLE, 2 COND. #6 AWG	LF	100
10680.9903	REMOVE STEEL EMBED. TRAFFIC SIGNAL POLE	EA	3
10680.9905	REMOVE POLE MT. SIGNAL CONT. CAB.	EA	3
10680.9910	REMOVE TRAF.SIGN. SPAN WIRE ASSBLY W/TRAF.SIGN. HEADS	EA	1

FOR APPROVAL SIGNATURE SEE SHEET NO. 4F5.

LOOP TABLE

LOOP NO.	WIRED	NO. TURNS	SIZE	FUNCTION
1	DIRECT	3	6X16	Ø1
2	DIRECT	4	6X6	Ø1
3	DIRECT	3	6X20	Ø1
4	DIRECT	3	6X18	Ø1
5	DIRECT	3	6X18	Ø2
6	DIRECT	3	6X18	Ø2
7	DIRECT	3	6X16	Ø2
8	DIRECT	4	6X16	Ø2

AS-BUILT REVISIONS

SIGNATURE ____ DATE ____

SIGNAL NO. 16
ROUTE 19 AT ROUTE 33
TOWN OF BERGEN GENESEE CO.

MICROCOMPUTER SIGNAL OPERATION SPECIFICATIONS

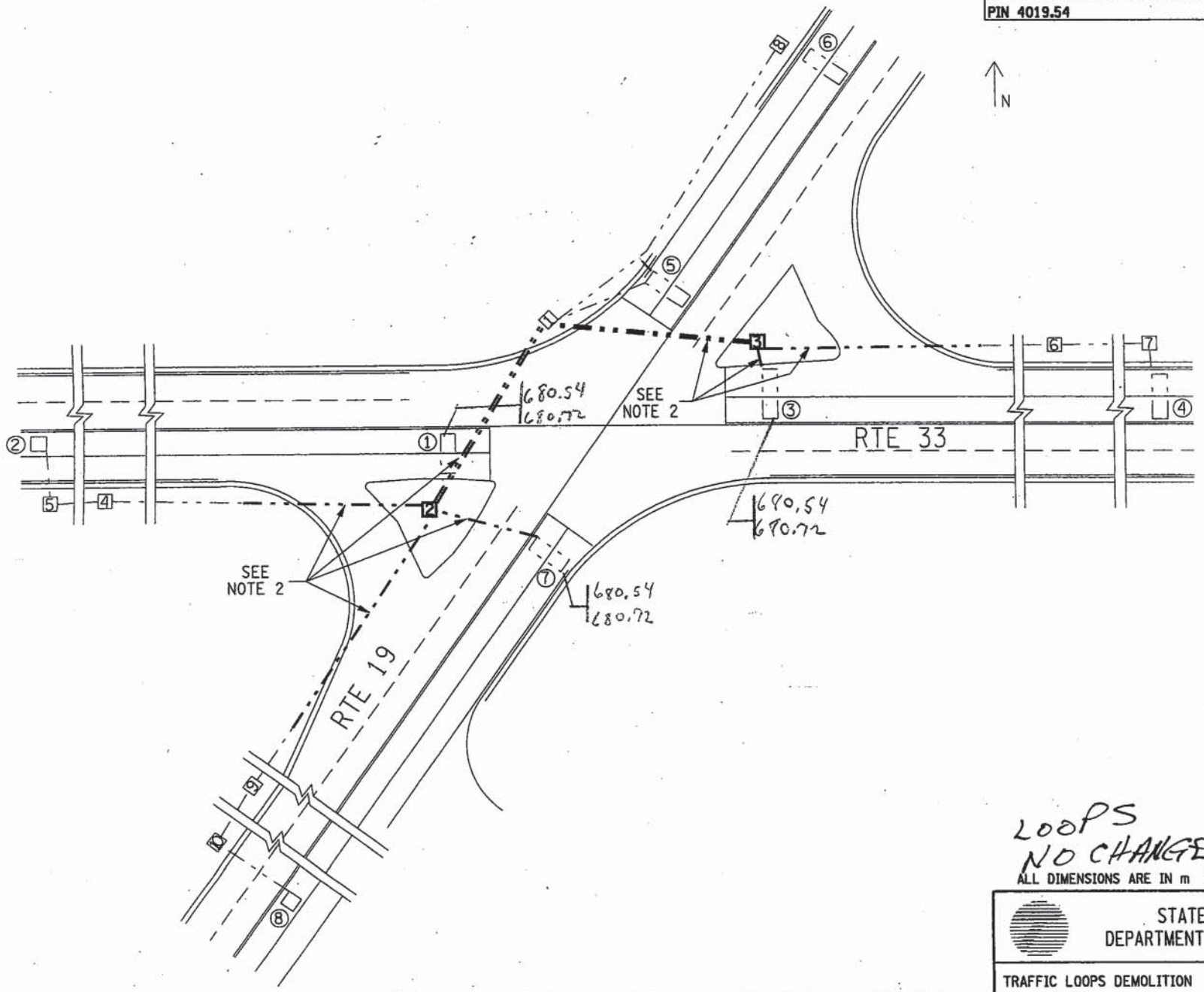
STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

DRAWING NO.	SCALE	DATE	REGION
TS-11	NONE	9/88	4 CADD GWH

E NAME =
E/TIME = 06-MAR-2007 14:42
USER = mebradley

D260421
WO # 3

VILLAGE OF BERGEN	
RTE 19	
PIN 4019.54	GENESEE COUNTY



LOOPS
NO CHANGES

ALL DIMENSIONS ARE IN m UNLESS OTHERWISE NOTED

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

TRAFFIC LOOPS DEMOLITION	REGION

D260191
P.I.N. 4T36.0X.101
INDUCTANCE LOOP INSTALLATIONS

Signal Number	County	Location	Loop Number	Function	Size (W x L)	Number of Turns
16	Genesee	Route 19 at Route 33	1	EB Front	1.8 x 5.4	3
16	Genesee	Route 19 at Route 33	3	WB Front	1.8 x 6.0	3
16	Genesee	Route 19 at Route 33	7	NB Front	1.8 x 5.4	3

Item 680.54- 61 M
680.72- 180 M

Table of Input Wiring

ɔation ‹t 19 @ Rt 33			**Signal #** 1016	**County** Genesee
Number	Function	No.	Type.	Remarks
1A, 1B	Phase 1	1	222	EB Call
2A, 2B	Phase 1	2		EB Point
3A, 3B	Phase 1	3		WB Call
4A, 4B	Phase 1	4		WB Point
5A, 5B	Phase 3	5		SB Call
6A, 6B	Phase 3	6		SB Point
7A, 7B	Phase 3	7		NB Call
8A, 8B	Phase 3	8		NB Point
9A, 9B		9		
10A, 10B		10		
11A, 11B		11		
12A, 12B		12		
13A, 13B		13		
14A, 14B		14		
15A, 15B		15		
16A, 16B		16		
17A, 17B		17		
18A, 18B		18		
19A, 19B		19		
20A, 20B		20		
21A, 21B		21		
22A, 22B		22		
23A, 23B		23		
24A, 24B		24		
25A, 25B		25		
26A, 26B		26		
27A, 27B		27		
28A, 28B		28		

Table of Switch Packs

t 33				Signal # 1016		County Genesee
	Function	Face Numbers	Flash Plug	Terminal Wiring Board		
				Indications	Terminal	
1	Phase 1 Rte. 33		R	R	SP 1R	
				Y	SP 1Y	
				G	SP 1G	
				Grnd Wire		
2	Phase 1 Rte. 33		R	R	SP 2R	
				Y	SP 2Y	
				G	SP 2G	
				Grnd Wire		
3	Bad Loction			R	SP 3R	
				Y	SP 3Y	
				G	SP 3G	
				Grnd Wire		
4	Bad Location			R	SP 4R	
				Y	SP 4Y	
				G	SP 4G	
				Grnd Wire		
5				R	SP 5R	
				Y	SP 5Y	
				G	SP 5G	
				Grnd Wire		
6	Phase 3 Rte. 19 SB		R	R	SP 6R	
				Y	SP 6Y	
				G	SP 6G	
				Grnd Wire		
7	Phase 3 Rte. 19 NB		R	R	SP 7R	
				Y	SP 7Y	
				G	SP 7G	
				Grnd Wire		
8				R	SP 8R	
				Y	SP 8Y	
				G	SP 8G	
				Grnd Wire		
9				R	SP 9R	
				Y	SP 9Y	
				G	SP 9G	
				Grnd Wire		
10				R	SP 10R	
				Y	SP 10Y	
				G	SP 10G	
				Grnd Wire		
11				R	SP 11R	
				Y	SP 11Y	
				G	SP 11G	
				Grnd Wire		
12				R	SP 12R	
				Y	SP 12Y	
				G	SP 12G	
				Grnd Wire		
13				R	SP 13R	
				Y	SP 13Y	
				G	SP 13G	
				Grnd Wire		
14				R	SP 14R	
				Y	SP 14Y	
				G	SP 14G	
				Grnd Wire		

Station : 1016 - Rt 19 @ Rt 33 (Standard File)

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Walk																
Ped Clearance																
Min Green	15		12													
Passage	6		4													
Max1	35		25													
Max2																
Yellow	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON		ON													
Auto Entry																
Auto Exit																
Non Act1																
Non Act2																
Lock Call																
Min Recall																
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry		ON		ON		ON		ON								
Sim Gap Enable	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
Guar Passage																
Rest In Walk																
Cond Service																
Add Init Calc																

Preemption

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Flash	ON	ON	ON	ON	ON	ON
Override Higher	ON	ON	ON	ON	ON	ON
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell	2	2	2	2	2	2
Max Presence						
Track R1						
Track R2						
Track R3						
Track R4						
Dwell Ped1						
Exit R1						
Exit R2						
Exit R3						
Exit R4						

Preempt LP

Channel	1	2	3	4
Min				
Max				
Type				
Lockout Mode	MAX	MAX	MAX	MAX
Coord in Preempt				
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Priority P5				
Priority P6				
Priority P7				
Priority P8				
Priority P9				
Priority P10				
Priority P11				
Priority P12				
Max Lockout				

Station : 1016 - Rt 19 @ Rt 33 (Standard File)

Coordination

Hour	Minute	Action	Pattern	Cycle	Offset	Split	seqnc	Short	Long	Dwell	Split 1	Split 2	Split 3	Split 4	Split 5	Split 6	Split 7	Split 8	Split 9	Split 10	Split 11	Split 12	Split 13	Split 14	Split 15	Split 16
Day Plan 1											**Easy**															
Day Plan 2											**Easy**															
Day Plan 3											**Easy**															

Station : 1016 - Rt 19 @ Rt 33 (Standard File)

Hour	Minute	Action	Pattern	Cycle	Offset	Split	seqnc	Short	Long	Dwell	Split 1	Split 2	Split 3	Split 4	Split 5	Split 6	Split 7	Split 8	Split 9	Split 10	Split 11	Split 12	Split 13	Split 14	Split 15	Split 16
Day Plan 4											**Easy**															

Scheduler

	Month												Day of Weekk							Day of Month										1										2										3		
Plan	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	Day Plan
1																																																1
2																																																1
3																																																1
4																																																1
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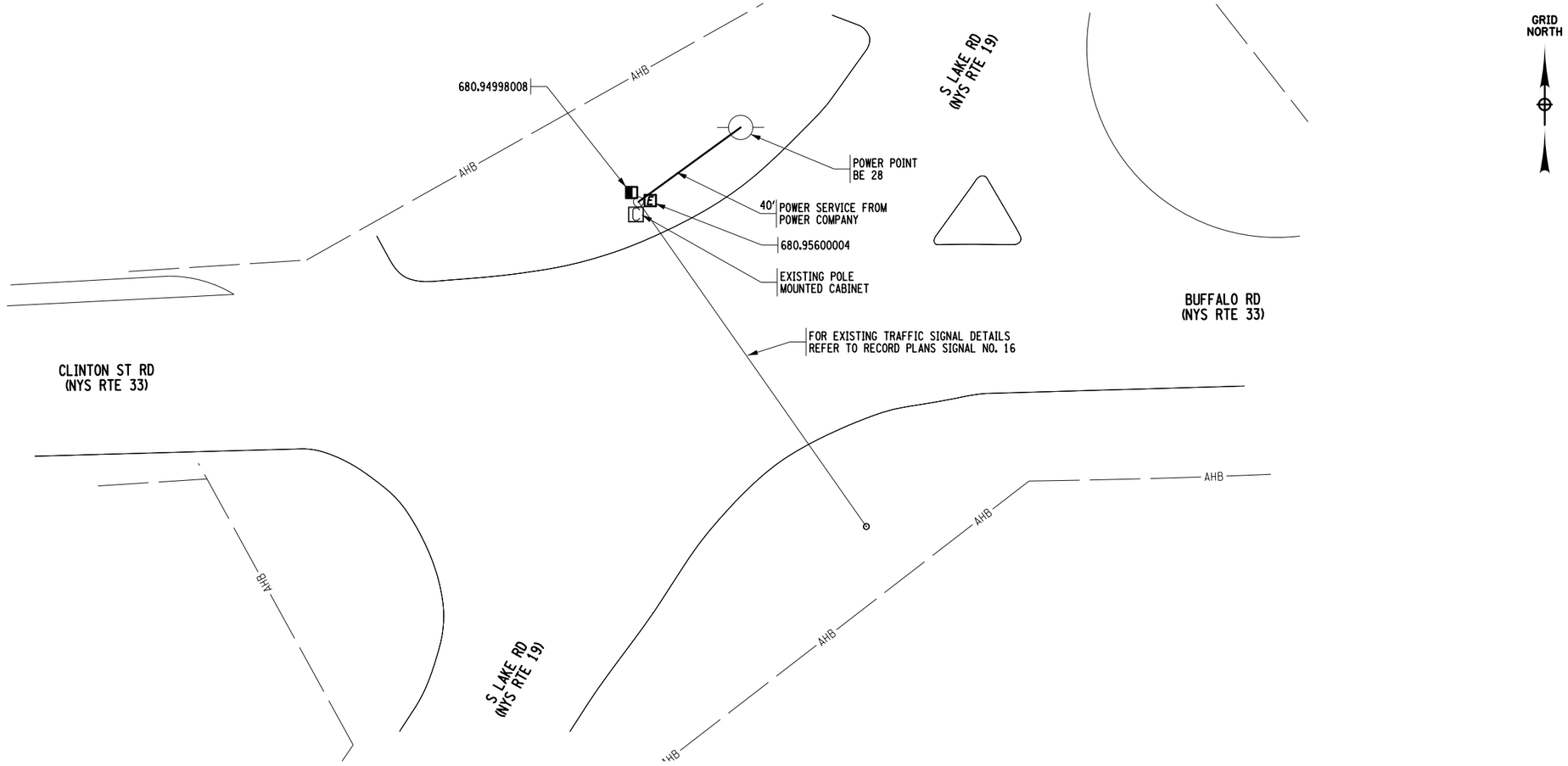
User Comments:



TRAFFIC SIGNAL NO. 04-41-16

NYS RTE 19 AND RTE 33 AND RTE 33A
TOWN OF BERGEN
GENESEE COUNTY
NOT TO SCALE

NOTES:

1. SEE DWG NO. TSD-02 POWER SUPPLY CONNECTION DETAIL - TYPE 2 FOR INSTALLATION
2. WORK TO BE DONE AT THIS LOCATION WILL BE THE INSTALLATION OF A STATE SUPPLIED GENERATOR TRANSFER SWITCH AND A METER PAN FOR THE ELECTRICAL SERVICE ENTRANCE IN THE METHOD SHOWN, EITHER OVERHEAD OR UNDERGROUND. ITEM NUMBER 680.78100104 WILL BE USED TO PAY FOR WORK DONE AT THIS LOCATION AND NOT PAID FOR UNDER A SEPARATE ITEM.

SIGNAL ESTIMATE OF QUANTITIES

ITEM NUMBER	DESCRIPTION	UNIT	QNT
680.520103	CONDUIT, METAL STEEL, ZINC COATED, 1"	LF	35
662.60010004	FURNISHING ELECTRICAL SERVICE	DC	1000
680.78100104	MODIFY AND OR REMOVE TRAFFIC SIGNAL	EACH	1
680.94998008	INSTALL ELECTRICAL DISCONNECT GENERATOR TRANSFER SWITCH - STATE SUPPLIED	EACH	1
680.95010615	SERVICE CABLE 1 CONDUCTOR NO. 06 AWG	LF	270
680.95600004	ELECTRICAL METER PAN	EACH	1

AFFIX SEAL: ON:	ALTERED BY: ON:
STATE OF NEW YORK · WONDWOSEN Z TEFERI · 093719 · LICENSED PROFESSIONAL ENGINEER	

AS-BUILT REVISIONS
DESCRIPTION OF ALTERATIONS:

No As-Built Revisions

TRAFFIC SIGNAL GENERATOR TRANSFER SWITCH INSTALLATION

COUNTY: GENESEE REGION: 04

PIN 4T36.01 | BRIDGES | CULVERTS

ALL DIMENSIONS IN ft UNLESS OTHERWISE NOTED

GENERATOR TRANSFER SWITCH PROJECT

TRAFFIC SIGNAL NO. 16
NYS RTE 19 AND CLINTON STREET RD

CONTRACT NUMBER D264550

DRAWING NO. TSP-16

SHEET NO. 13

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

DESIGN SUPERVISOR J. BRASACCHIO | JOB MANAGER W. TEFERI | DESIGN S. MAURO | DRAFTING R. SIKDER | CHECK R. SIKDER | PROJECT MANAGER J. BRASACCHIO

FILE NAME = 4T3601_cph_tsp_16.dgn
DATE/TIME = 15-MAY-2021 10:05
USER = teaches

Foundation Design, P.C.

SOIL ● BEDROCK ● GROUNDWATER

March 5, 2024

The CPL Team
255 Woodcliff Drive, Suite 200
Fairport, New York 14450

Attention: Andrew R. Kosa, P.E.

Reference: OXBO Manufacturing Facility
South Lake Road, Bergen, New York
Geotechnical Evaluation, 24.05592-01

Dear Mr. Kosa:

This report summarizes our Geotechnical Evaluation for the referenced project. We understand that the project consists of developing a 49-acre parcel to construct a 200,000 square-foot manufacturing facility. The building will contain settlement sensitive robotic machinery and laser equipment that sits on the slab-on-grade. Jib cranes will be attached to some of the interior columns. The finished floor of the building addition will be set near elevation 670.0, requiring cuts of two to three feet in the southeast corner and up to five feet of new fill in the northwest quadrant. We anticipate that new structural wall loads will be less than 10 kips per lineal foot, or 150 kips per column. The facility will have associated parking lots and drive lanes, as well as a large stormwater retention pond and equipment test track.

We base this evaluation on our review of U.S.G.S topographic and geologic mapping; preliminary site plans; recent boring exploration; laboratory testing; and consultation with the design team. The CPL Team commissioned this study per our February 14, 2024, *Geotechnical Proposal 24P05598*. We intend the conclusions and recommendations outlined in this report exclusively for the design and construction of this project.

The proposed development area is located east of South Lake Road in Bergen, New York. The new Liberty Pumps expansion is located to the northeast. A large car auction lot is located to the east. A wooded lot is located to the south, past the high-tension power lines. Grades rise up towards the southwest, A *General Location Plan* depicting the site on 2023 USGS topographic mapping is attached. The site is currently an open farm field.

The exploration program consisted of twelve soil borings for the building (B23-3 through B23-14), eight soil borings across the parking area and test track, then five infiltration tests in the bioretention areas. Nothnagle Drilling provided a track mounted CME 55 ATV drill rig for the borings between December 11 and December 15, 2023. The soil borings were sampled continuously to 10 feet and at standard five-foot intervals thereafter, to completion ranging in depths from 8.4 to 20.0 feet. The soil boring locations were established using handheld GPS equipment and coordinates taken from Google Earth. We estimated the surface elevations from the topographic mapping provided. Have your surveyor pick up the actual boring locations and surface elevations when next on-site. A copy of the soil boring logs are also enclosed.

Upon completion of the fieldwork, we selected representative soil samples for laboratory testing. The testing program consisted of five sieve analyses, seven moisture content tests, and two liquid/plastic limits test. Our laboratory report is enclosed.

The following interpretations of the soil, bedrock, and groundwater conditions are based on the soil boring data, our site observations, and previous work in the area. Variations from the inferred profile are possible. See the attached logs for details at the test locations. Contact us immediately if variations are found during construction so we may evaluate the impact on our recommendations.

A typical soil profile consists of topsoil over silty glacial till followed by weathered shale. The topsoil thickness ranged from 6 to 12 inches, measuring an average thickness of 9 inches. The underlying glacial till classifies primarily as ML (silt) in the Unified Soils Classification system. Generally, this formation was compact to dense four feet below the surface. The amount of shale rock fragments increases with depth. Loose zones were encountered at a few isolated locations within the upper ten feet. These appear to be associated with pockets of perched moisture.

We encountered shale bedrock within 8.0 feet of the surface, below elevation 662 within the building footprint. Highly decomposed shale rock was noted above this elevation, but the sampling contained more intact shale below this depth. The drillers were able to auger several feet into the shale formation before hitting auger refusal on the more intact, 'sound' bedrock. Geologic mapping shows the bedrock as the Camilus Formation of the Salina Group. This formation consists of gray shale, with dolomite, salt, and gypsum inclusions.

Saturated zones were encountered at about half of the test locations. The water appears to be perched over thin layers of impermeable rock below elevation 664. Free water accumulated at seven of the test locations. The irregularity of the water volume and elevations suggests it's not representative of the groundwater table. We expect volume and elevation of the perched water to fluctuate seasonally.

We conclude that the proposed structure can be supported on spread footings bearing on new structural fill or native soil. The on-site soil, free of organic matter and debris, is suitable for reuse as structural fill inside the building footprint. Although the upper native soil was not found to be excessively wet at the time of exploration, it is highly moisture sensitive. This material will absorb moisture and will take adequate drying weather, time, and effort to dry the material to a proper level for compaction. This material can be difficult/impossible to cut/fill and compact during wetter periods of the year. Plan for a late spring, summer, or early fall earthwork/grading operation.

The soil in the northwest quadrant (low area) of the site contains loose to firm soils. Lower bearing pressures will be required through this zone (see *Bearing Pressure Plan* attached). We recommend designing the entire structure at the lower bearing pressure to limit differential settlement. Provide an alternate foundation detail that can be applied where the soil conditions exposed during construction allow for the use of the higher bearing pressure detail. For estimating, assume that the higher bearing pressure can be utilized in the locations shown on the *Bearing Pressure Plan*; make sure to have the Geotechnical Engineer on site during construction to field adjust the limits based on conditions exposed during construction.

Based on this background, we recommend the following:

1. Clear and strip the in-place surface topsoil from the development area. Avoid stripping during wet times of the year to limit mixing of topsoil with the underlying native silty soil. Actual 'stripping thickness' will likely be about one foot. The Geotechnical Engineer should observe a proof roll of the building subgrade to verify that the subgrade is stable and ready for the ensuing fill placement. The contractor should provide a loaded ten-wheel truck for the proof rolling. Rework or replace areas that rut, weave, quake or are otherwise deemed to be unsuitable or unstable.

2. Clean on-site native soil, free of organic and debris, can be used for general purpose structural fill in building and pavement areas. Again, the use of the material will prove weather dependent. These silty/clayey soils may be wet of optimum upon excavation and require appropriate drying time prior to placement as structural fill. They are moisture sensitive and frost susceptible; this will result in the need

to protect exposed areas from frost penetration during cold weather and from changes in moisture. We recommend a construction schedule that would allow for the mass earthwork to be performed during the drier summer months, typically May to September. Alternatively, use an imported granular material similar in gradation to N.Y.S.D.O.T. Item 304.12 (crusher-run stone) or N.Y.S.D.O.T. Item 203.07 (select granular fill) for the structural fill. Submit other materials to the Geotechnical Engineer for review and approval on a case-by-case basis. Maintain good surface drainage.

We define structural fill as the new fill placed under and around footings, floor slabs, sidewalks, and pavements. Place structural fill in lifts of 12 inches or less in loose thickness and within two percent of the optimum moisture content. Compact structural fill to at least 95 percent of maximum dry density as determined by the Modified Proctor test (ASTM D-1557). Compact non-structural fill as otherwise determined by the engineer.

3. Support new foundations on clean native soil or new structural fill at a bearing pressure of 2,500 psf at a two foot depth or 3,000 psf at a four foot depth. Where field conditions allow (southeast quadrant of the building), use an allowable bearing pressure of 6,000 psf. Design all footings to be at least two feet square or wide. Design exterior footings to bear at least four feet below exterior grade for frost protection. Where new footings abut the existing footings, match the bottom of all existing foundations. Hand clean all loose or disturbed soil from the footing excavations prior to placing concrete. At these depths and pressures, we estimate total settlements at less than one half inch.

4. We recommend installing a granular base under the slab on grade. The Modulus of Subgrade Reaction is dependent on the base course thickness. Table No. 1 below outlined the Modulus of Subgrade Reaction that can be applied at the underside of the concrete (top of base course) for various base course thicknesses. The architect and/or structural engineer should review the proposed interior finishes and humidity control requirements to determine whether a vapor barrier is appropriate under the slab and if so, where it should be installed. See the American Concrete Institute Document 302.1R, *Concrete Floor and Slab Construction*, for more information.

Table No. 1 – Modulus of Subgrade Reaction	
Base Course Thickness	**Subgrade Modulus**
6-inches	150 psi/in
9 inches	175 psi/in
12-inches	200 psi/in

5. The NYS Building Code identifies various seismic design criteria for this project. We identify the site as having a Site Classification of C (Very Dense Soil Profile). Based on the ASCE 7-16 guidelines, we recommend using the following seismic design parameters.

Table No. 2 – Seismic Design Parameters					
Spectral Response Acceleration		**MCER Response Spectrum Acceleration**		**Design Spectral Response Acceleration**	
S_S	**S_1**	**S_{ms}**	**S_{m1}**	**S_{DS}**	**S_{D1}**
0.17g	0.048g	0.227g	0.072g	0.151g	0.048g

6. Design retaining walls, such as modular block retaining walls and loading dock walls, based on the parameters below. Install a drain at the base of all retaining walls to help prevent build-up of hydrostatic pressure. Connect the drains to the stormwater system. Design fixed walls based on an at-rest earth pressure of 60 pcf. Use a sliding coefficient between the concrete and the silt of 0.35.

Table No. 3 - Lateral Earth Pressures							
Backfill Material	**Internal Friction**	**K_a**	**K_p**	**K_o**	**Active Pressure**	**Passive Pressure**	**At Rest Pressure**
Native Silt with Shale	30	0.33	3.00	0.50	45	390	65
NYSDOT Item 304.12	36	0.26	3.85	0.41	38	559	60

7. Perform trenching and excavating in accordance with the Occupational Safety and Health Administration (OSHA) requirements and New York State Building Code Standards. The contractor is responsible for determining the measures required in meeting these standards. Cut unsupported temporary excavations to a stable slope, but in no case steeper than 1 horizontal on 1 vertical.

   We anticipate that the decomposed shale is 'diggable' with a large excavator or bulldozer with a ripper to depths of seven to ten feet below existing grade in open/area-wide excavations. It will be more difficult to excavate in trenches. The south pond shows somewhat deeper cuts, which could be problematic. Require that the contractor be prepared to rip/tear into the weathered shale as part of their base bid. You should carry an allowance in your overall budgeting (to be invoiced on a unit rate basis) for use of a hoe ram. We anticipate that the resulting cut slopes will be fairly stable but that some seeps/springs may develop. Topsoil thickness may need to be increased in some of the steeper areas towards the west as the roots will not readily grow into the shale subsoil.

8. The pavement subgrade will be the on-site clayey silt (native or reworked). As discussed above, this material is moisture sensitive and frost susceptible. When wet, the material will deteriorate under truck traffic. A thicker pavement section and positive drainage is recommended to protect the subgrade from deteriorating.

   The Geotechnical Engineer should observe a proof roll of the subsequent subgrade prior to placing the final subbase material. The contractor should provide a loaded ten-wheel truck or similar heavy construction equipment for the proof-rolling. If the subgrade ruts, weaves, or quakes during proof-rolling, re-compact or replace the unstable areas as recommended by the Geotechnical Engineer's representative. We recommend using the pavement sections outlined below for the anticipated car and truck traffic. Use the Standard Pavement Section in areas where car/pick-up truck traffic is envisioned. Use the Heavy Duty Section in areas where heavy equipment/trailer-truck traffic is envisioned.

Table No. 4 - Standard Section		
1.5"	Asphalt Topcoat	NYSDOT Item 403.178902
2.5"	Asphalt Binder	NYSDOT Item 403.138902
12.0"	No. 2 Crusher-run Stone	NYSDOT Item 304.12
	Subgrade	Approved Proof Roll

Table No. 5 – Heavy Duty Section		
1.5"	Asphalt Topcoat	NYSDOT Item 403.178902
2.5"	Asphalt Binder	NYSDOT Item 403.138902
3.0"	Asphalt Base	NYSDOT Item 403.118902
12.0"	No. 2 Crusher-run Stone	NYSDOT Item 304.12
	Subgrade	Approved Proof Roll

We recommend sloping both the pavement surface and subgrade at slopes of at least 1.5 to 2.0 percent to facilitate water flow toward the stormwater system and prolong the pavement life. Drainage of the subbase is critical to proper performance of the pavements. Install 25 foot long weeps off the storm inlets at low points to allow water out of the stone subbase and into the storm water system. Where pavements sheet drain to the edge of the pavement, install an edge drain to collect water and carry it away from the pavement surface, daylighting the drain into the adjacent lawn areas.

It is our experience that flexible pavements do not perform well in locations where repetitive traffic occurs (i.e., in front of overhead doors, loading dock doors, dumpster locations, etc.). We recommend installing a rigid pavement section at these locations. Your structural engineer should assess the proposed truck loading and whether reinforcing steel is required in the concrete section.

9. The NYS Building Code requires Special Inspection services. The geotechnical construction services will consist of engineering judgments (items not covered by standardized/ASTM test methods) and laboratory testing services (items covered by standardized/ASTM test methods). As the Geotechnical Engineer of Record, we recommend the following inspections and ask that you include them on your List of Special Inspections developed as part of the Building Permitting Process:

- As the Geotechnical design Engineer, we request a series of site visits to confirm that the conditions are as expected and provide recommendations where conditions differ from those expected. In addition to complying with some of the Code requirements, our intent is to help the construction team reduce potential negative cost and schedule impacts from adverse subsurface conditions in an expeditious manner. Specifically, we should be called upon to observe the following:

  A. Observe proof-rolling of the subgrade prior to fill placement.

  B. Be actively involved in review of the cut soil from the pond and determining where it can be used effectively (green space vs. pavement areas). Observe use of this fill and work with the testing agency on acceptance criteria. Spot-check the means and methods used during 'regular' structural fill placement. Review soils laboratory testing.

  C. Spot-check the foundation excavations and confirm the suitability of the bearing grade. Use our engineering judgement to determine if bearing grades can be increased during construction.

- We recommend that you retain an independent test agency to perform part-time observation of fill and backfill placement over 12 inches in thickness. Specific compaction and testing requirements follow:

  A. Conduct at least one density test on each 2,500 square feet of mass building fill or subbase placed.

  B. Conduct at least one density test per 50 lineal feet of foundation backfill and utility trench backfill on alternating lifts.

  C. Place fill in lifts not to exceed eight inches in loose thickness.

  D. Compact structural fill to at least 95 percent of the maximum dry density and within 2 percent of optimum moisture content as determined by the Modified Proctor Test (ASTM D-1557). Work with the Geotechnical Engineer on testing protocols for use on non-standard shale fill soils.

  E. Compact other fill to 90 percent of Modified Proctor or as otherwise determined by the site engineer.

Attached to the end of this report is a Geoprofessional Business Association paper entitled *Important Information about This Geotechnical Engineering Report.* It describes how we intend this report to be used. We will continue to work cooperatively with you and other project principals and interested parties to achieve win/win solutions that benefit all.

This concludes our design phase services. We are available to answer questions that you may have about the data or interpretations of the soil, bedrock, and groundwater conditions.

Sincerely,
FOUNDATION DESIGN, P.C.

Jeffrey D. Netzband, P.E.
Vice President

Ryan Radford, P.E.
Vice President
Enc.

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

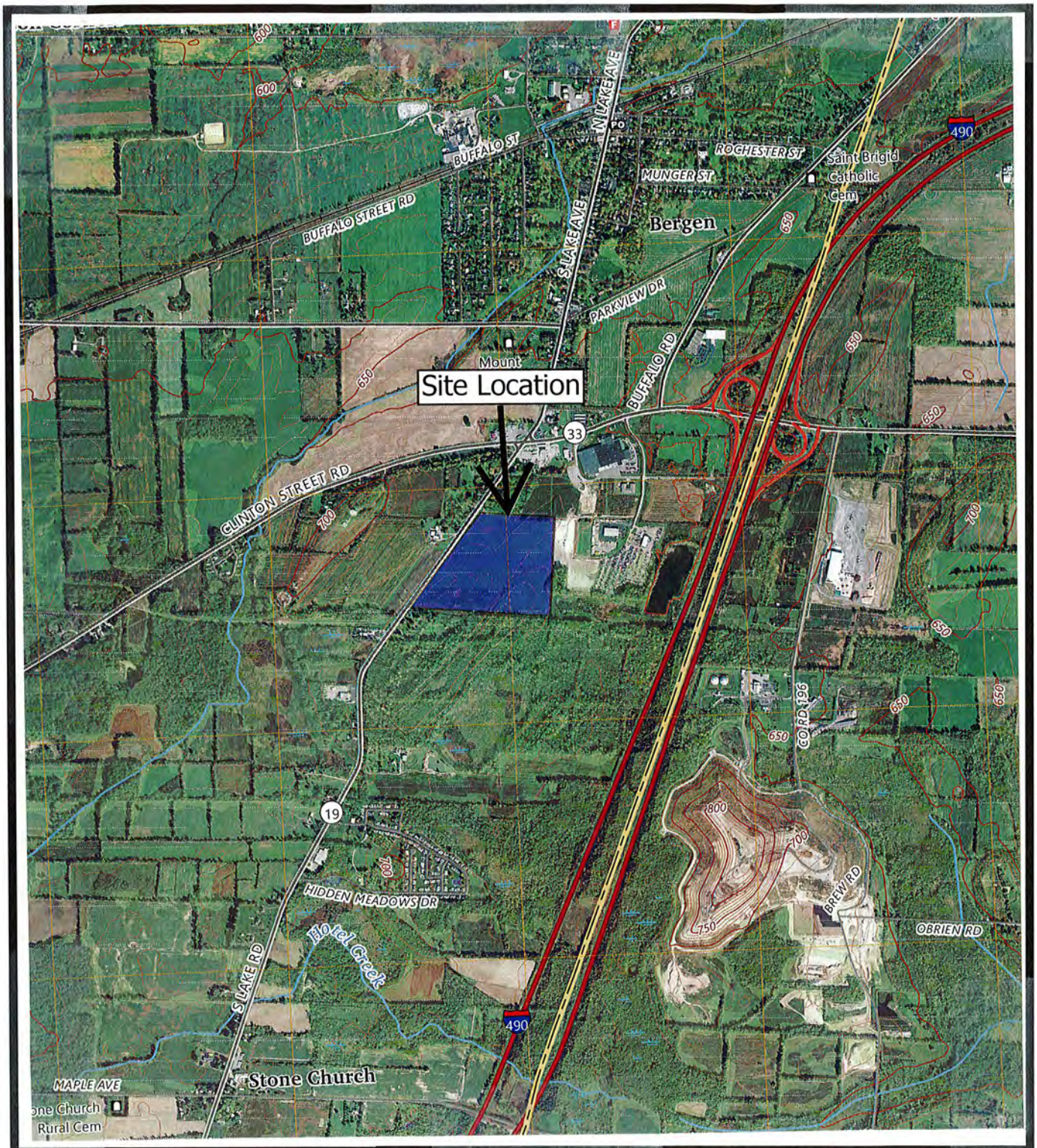
The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

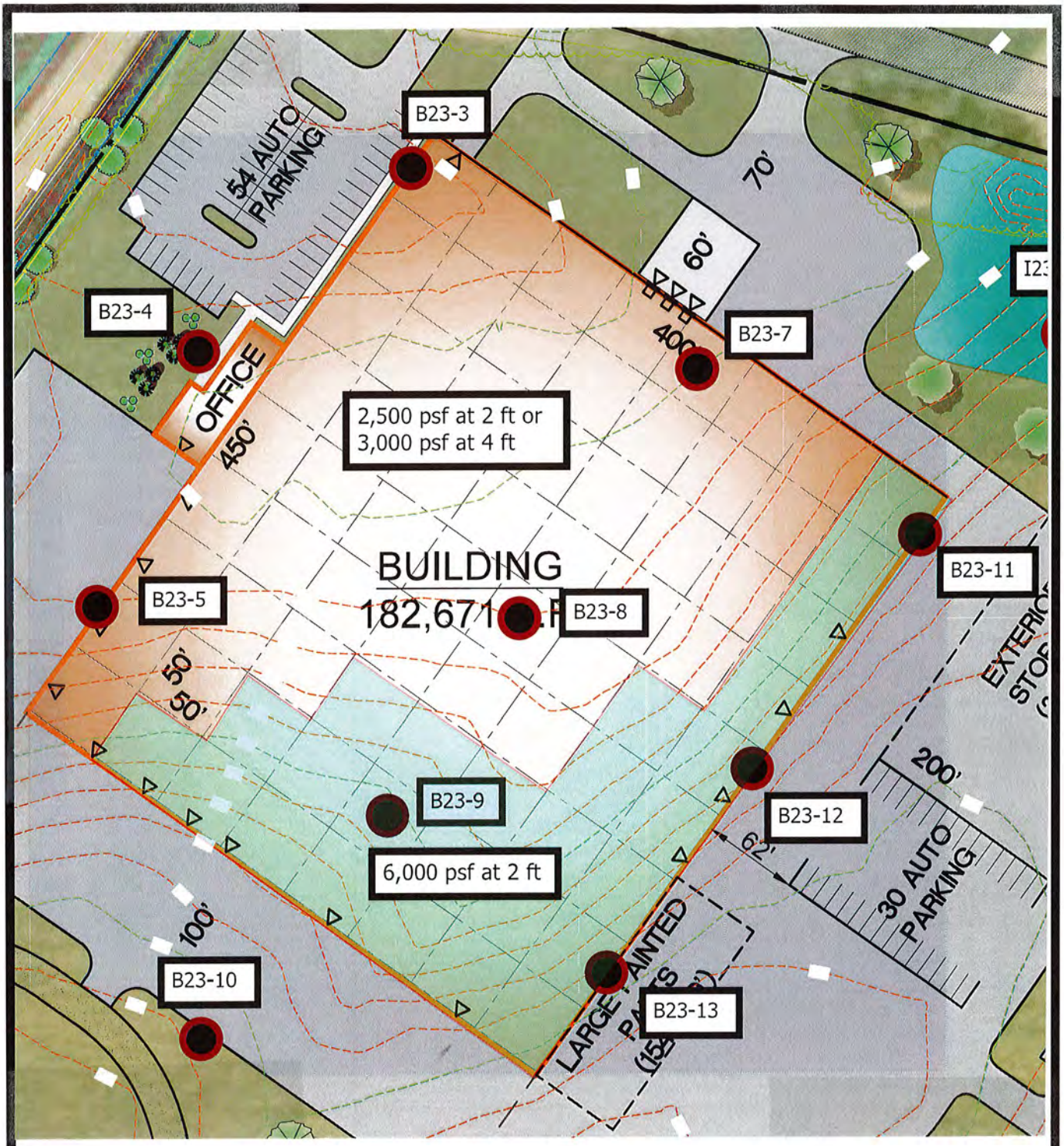


Foundation Design, P.C.

46A Sager Drive
Rochester, New York 14607
Phone (585) 458-0824
FAX (585) 458-3323

OXBO Manufacturing Facility
7062 South Lake Road, Bergen, NY
General Location Plan
Adapted from: USGS Topographical Mapping
2023 Churchville Quadrangles

CHECKED BY:	**RJR**	Scale 1" = 2000'	**DATE: 03.04.2024**
DRAWN BY:	**JCS**		**JOB NO.: 5592.0**



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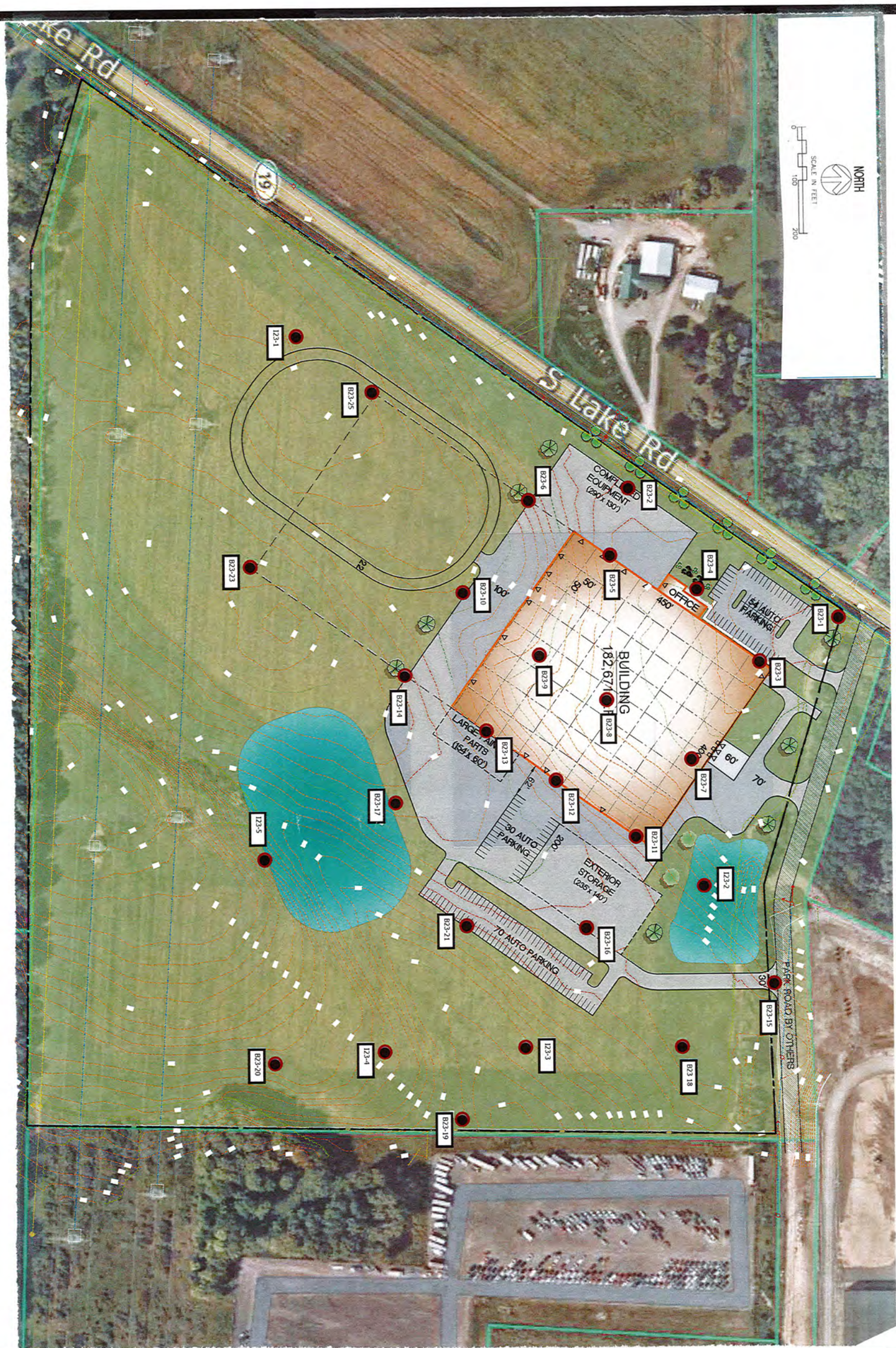
OXBO Manufacturing Facility
7062 South Lake Road, Bergen, NY
Bearing Pressure Plan
Adapted from: Scannell Properties
Manufacturing Facility Plan

CHECKED BY:	**RJR**	Scale NTS	**DATE: 03.04.2024**
DRAWN BY:	**JDN**		**JOB NO.: 5592.0**



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SOIL • BEDROCK • GROUNDWATER

46A Sager Drive
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Phone (585) 458-0824
FAX (585) 458-3323

OXBO Manufacturing

South Lake Road, Bergen, New York

Exploration Location Plan

Adapted from: Scannell Properties "Manufacturing Facility"
Dated March 1, 2024

CHECKED BY: JDN

DRAWN BY: RJR

Scale 1"=200'

DATE: 03.04.2024

JOB NO.: 5592.0

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SOIL • BEDROCK • GROUNDWATER

SOIL DESCRIPTIONS

COHESIVE SOIL

Very fine grained soils. Plastic soils that can be rolled into a thin thread if moist. Clays and silty clays show cohesion.

DESCRIPTION	SPT –BLOWS/FOOT
Very Soft	0-2
Soft	3-5
Medium	6-15
Stiff	16-25
Hard	26 or more

NON-COHESIVE SOIL

Soils composed of silt, sand and gravel, showing no cohesion or very slight cohesion

DESCRIPTION	SPT –BLOWS/FOOT
Loose	0-10
Firm	11-25
Compact	26-40
Dense	41-50
Very Dense	51 or more

SOIL COMPOSITION	DESCRIPTION	ESTIMATED PERCENTAGE
	and	50
	some	30-49
	little	11-29
	trace	0-10

MOISTURE CONDITIONS Dry, Damp, Moist, Wet, Saturated
Groundwater measured in the boring or test pit may not have reached equilibrium

SOIL STRATA:	TERM	DESCRIPTION
	layer	Soil deposit more than 6" thick
	seam	Soil deposit less than 6" thick
	parting	Soil deposit less than 1/8" thick
	varved	Horizontal uniform layers or seams of soil

GRAIN SIZE

MATERIAL		SIEVE SIZE
Boulder		Larger than 12 inches
Cobble		3 inches to 12 inches
Gravel	- coarse	1 inch to 3 inches
	- medium	3/8 inch to 1 inch
	- fine	No. 4 to 3/8 inch
Sand	- coarse	No. 10 to No. 4
	- medium	No. 40 to No. 10
	- fine	No. 200 to No. 40
Silt and Clay		Less than No. 200

Standard Penetration Test: The number of blows required to drive a split spoon sampler into the soil with a 140 pound hammer dropped 30 inches. The number of blows required for each 6-inches of penetration is recorded. The total number of blows required for the second and third 6-inches of penetration is termed the penetration resistance, or the "N" value.

Split Spoon Sampler: Typically a 2-foot long, 2-inch diameter hollow steel tube that breaks apart or splits in two down the tube length.

Refusal: Depth in the boring where more than 100 blows per 5-inches are needed to advance the sample spoon.

Core Recovery (%): The total length of rock core recovered divided by the total core run.

RQD (%): Rock Quality Designation – the total length of all the pieces of the rock core longer than 4-inches divided by the total length of the rock core run.

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Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-1
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	668.5	**Weather**	Overcast 30s	**Engineer**	J. Herrera
Date Started	12/11/2023	**Completed**	12/11/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	3	6							TOPSOIL 1'0"
			7	9	13	S-1	0'-2'	13"	Firm tan damp SILT, trace sand
	11	12							
			12	9	24	S-2	2'-4'	12"	S-2: Trace gravel
5	35	58							
			35	51	93	S-3	4'-6'	9"	S-3: Very dense, little to some sand, little to some gravel, cobble fragments noted in shoe
	39	50/5"			50/5"	S-4	6'-6'11"	8"	S-4: Some sand (Hard augering down to 8', cobbles noted)
	38	50/3"			50/3"	S-5	8'-8'9"		S-5: No recovery, likely pushing boulder 8'9"
10									Boring Terminated at 8'9"
15									
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-2
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	666.5	**Weather**	Overcast 30s	**Engineer**	J. Herrera
Date Started	12/11/2023	**Completed**	12/11/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	2	3							TOPSOIL 1'0"
			4	5	7	S-1	0'-2'	17"	Loose brown-tan moist to wet SILT, little sand, little gravel
	9	8							
			11	12	19	S-2	2'-4'	18"	S-2: Firm, little to some sand
5	6	7							S-3: Wet, some sand
			7	10	14	S-3	4'-6'	19"	
	18	13							S-4: Little to some gravel, trace clay 8'0"
			8	7	21	S-4	6'-8'	17"	
	8	11							Firm brown-gray wet highly SHALE (weathered)
10			8	5	19	S-5	8'-10'	15"	10'0"
									Boring Terminated at 10'0"
15									
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-3
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	667.5	**Weather**	Overcast 30s	**Engineer**	J. Herrera
Date Started	12/11/2023	**Completed**	12/11/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	WH	2							TOPSOIL 0'6"
			2	3	4	S-1	0'-2'	16"	Loose tan wet SILT, trace sand, trace gravel
	5	10							
			13	17	23	S-2	2'-4'	16"	S-2: Firm, moist, some sand, little to some gravel
5	3	13							S-3: Compact
			16	17	29	S-3	4'-6'	15"	
	11	20							S-4: Dense
			22	28	42	S-4	6'-8'	18"	
	9	25							
10			33	29	58	S-5	8'-10'	19"	S-5: Very dense, brown-gray
									11'6"
									Firm gray wet to saturated SHALE (weathered)
	16	15							
15			5	11	20	S-6	13'-15'	17"	
									S-7: Very dense, saturated 18'3"
	50/2"				50/2"	S-7	18'-18'2"	2"	Boring Terminated at 18'3" (Auger Refusal)
20									
25									
30									Notes: 1. Water at 15'4" with augers in. 2. Advanced hole using hollow stem augers. 3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-4
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	665.5	**Weather**	Sunny 30s	**Engineer**	J. Herrera
Date Started	12/12/2023	**Completed**	12/12/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	4							TOPSOIL 0'7"
			3	6	7	S-1	0'-2'	12"	Loose brown wet SILT, little sand, little gravel, trace clay
	8	11							
			13	17	24	S-2	2'-4'	22"	S-2: Compact, some sand
5	9	7							S-3: Firm
			9	9	16	S-3	4'-6'	23"	6'0"
	7	11							Firm brown-gray wet to saturated SILT, little to some clay, little gravel
			9	7	20	S-4	6'-8'	18"	(highly decomposed shale) 7'0"
	10	15							Compact brown-gray moist to wet SHALE
10			8	8	23	S-5	8'-10'	22"	(highly weathered) 9'0"
	1	3							Compact brown-gray wet to saturated SILT, little to some clay, little gravel
			10	7	13	S-6	10'-12'	20"	(highly decomposed shale) 11'0"
									Firm gray wet SILT, some clay, trace to little gravel (highly decomposed shale)
	21	17							14'0"
15			6	4	23	S-7	13'-15'	20"	Firm gray saturated SILT, some clay, some gravel (highly weathered shale)
	3	3							
			10	7	13	S-8	15'-17'	16"	
	50/1"				50/1"	S-9	18'-18'1"	1"	S-9: Shale fragments noted in shoe, poor recovery 18'2"
20									Boring Terminated at 18'2"
25									
30									

Notes:
1. Water at 11'10" with augers in.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-5
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	666.0	**Weather**	Overcast 30s	**Engineer**	J. Herrera
Date Started	12/11/2023	**Completed**	12/11/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	2	2							TOPSOIL 0'9"
			3	4	5	S-1	0'-2'	17"	Loose brown wet SILT, little sand, little gravel
	6	6							
			7	7	13	S-2	2'-4'	16"	S-2: Firm, moist to wet, little to some sand
5	4	4							S-3: Wet, trace clay
			3	4	7	S-3	4'-6'	16"	6'6"
	5	6							Firm gray wet SILT, some clay, trace gravel (highly weathered shale)
			6	7	12	S-4	6'-8'	19"	
	3	1							9'6"
10			2	13	3	S-5	8'-10'	20"	Loose gray damp SHALE (weathered)
	4	50/4"			50/4"	S-6	10'-10'10"	0	
									13'0"
	31	9							Firm gray saturated SILT, some gravel, little clay (highly decomposed shale)
15			5	31	14	S-7	13'-15'	20"	15'0"
	33	52							Very dense gray damp to moist SHALE (highly weathered - 8" shale layer at 15'-15'8")
			50/3"		102/9"	S-8	15'-16'3"	15"	S-8: Compact, saturated, 3" sand seam 16'-16'3"
	4	50/5"			50/5"	S-9	18'-18'11"	10"	S-9: Very dense 19'0"
20									Boring Terminated at 19'0" (Auger Refusal)
25									
30									

Notes:
1. Water at 14' with augers in.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-6
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	672.0	**Weather**	Sunny 30s	**Engineer**	J. Herrera
Date Started	12/12/2023	**Completed**	12/12/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	3							TOPSOIL 0'10"
			2	3	5	S-1	0'-2'	18"	Loose brown wet SILT, little sand, trace gravel
	3	6							
			13	13	19	S-2	2'-4'	18"	S-2: Firm, moist, little gravel, little to some sand
5	15	18							S-3: Dense, little to some gravel
			24	26	42	S-3	4'-6'	24"	
	2	36							
			50/5"		86/11"	S-4	6'-7'5"	17"	S-4: Very dense
	17	30							
10			36	4	66	S-5	8'-10'	24"	
	37	50/4"			50/4"	S-6	10'-10'10"	10"	
									13'0"
	50/3"				50/3"	S-7	13'-13'3"	3"	Very dense gray damp to moist SHALE
15									(weathered) 14'1"
									Boring Terminated at 14'1" (Auger Refusal)
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-7
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	665.0	**Weather**	Pt sunny 40s	**Engineer**	J. Herrera
Date Started	12/14/2023	**Completed**	12/14/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	3							TOPSOIL 0'9"
			4	3	7	S-1	0'-2'	16"	Loose brown moist to wet SILT, little sand, little gravel, trace clay
	3	6							3'0"
			8	11	14	S-2	2'-4'	21"	Firm brown-gray moist SILT, some clay, trace to little gravel (highly decomposed shale)
5	6	6							
			7	12	13	S-3	4'-6'	20"	
	9	8							
			12	22	20	S-4	6'-8'	18"	S-4: Wet 8'0"
	38	50/3"			50/3"	S-5	8'-8'9"	9"	Very dense gray-brown damp to moist SHALE highly weathered with sporadic seams of highly decomposed shale
10									
	40	13							
			7	50	20	S-6	10'-12'	18"	S-6: Firm, saturated weathered shale layer from 10'6"-11'6"
									13'0"
	50/3"				50/3"	S-7	13'-13'3"	3"	Very dense gray dry to damp SHALE (weathered - saturated below 13'3")
15									
	14	21							16'6"
			12	20	33	S-8	15'-17'	17"	Compact gray-black saturated SHALE (weathered)
									S-9: Very dense 18'4"
	50/1"				50/1"	S-9	18'-18'1"	1"	Boring Terminated at 18'4"
20									
25									
30									

Notes:
1. Water at 10'6" with augers in.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-8
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	666.0	**Weather**	Overcast 30s	**Engineer**	J. Herrera
Date Started	12/13/2023	**Completed**	12/13/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	3							TOPSOIL 0'10"
			3	3	6	S-1	0'-2'	20"	Loose brown wet SILT, trace gravel, little to some sand, trace to little clay
	3	9							
			13	10	22	S-2	2'-4'	24"	S-2: Firm, moist, little to some gravel, little to some sand
5	5	5							S-3: Loose, wet, saturated
			4	3	9	S-3	4'-6'	22"	6'0"
	4	5							Loose brown saturated SAND, some silt, trace to little gravel
			3	6	8	S-4	6'-8'	14"	8'0"
	1	4							Compact brown saturated SILT,
10			23	50/2"	27	S-5	8'-9'8"	16"	little to some clay, little to some gravel 9'0"
	50/3"				50/3"	S-6	10'-10'3"	2"	Compact gray damp to moist SHALE (highly weathered with sporadic highly decomposed shale seams) S-6: Shale fragments noted in shoe, Poor recovery
	18	50/4"			50/4"	S-7	13'-13'10"	10"	S-7: Very dense
15									
	37	41							S-8: Saturated, water noted in spoon
			39	10	80	S-8	15'-17'	20"	17'1"
									Boring Terminated at 17'1"
20									
25									
30									Notes: 1. Water at 12'1" with augers in. 2. Advanced hole using hollow stem augers. 3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-9
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	670.5	**Weather**	Overcast 30s	**Engineer**	J. Herrera
Date Started	12/13/2023	**Completed**	12/13/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	2							TOPSOIL 0'8"
			2	2	4	S-1	0'-2'	19"	Loose brown wet SILT, little to some sand, trace gravel, trace clay
	3	5							
			6	8	11	S-2	2'-4'	18"	S-2: Firm, moist to wet, little gravel
5	5	12							S-3: Compact, little to some gravel
			14	19	26	S-3	4'-6'	24"	
	17	30							S-4: Very dense, moist
			39	50/4"	69	S-4	6'-7'10"	22"	
	20	26							S-5: Trace to little clay
10			30	33	56	S-5	8'-10'	24"	
	30	45							11'0"
			50/3"		95/9"	S-6	10'-11'3"	15"	Very dense gray moist d SHALE (highly weathered with sporadic highly decomposed shale seams noted – wet to saturated)
	26	28							
15			33	26	61	S-7	13'-15'	24"	
	28	10							15'6"
			10	50/2"	20	S-8	15'-16'8"	16"	Firm brown-black saturated SILT, little to some clay, little gravel (highly decomposed and weathered shale)
									17'4"
20									Boring Terminated at 17'4" (Auger Refusal)
25									
30									Notes: 1. Water at 17' with augers in. 2. Advanced hole using hollow stem augers. 3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-10
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	675.0	**Weather**	Overcast 30s	**Engineer**	J. Herrera
Date Started	12/13/2023	**Completed**	12/13/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	2							TOPSOIL 0'10"
			3	6	5	S-1	0'-2'	20"	Loose brown moist to wet SILT, little sand, little gravel, trace clay
	13	16							
			20	24	36	S-2	2'-4'	18"	S-2: Compact, moist, little to some sand, little to some gravel
5	14	20							S-3: Dense
			22	29	42	S-3	4'-6'	24"	
	33	50/4"			50/4"	S-4	6'-6'10"	10"	S-4: Very dense
	20	29							
10			30	42	59	S-5	8'-10'	24"	
	42	50/5"			50/5"	S-6	10'-10'11"	11"	
									13'6"
	21	52							Very dense gray-brown damp SILT, little to some sand, little to some gravel
15			53	50/4"	105	S-7	13'-14'10"	20"	
	21	33							
			39	48	72	S-8	15'-17'	24"	
	20	24							
20			25	48	49	S-9	18'-20'	24"	S-9: Dense, moist to wet 20'0"
									Boring Terminated at 20'0"
25									
30									Notes: 1. Dry upon completion. 2. Advanced hole using hollow stem augers. 3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-11
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	671.5	**Weather**	Overcast 30s	**Engineer**	J. Herrera
Date Started	12/13/2023	**Completed**	12/13/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	2							TOPSOIL 1'0"
			3	33	5	S-1	0'-2'	13"	Loose brown moist to wet SILT, little to some sand, little gravel
	50/1"				50/1"	S-2	2'-2'1"		S-2: No recovery, cobble noted at 2'
5	20	25							S-3: Very dense, damp, little to some gravel
			33	43	58	S-3	4'-6'	24"	
	50/4"				50/4"	S-4	6'-6'4"	4"	
	24	26							
10			26	38	52	S-5	8'-10'	24"	S-5: Trace clay 10'0"
	48	50/2"			50/2"	S-6	10'-10'8"	8"	Very dense gray dry to damp SHALE (highly weathered) 13'0"
	1	1							Compact brown-tan saturated SILT, little to some gravel, little sand, U 14'0"
15			36	50/5"	37	S-7	13'-14'11"	20"	
	50/3"				50/3"	S-8	15'-15'3"	3"	Compact gray dry to damp SHALE (highly weathered) 14'10"
									Very dense gray moist SILT, little to some gravel, little clay (highly decomposed shale) 16'1"
									Boring Terminated at 16'1" (Auger Refusal)
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-12
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	672.0	**Weather**	Overcast 30s	**Engineer**	J. Herrera
Date Started	12/13/2023	**Completed**	12/13/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	1							TOPSOIL 0'8"
			3	6	4	S-1	0'-2'	15"	Loose brown moist to wet SILT, little sand, little gravel, trace clay
	5	8							
			13	22	21	S-2	2'-4'	18"	S-2: Firm, moist, little to some gravel, little to some sand
5	9	9							S-3: Few clay lenses noted
			13	16	22	S-3	4'-6'	24"	
	2	30							
			31	34	61	S-4	6'-8'	16"	S-4: Very dense, little clay, cobble fragments noted in shoe
	10	20							
10			30	24	50	S-5	8'-10'	24"	S-5: Dense, moist to wet
	26	24							
			29	30	53	S-6	10'-12'	24"	S-6: Very dense
									13'6"
									Dense gray moist to wet SHALE (highly weathered with sporadic layers of highly
	14	23							decomposed shale) 15'0"
15			19	22	42	S-7	13'-15'	24"	Compact tan-brown saturated SILT,
	15	13							little to some gravel, little sand, little clay 16'0"
			15	49	28	S-8	15'-17'	16"	Compact gray moist to wet SHALE (highly weathered with sporadic layers of highly
									decomposed shale) 17'5"
									Boring Terminated at 17'5" (Auger Refusal)
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-13
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	674.0	**Weather**	Overcast 30s	**Engineer**	J. Herrera
Date Started	12/13/2023	**Completed**	12/13/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	2							TOPSOIL 0'9"
			3	4	5	S-1	0'-2'	17"	Loose brown moist to wet SILT, trace to little SAND, trace gravel, trace clay
	5	10							
			19	26	29	S-2	2'-4'	24"	S-2: Compact, little to some gravel, little to some sand
5	28	38							S-3: Very dense, damp
			55	50/2"	93	S-3	4'-5'8"	19"	
	50/2"				50/2"	S-4	6'-6'2"	0	S-4: No recovery
	28	48							
10			50/5"		98/11"	S-5	8'-9'5"	17"	S-5: Very dense
	20	37							
			41	54	78	S-6	10'-12'	19"	
									13'0"
	26	46							Very dense gray damp SILT, little to some sand, little to some gravel, trace clay
15			50/4"		96/10"	S-7	13'-14'4"	15"	
	14	29							
			51	50/5"	80	S-8	15'-16'11"	23"	
									17'10"
									Boring Terminated at 17'10" (Auger Refusal)
20									
25									
30									Notes: 1. Dry upon completion. 2. Advanced hole using hollow stem augers. 3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-14
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	677.5	**Weather**	Overcast 30s	**Engineer**	J. Herrera
Date Started	12/13/2023	**Completed**	12/13/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	2	3							TOPSOIL 0'10"
			2	3	5	S-1	0'-2'	17"	Loose brown wet SILT, little sand, trace gravel, little clay
	4	9							
			9	15	18	S-2	2'-4'	9"	S-2: Firm, little gravel
5	14	41							
			27	33	68	S-3	4'-6'	24"	S-3: Very dense, damp/moist, little to some sand, little to some gravel, cobble fragments noted in shoe
	36	50/5"			50/5"	S-4	6'-6'11"	2"	S-4: Cobble fragments noted, poor recovery
	24	43							
10			50	50/4"	93	S-5	8'-9'10"	24"	S-5: Very dense, little to some gravel, little to some sand
	44	50/4"			50/4"	S-6	10'-10'10"	3"	S-6: Cobble fragments noted in spoon
									13'0"
	41	55							Very dense gray damp SILT, little to some gravel, little sand, trace clay
15			50/5"		105/11"	S-7	13'-14'5"	20"	
	18	28							
			28	40	56	S-8	15'-17'	24"	S-8: Moist
									18'0"
	50/2"				50/2"	S-9	18'-18'2"	21"	Very dense gray dry SHALE 18'7"
20									Boring Terminated at 18'7" (Auger Refusal)
25									
30									Notes: 1. Dry upon completion. 2. Advanced hole using hollow stem augers. 3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-15
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	671.0	**Weather**	Pt sunny 40s	**Engineer**	J. Herrera
Date Started	12/15/2023	**Completed**	12/15/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	7	6							Firm gray damp CRUSHED STONE, little silt, little sand, poor recovery 2'0"
			9	9	15	S-1	0'-2'	3"	Loose brown wet SILT, little sand, trace to little gravel
	2	3							
			2	2	5	S-2	2'-4'	18"	
5	1	1							S-3: Trace to little clay
			1	2	2	S-3	4'-6'	5"	
	1	2							S-4: Little gravel, little clay 8'0"
			4	7	6	S-4	6'-8'	22"	
	36	48							Very dense gray damp SHALE (highly decomposed) 9'3"
10			50/3"		98/9"	S-5	8'-9'3"	18"	Boring Terminated at 9'3"
15									
20									
25									
30									Notes: 1. Dry upon completion. 2. Advanced hole using hollow stem augers. 3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-16
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	673.5	**Weather**	Pt sunny 40s	**Engineer**	J. Herrera
Date Started	12/15/2023	**Completed**	12/15/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	2							TOPSOIL 0'10"
			6	8	8	S-1	0'-2'	23"	Loose brown moist to wet SILT, little sand, little gravel
	20	50/4"			50/4"	S-2	2'-2'10"	9"	S-2: Very dense, trace clay, cobble fragments noted in shoe
									(Numerous cobbles 3'-4')
5	26	23							S-3: Very dense, little to some sand, little to some gravel
			33	27	56	S-3	4'-6'	13"	
	26	32							
			27	24	59	S-4	6'-8'	24"	
	32	40							
10			42	50/4"	82	S-5	8'-9'10"	22"	9'10"
									Boring Terminated at 9'10"
15									
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-17
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	676.5	**Weather**	Pt sunny 40s	**Engineer**	J. Herrera
Date Started	12/15/2023	**Completed**	12/15/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	3							TOPSOIL 0'10"
			3	3	6	S-1	0'-2'	18"	Loose tan-brown wet to saturated SILT, little sand, trace gravel
	2	6							
			15	15	21	S-2	2'-4'	21"	S-2: Firm, moist to wet, little to some gravel, little to some sand
5	50/4"				50/4"	S-3	4'-4'4"	-	S-3: No recovery
	50/3"				50/3"	S-4	6'-6'3"	-	S-4: No recovery
	13	20							
10			20	26	40	S-5	8'-10'	24"	S-5: Compact
									10'0"
									Boring Terminated at 10'0"
15									
20									
25									
30									Notes: 1. Dry upon completion. 2. Advanced hole using hollow stem augers. 3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-18
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	672.5	**Weather**	Pt sunny 40s	**Engineer**	J. Herrera
Date Started	12/14/2023	**Completed**	12/14/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	1							TOPSOIL 0'10"
			2	4	3	S-1	0'-2'	19"	Loose brown wet SILT, little sand, little gravel
	5	8							
			15	11	23	S-2	2'-4'	19"	S-2: Firm, moist
5	12	13							S-3: Little to some sand, little to some gravel
			16	23	29	S-3	4'-6'	24"	
	19	24							S-4: Very dense
			38	26	62	S-4	6'-8'	24"	
	20	27							
10			39	38	66	S-5	8'-10'	24"	S-5: Few medium grained sand pockets noted
									10'0"
									Boring Terminated at 10'0"
15									
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-19
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	664.5	**Weather**	Pt sunny 40s	**Engineer**	J. Herrera
Date Started	12/14/2023	**Completed**	12/14/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	3							TOPSOIL 0'9"
			4	6	7	S-1	0'-2'	20"	Loose brown moist to wet SILT, little sand, trace to little gravel
	10	15							
			12	10	27	S-2	2'-4'	17"	S-2: Compact, wet, little to some sand, little to some gravel
5	11	10							S-3: Compact, trace clay, few medium grain sand pockets
			22	14	32	S-3	4'-6'	20"	
	16	13							S-4: Little to some clay, saturated below 8'
			13	8	26	S-4	6'-8'	10"	S-5: Very dense, highly decomposed shale
	50/5"				50/5"	S-5	8'-8'5"	5"	noted in shoe 8'5"
10									Boring Terminated at 8'5"
15									
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-20
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	675.0	**Weather**	Pt sunny 40s	**Engineer**	J. Herrera
Date Started	12/14/2023	**Completed**	12/14/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	2							TOPSOIL 0'8"
			3	4	5	S-1	0'-2'	19"	Loose brown moist to wet SILT, little sand, little gravel, trace clay
	6	6							
			9	11	15	S-2	2'-4'	24"	S-2: Firm, little to some gravel
5	10	12							S-3: Compact, little to some sand
			16	23	28	S-3	4'-6'	24"	
	23	20							S-4: Very dense
			34	32	54	S-4	6'-8'	22"	
	35	34							
10			40	45	74	S-5	8'-10'	23"	
									10'0"
									Boring Terminated at 10'0"
15									
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-21
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	670.5	**Weather**	Pt sunny 40s	**Engineer**	J. Herrera
Date Started	12/15/2023	**Completed**	12/15/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	3							TOPSOIL 0'10"
			3	3	6	S-1	0'-2'	20"	Loose brown wet SILT, little sand, little gravel, trace clay
	3	7							
			13	13	20	S-2	2'-4'	21"	S-2: Compact, moist to wet, little to some sand, little to some gravel
5	13	35							S-3: Very dense,
			21	23	56	S-3	4'-6'	16"	numerous cobbles noted augering to 8'
	24	43							11'6"
			50/3"		93/9"	S-4	6'-7'3"	18"	Very dense gray moist SILT, little to some gravel, little to some sand, trace to little clay
	28	49							
10			50/3"		99/9"	S-5	8'-9'3"	18"	
	32	35							
15			30	33	65	S-6	13'-15'	22"	
	31	42							
			47	50/4"	89	S-7	15'-16'10"	22"	
	52	50/5"			50/5"	S-8	17'-17'11"	18"	17'11"
									Boring Terminated at 17'11"
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-22
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation		**Weather**	Pt sunny 40s	**Engineer**	J. Herrera
Date Started	12/15/2023	**Completed**	12/15/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
									Deleted in the field
5									
10									
15									
20									
25									
30									

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-23
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	680.5	**Weather**	Pt sunny 40s	**Engineer**	J. Herrera
Date Started	12/14/2023	**Completed**	12/14/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	2							TOPSOIL 0'10"
			2	6	4	S-1	0'-2'	19"	Loose brown moist to wet SILT, little sand, little gravel
	15	10							
			13	18	23	S-2	2'-4'	24"	S-2: Firm, little to some sand, little to some gravel
5	12	15							S-3: Compact
			15	19	30	S-3	4'-6'	24"	
	21	23							
			25	29	48	S-4	6'-8'	23"	
	10	15							
10			19	27	34	S-5	8'-10'	23"	
	50/1"				50/1"	S-6	13'-13'1"	1"	S-6: Cobble fragments noted in shoe, Poor recovery
15									
									16'6"
									Very dense gray damp to moist SILT, little sand, little gravel, shale fragments noted in shoe
	44	50/4"			50/4"	S-7	18'-18'10"	10"	18'10"
20									Boring Terminated at 18'10"
25									
30									Notes: 1. Dry upon completion. 2. Advanced hole using hollow stem augers. 3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-24
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation		**Weather**	Pt sunny 40s	**Engineer**	J. Herrera
Date Started	12/14/2023	**Completed**	12/14/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
									Deleted in the field
5									
10									
15									
20									
25									
30									

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	B23-25
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	679.0	**Weather**	Pt sunny 40s	**Engineer**	J. Herrera
Date Started	12/14/2023	**Completed**	12/14/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	2							TOPSOIL 0'9"
			4	6	6	S-1	0'-2'	21"	Loose brown moist to wet SILT, little sand, little gravel
	9	17							
			28	32	45	S-2	2'-4'	12"	S-2: Dense, little to some sand, little to some gravel
5	17	25							S-3: Very dense
			27	29	52	S-3	4'-6'	24"	
	32	50/5"			50/5"	S-4	6'-6'11"	18"	11'6"
									Dense tan saturated SAND, some silt, little gravel
	18	23							
10			50/4"		73/10"	S-5	8'-9'4"	13"	
	8	18							
15			29	19	47	S-6	13'-15'	18"	
	17	26							
			23	28	49	S-7	15'-17'	23"	
	35	39							
			41	4	80	S-8	17'-19'	24"	S-8: Very dense 19'0"
20									Boring Terminated at 19'0"
25									
30									Notes: 1. Water at 8'8" with augers out. 2. Advanced hole using hollow stem augers. 3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	I23-1
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	680.5	**Weather**	Overcast 30s	**Engineer**	J. Herrera
Date Started	12/11/2023	**Completed**	12/11/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	2							TOPSOIL 0'7"
			4	7	6	S-1	0'-2'	17"	Loose brown wet SILT, little sand, little gravel
	9	19							
			26	32	45	S-2	2'-4'	22"	S-2: Dense, damp, little to some sand
5	15	29							S-3: Very dense
			42	52	71	S-3	4'-6'	24"	
	50/5"				50/5"	S-4	6'-6'5"	5"	S-4: Poor recovery
	16	42							S-5: Shale fragments noted in shoe, auger locked in hole augering down to 13'
10			50/4"		92/10"	S-5	8'-9'4"	16"	
									11'0"
									Boring Terminated at 11'0" (Auger Refusal)
15									
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	I23-2
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	669.0	**Weather**	Overcast 30s	**Engineer**	J. Herrera
Date Started	12/11/2023	**Completed**	12/11/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	2							TOPSOIL 0'9"
			2	3	4	S-1	0'-2'	18"	Loose brown wet SILT, little sand, trace to little gravel, trace clay, rootlets noted
	9	11							
			16	20	27	S-2	2'-4'	22"	S-2: Compact, damp to moist, little to some sand, little gravel
5	13	16							S-3: Few clay lenses noted
			17	16	33	S-3	4'-6'	24"	6'0"
	14	13							Compact brown moist to wet SILT, some clay, little gravel
			15	17	28	S-4	6'-8'	24"	8'0"
	21	15							Compact gray-brown wet SILT, some clay, little gravel (highly decomposed shale)
10			14	14	29	S-5	8'-10'	24"	10'0"
									Boring Terminated at 10'0"
15									
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	I23-3
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	665.5	**Weather**	Overcast 30s	**Engineer**	J. Herrera
Date Started	12/11/2023	**Completed**	12/11/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	4							TOPSOIL 0'7"
			3	3	7	S-1	0'-2'	12"	Loose brown moist to wet SILT, little sand, little gravel
	1	7							
			7	8	14	S-2	2'-4'	22"	S-2: Firm, little to some sand, little to some gravel
5	2	5							
			7	7	12	S-3	4'-6'	23"	
	26	21							S-4: Very dense
			37	35	58	S-4	6'-8'	-	
	50/5"				50/5"	S-5	8'-8'5"	5"	8'5"
10									Boring Terminated at 8'5"
15									
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	I23-4
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	672.0	**Weather**	Pt sunny 40s	**Engineer**	J. Herrera
Date Started	12/14/2023	**Completed**	12/14/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	WH	3							TOPSOIL 0'9"
			3	3	6	S-1	0'-2'	21"	Loose brown moist to wet SILT, little sand, trace gravel
	3	5							
			6	10	11	S-2	2'-4'	24"	S-2: Firm, little to some gravel, trace clay
5	13	16							S-3: Compact
			23	39	39	S-3	4'-6'	8"	
	24	21							S-4: Dense, little to some sand
			29	33	50	S-4	6'-8'	24"	
	34	25							
10			27	30	52	S-5	8'-10'	24"	S-5: Very dense
									10'0"
									Boring Terminated at 10'0"
15									
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

Boring Log

Project No.	5521.0	**Page** 1 **of** 1		**Test Boring No.**	I23-5
Project Name	OXBO Manufacturing Facility, South Lake Road, Bergen, NY				
Client	LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY				
Elevation	675.5	**Weather**	Pt sunny 40s	**Engineer**	J. Herrera
Date Started	12/14/2023	**Completed**	12/14/2023	**Driller**	B. Swartz
Drilling Company:	Nothnagle Drilling			**Drilling Equipment:**	CME 55ATV

Ft.	Blows Per Six Inches 0"/6"	6"/12"	12"/18"	18"/24"	N Value	Sample No.	Depth	Rec	Visual Soil and Rock Classifications / Remarks
	1	2							TOPSOIL 0'9"
			4	3	6	S-1	0'-2'	23"	Loose brown moist to wet SILT, little sand, little gravel, rootlets noted
	5	3							
			4	6	7	S-2	2'-4'	19"	S-2: Dark brown, little to some sand, trace gravel, possible organics 4'0"
5	4	7							Firm tan wet SAND, some silt
			7	7	14	S-3	4'-6'	23"	7'0"
	7	6							Medium red-brown wet CLAY, some silt,
			4	4	10	S-4	6'-8'	22"	trace gravel 8'0"
	3	3							Loose tan wet SILT, some gravel,
10			3	3	6	S-5	8'-10'	10"	little to some sand, little to some clay 10'0"
									Boring Terminated at 10'0"
15									
20									
25									
30									

Notes:
1. Dry upon completion.
2. Advanced hole using hollow stem augers.
3. Bore hole backfilled using auger spoils.

N=No. of blows to Drive 2" Spoon 12" with 140 lb. Wt. 30" Ea. Blow Hammer: Auto Size Rod: 2¾"

Foundation Design, P.C.

SOIL • BEDROCK • GROUNDWATER

December 28, 2023

LeChase Construction Services
205 Indigo Creek Drive
Rochester, New York 14626

Attention: Ms. Kailly Mintel

Reference: OXBO Manufacturing Facility
7062 South Lake Road, Bergen, New York
Laboratory Test Results, 5521.0

Dear Ms. Mintel:

Foundation Design, P.C. is pleased to present the following results of the laboratory testing performed on the referenced project. The testing was performed in accordance with the following ASTM test methods:

5	Sieve Analysis	ASTM D-1140
7	Moisture Content Test	ASTM D-2216
2	Plastic Limits/Liquid Limits/Plasticity Index	ASTM D-4318

We appreciate the opportunity to provide these testing services and look forward to hearing from you again in the near future.

Sincerely,

FOUNDATION DESIGN, P.C.

Jay A. Goggin
Laboratory Manager

Foundation Design, P.C.

OXBO Manufacturing Facility
7062 South Lake Road, Bergen, New York
5521.0

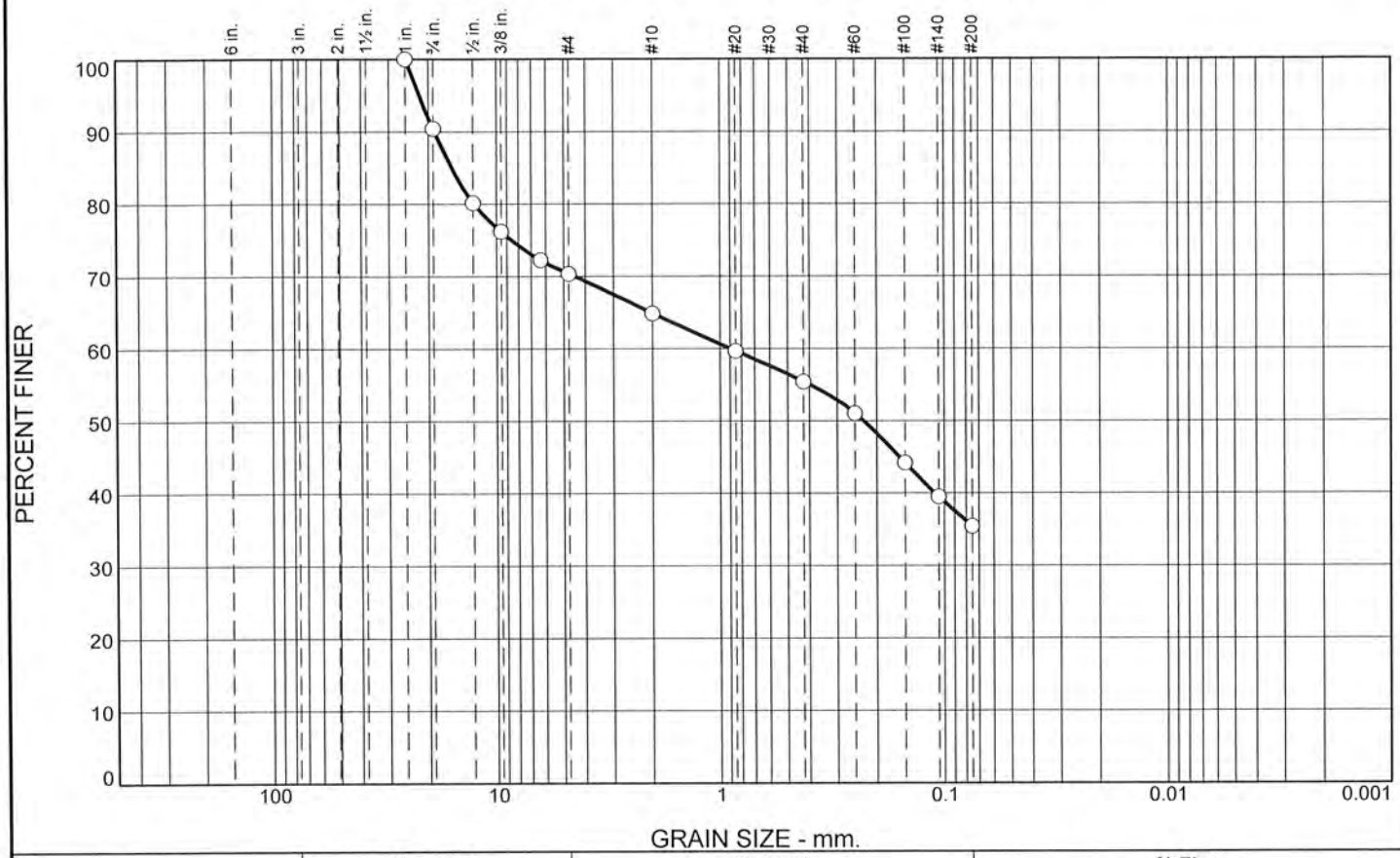
12-28-2023

Moisture Content Test Report
(ASTM D-2216)

Moisture Content Test Results				
Boring Number	I23-4	I23-5	B23-6	B23-9
Sample Number	S-3	S-4	S-3	S-4
Depth	4′-6′	6′-8′	4′-6′	6′-7′10″
Moisture Content (%)	**6.6**	**24.6**	**8.3**	**8.3**

Moisture Content Test Results			
Boring Number	B23-12	B23-23	B23-5
Sample Number	S-3	S-4	S-4
Depth	4′-6′	6′-8′	6′-6′11″
Moisture Content (%)	**10.0**	**8.6**	**8.6**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	10	20	5	10	20	35	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100		
3/4"	90		
1/2"	80		
3/8"	76		
1/4"	72		
#4	70		
#10	65		
#20	60		
#40	55		
#60	51		
#100	44		
#140	40		
#200	35		

* (no specification provided)

Soil Description

SM: Brown silty sand with gravel per ASTM D-2488

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 18.8089 D_{85}= 15.7949 D_{60}= 0.9033
D_{50}= 0.2292 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Test performed on 223.44 grams of oven dried sample

Source of Sample: I23-4 **Depth:** 4'-6'
Sample Number: s-3

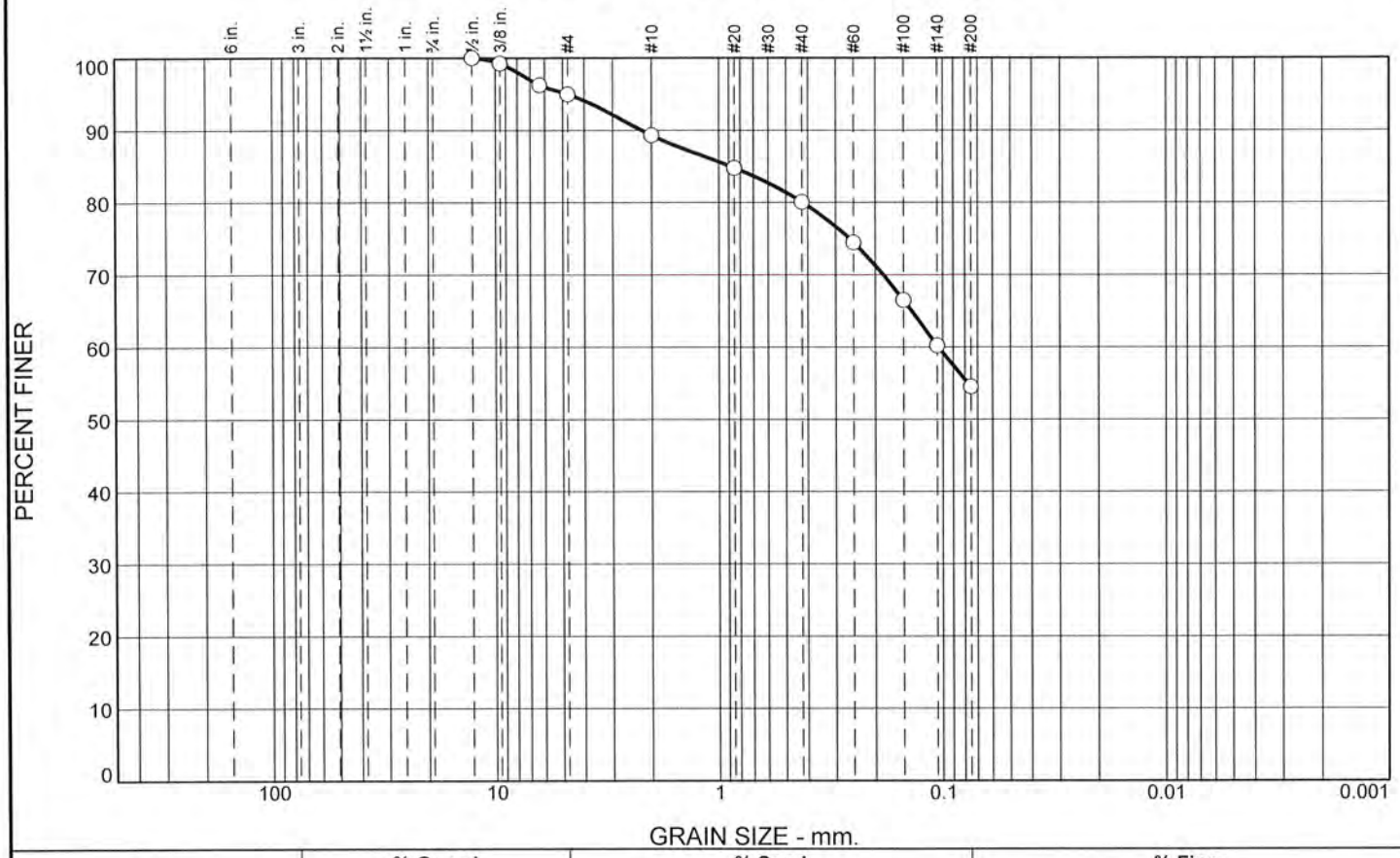
Date: 12-27-2023

Foundation Design, P.C.

Client: LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY
Project: OXBO Manufacturing Facility
7062 South Lake Road, Bergen, New York
Project No: 5521.0 **Figure**

Tested By: JCS **Checked By:** JAG

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	5	6	9	26	54	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100		
3/8"	99		
1/4"	96		
#4	95		
#10	89		
#20	85		
#40	80		
#60	74		
#100	66		
#140	60		
#200	54		

* (no specification provided)

Soil Description

ML: Brown sandy silt per ASTM D-2488

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 2.2276 D_{85}= 0.8863 D_{60}= 0.1047
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Test performed on 191.96 grams of oven dried sample

Source of Sample: B23-6 **Depth:** 4'-6'
Sample Number: S-3

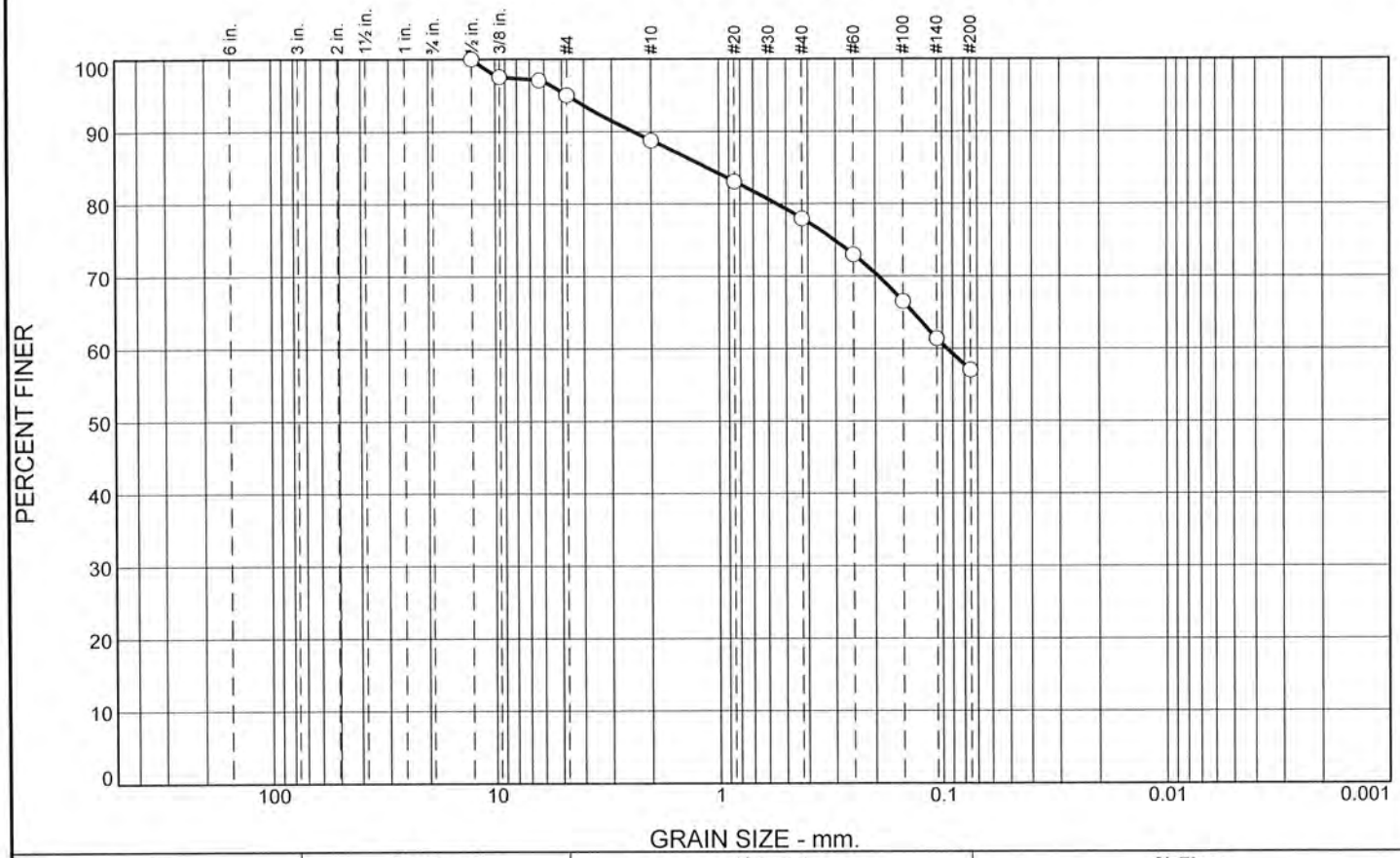
Date: 12-27-2023

Foundation Design, P.C.

Client: LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY
Project: OXBO Manufacturing Facility
7062 South Lake Road, Bergen, New York
Project No: 5521.0 **Figure**

Tested By: JCS **Checked By:** JAG

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	5	6	11	21	57	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100		
3/8"	98		
1/4"	97		
#4	95		
#10	89		
#20	83		
#40	78		
#60	73		
#100	67		
#140	61		
#200	57		

* (no specification provided)

Soil Description

ML: Tan brown sandy silt per ASTM D-2488

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 2.4191 D_{85}= 1.1311 D_{60}= 0.0956
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Test performed on 240.0 grams of oven dried sample

Source of Sample: B23-9 **Depth:** 6'-7'10"
Sample Number: S-4

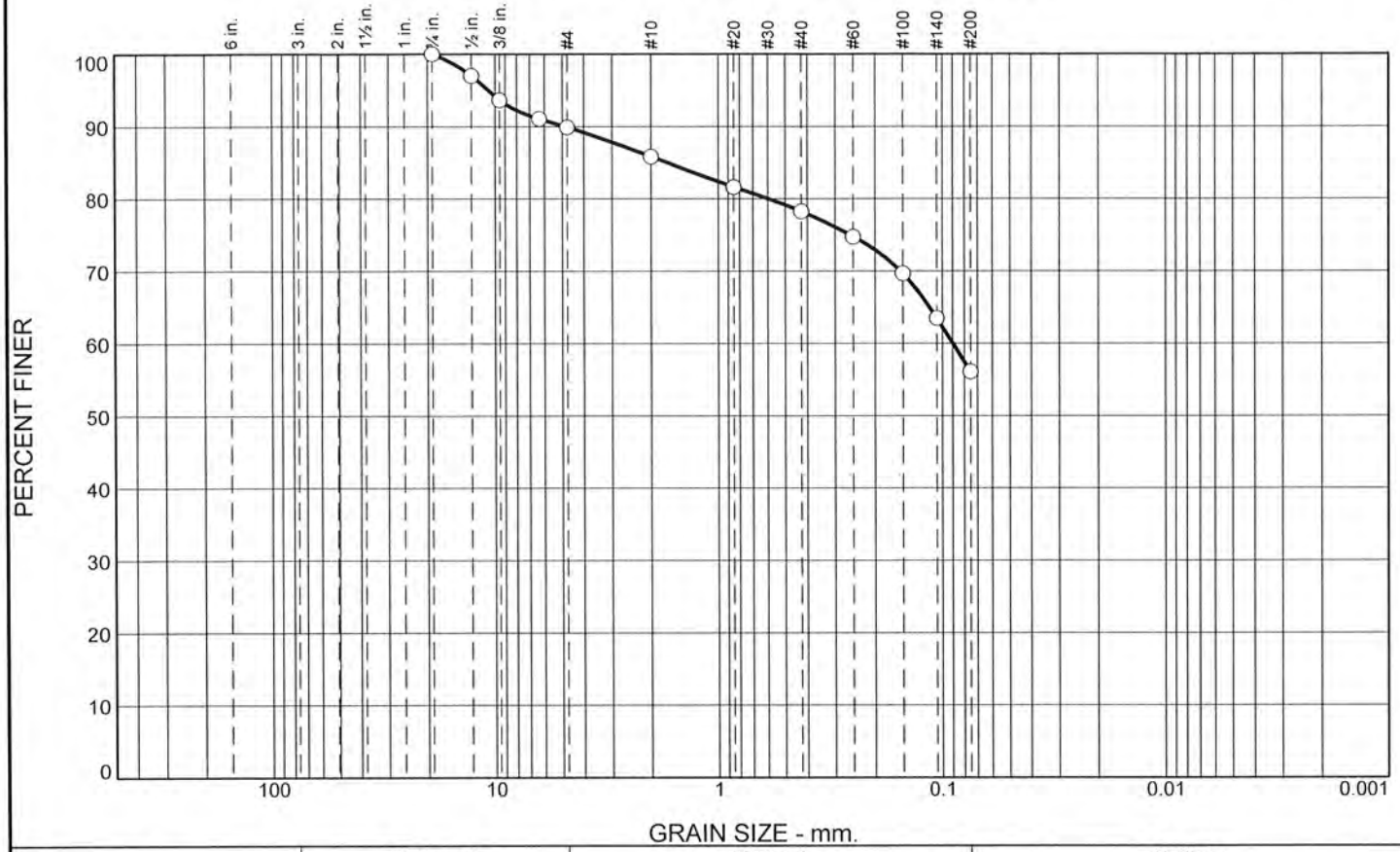
Date: 12-27-2023

Foundation Design, P.C.

Client: LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY
Project: OXBO Manufacturing Facility
7062 South Lake Road, Bergen, New York
Project No: 5521.0 **Figure**

Tested By: JCS **Checked By:** JAG

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	10	4	8	22	56	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100		
1/2"	97		
3/8"	94		
1/4"	91		
#4	90		
#10	86		
#20	82		
#40	78		
#60	75		
#100	70		
#140	63		
#200	56		

* (no specification provided)

Soil Description

ML: Brown sandy silt per ASTM D-2488

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 4.8932 D_{85}= 1.6997 D_{60}= 0.0898
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Test performed on 269.42 grams of oven dried sample

Source of Sample: B23-23 **Depth:** 6'-8'
Sample Number: S-4

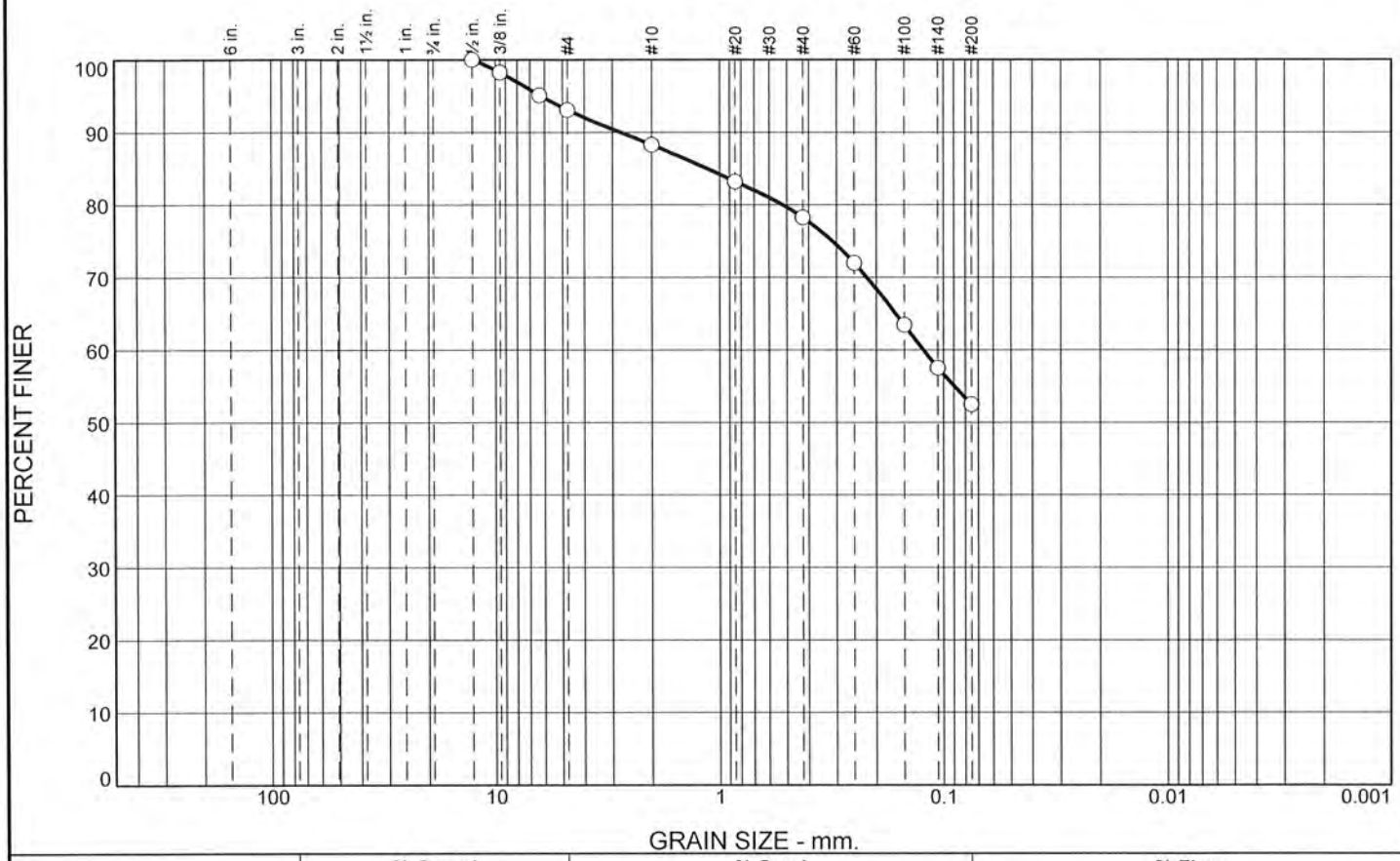
Date: 12-28-2023

Foundation Design, P.C.

Client: LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY
Project: OXBO Manufacturing Facility
7062 South Lake Road, Bergen, New York
Project No: 5521.0 **Figure**

Tested By: JCS **Checked By:** JAG

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	7	5	10	26	52	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100		
3/8"	98		
1/4"	95		
#4	93		
#10	88		
#20	83		
#40	78		
#60	72		
#100	63		
#140	58		
#200	52		

* (no specification provided)

Soil Description

ML: Brown sandy silt per ASTM D-2488

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 2.7770 D_{85}= 1.1439 D_{60}= 0.1233
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Test performed on 204.91 grams of oven dried sample

Source of Sample: B23-25 **Depth:** 6'-6'11"
Sample Number: S-4

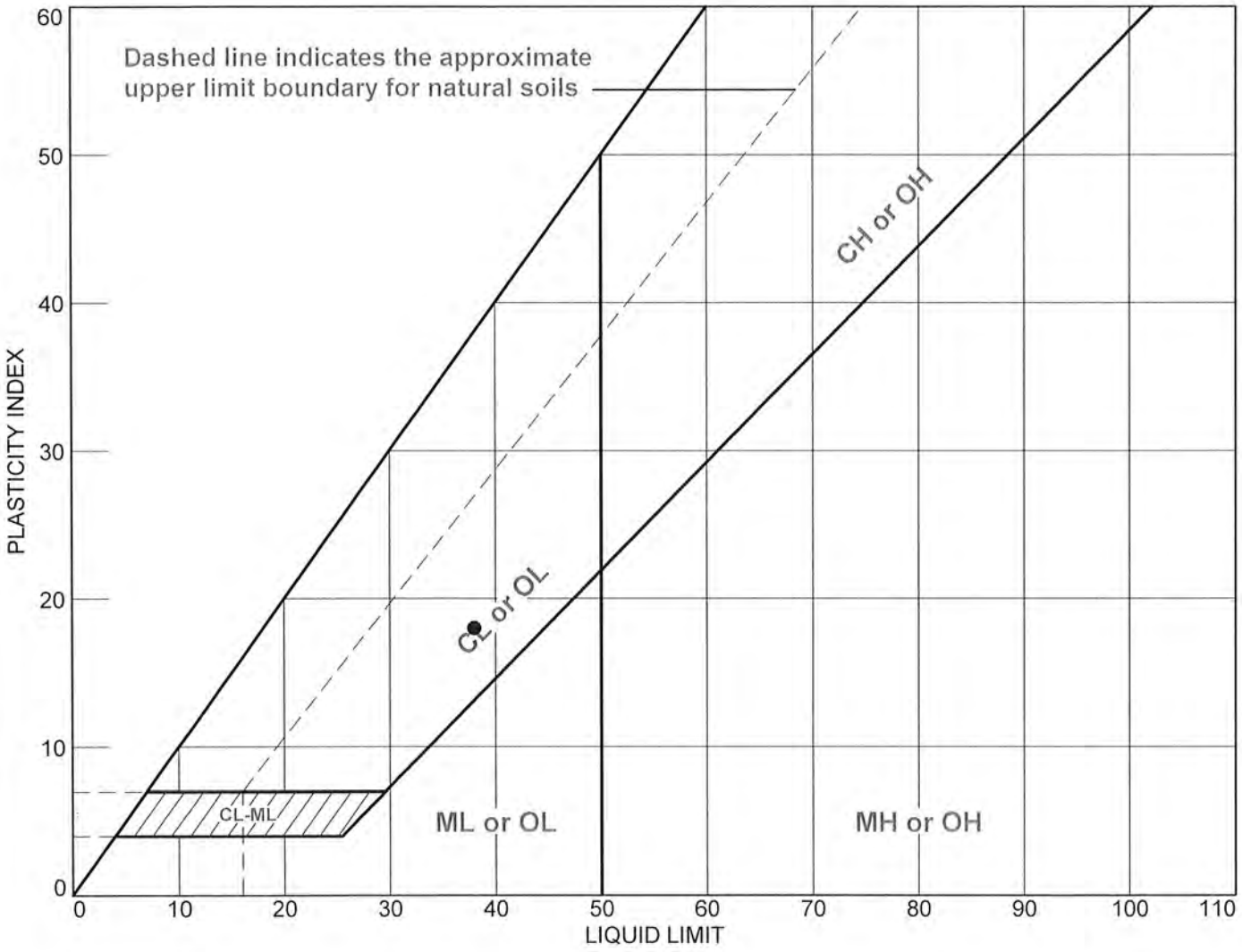
Date: 12-28-2023

Foundation Design, P.C.

Client: LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY
Project: OXBO Manufacturing Facility
7062 South Lake Road, Bergen, New York
Project No: 5521.0 **Figure**

Tested By: JCS **Checked By:** JAG

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

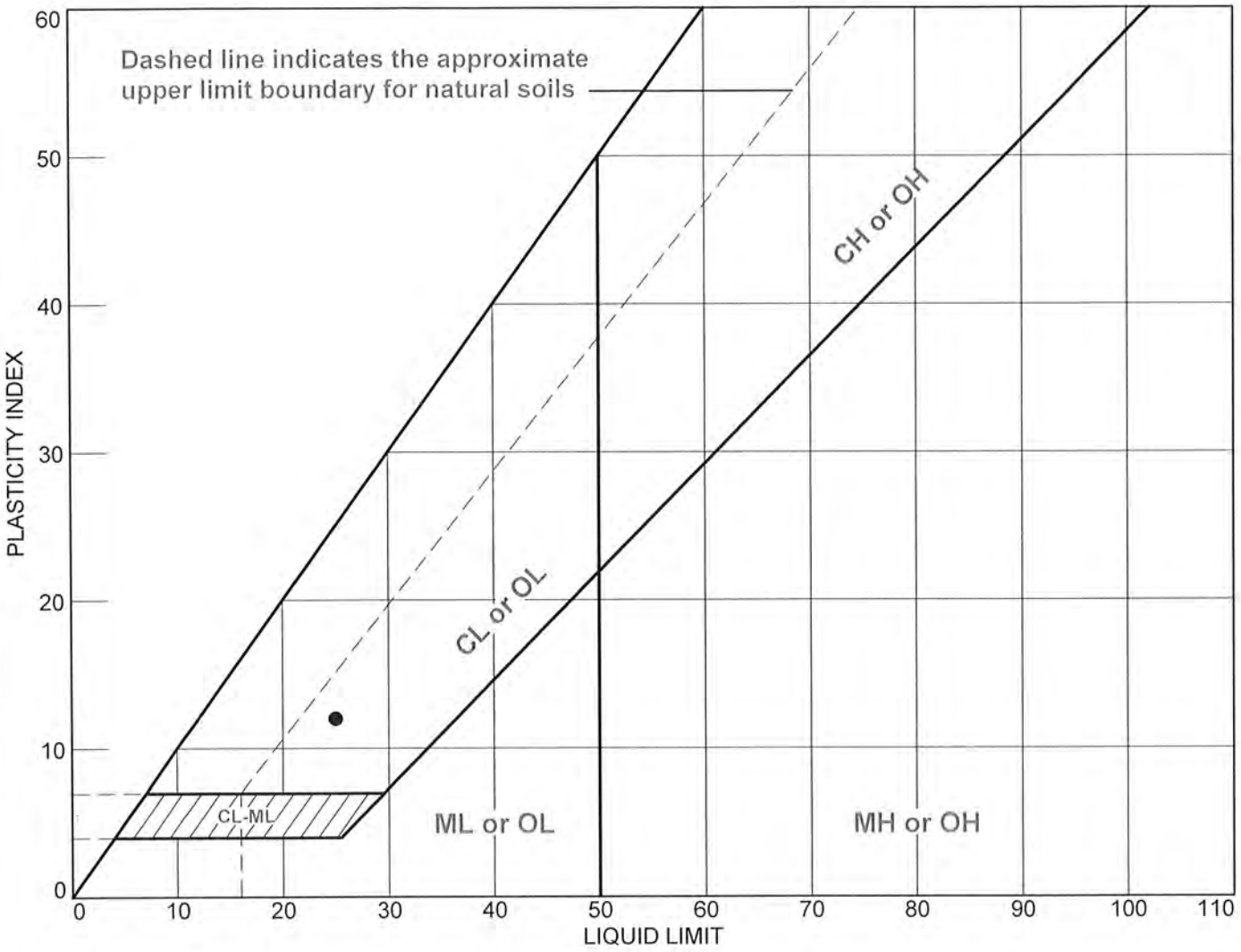
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	I23-5	S-4	6'-8'	24.6	20	38	18	CL

Foundation Design, P.C.

Client: LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY
Project: OXBO Manufacturing Facility
7062 South Lake Road, Bergen, New York
Project No.: 5521.0 **Figure**

Tested By: JCS **Checked By:** JAG

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B23-12	S-3	4'-6'	10.0	13	25	12	CL

Foundation Design, P.C.

Client: LeChase Construction Services, 205 Indigo Creek Drive, Rochester, NY
Project: OXBO Manufacturing Facility
7062 South Lake Road, Bergen, New York
Project No.: 5521.0 **Figure**

Tested By: JCS **Checked By:** JAG

STORMWATER POLLUTION PREVENTION PLAN
FOR

OXBO Manufacturing Facility
7015 South Lake Road
Town of Bergen
New York

May 20, 2024

Project M-2405

Prepared by:
Metzger Civil Engineering, PLLC
8245 Sheridan Drive
Williamsville, NY 14221
Phone 716-633-2601
meteng@roadrunner.com

Michael J. Metzger, P.E.
License No. 066786

TABLE OF CONTENTS

This Stormwater Pollution Prevention Plan was prepared and numbered in general conformance with the guidelines set forth in the New York State Department of Environmental Conservation SPDES General Permit for Stormwater Discharges from Construction Activities - Permit No. GP-0-20-001.

1a. Background Information:

The project consists of the construction of a new manufacturing facility in Bergen, New York. The facility will be located on South Lake Road (Route 19) south of Clinton Street Road (Route 33). The project will include driveways, parking and related infrastructure to service a new manufacturing building. The new development will sit on a 49.70 acre parcel which is currently undeveloped.

1b. Site Map:

A site map has been included on the cover sheet of the plan set which is part of this SWPPP.

1c. Soils:

The site is shown on the USDA , Genesee County Soils Map as having 6 different soil types (refer to Appendix F) . The primary soil type is Lima silt loam (LmB) soil. This soil type is classified as belonging to the hydrologic soil group (HSG) "B/D". Depth to bedrock is over 80".

1d. Construction Phasing:

1. Installation of a stabilized construction entrance.
2. Installation of silt protection on all areas downstream of proposed disturbance.
3. Clearing and grubbing.
4. Removal and stockpiling of topsoil and fill.
5. Construction of the bioretention areas and stormwater ponds.
6. Infrastructure construction (drainage, water and sanitary sewers).
7. Excavation and construction of the driveways.
8. Building Construction.
9. Removal of the control measures upon establishment of grass as outlined herein.

1e. Pollution Prevention Measures:

A stabilized construction entrance will be required and maintained until the final paving has been installed as outlined by "New York State Guidelines for Erosion and Sediment Control section 5A.73". This entrance must be kept clean to ensure no mud is allowed to enter the public roadway. Dust must be controlled by sweeping and / or truck washing. All truck tire wash water must be properly contained on site and concrete truck wash out must be contained and disposed of properly. Silt socks are to be installed as detailed on the design plans.

1f. Soil Stabilization:

The site will be seeded and grassed as soon as possible upon fine grading of any particular area. Any disturbed area or temporary stockpile left idle must be stabilized within 14 calendar days after last being worked. If greater than 5 acres are disturbed at one time, disturbed areas must be stabilized within 7 calander days. All sediment controls are to remain in place until turf has been established and the site is stabilized as defined in the SPDES General Permit.

1g. Site Map:

A site map and details have been included in the design plans for this site.

1h. Details:

The size, material specifications, maintenance and installation requirements of stormwater pollution prevention devices are given on the detail sheets for this project. Silt sock is to be replaced when torn or if captured silt reached 50% of the sock height. The stabilized construction entrance shall be resurfaced before the stone becomes impregnated with silt to the point where trucks are tracking silt onto the roadway.

1i. Inspection Schedule:

A "trained contractor" must be on site daily when soil disturbance activities are being performed and must inspect, clean and repair as required all stormwater pollution prevention devices on site.

The inspection of all stormwater pollution prevention devices will be the responsibility of a "qualified professional" before, during and after construction as outlined in the SPDES General Permit for Construction Activity GP-0-20-001 included in this SWPPP.

All devices must be in place prior to work in any upstream area and maintained at all times during construction. A "qualified inspector" must inspect all stormwater pollution prevention practices:

a. Prior to construction.
b. Every 7 days (minimum), twice every seven days if current site disturbance exceeds 5 acres in size.
c. Prior to issuance of the Notice of Termination.

1j. Pollution prevention measures:

The site is to be kept free of litter by providing on site waste receptacles. Contractors are to be instructed not to place litter in open excavations or the rear of open bed trucks.

Contractors are to ensure that construction chemicals are handled in strict compliance with OSHA standards. This includes proper storage containers and labeling of chemicals. On site storage of chemicals should be avoided whenever possible. Chemicals are to be protected from rain and wind. Chemical spills are to be reported immediately to NYSDEC spill response. Spill kits and /or absorbent materials must be kept on site and employees shall be trained in their use.

Long term on site storage of construction debris should be avoided whenever possible. On site construction debris is to be kept in a fashion to prevent the pollution via wind or stormwater runoff.

The site is to be serviced by two bioretention areas and two dry detention areas. Several erosion and sediment control measures are to be implemented as noted on the design drawings. The "General Contractor" will ultimately be responsible for all subcontracted work, and therefore, the installation, maintenance and removal of SWPPP devices.

1k. Stormwater discharges from sources other than construction

There are no other discharge sources for this site.

1l. Elements that are NOT in compliance with New York State Standards and Specifications for Erosion and Sediment Control

The Erosion and Sediment Control elements for this site have been designed to be in general compliance with the New York State Standards and Specifications for Erosion and Sediment Control.

2a Permanent stormwater management practices

The site will have gravel diaphragms, two bioretention areas and two on site dry detention areas. Each detention areas will be served by an outlet control pipe.

2b Site map

A site map has been provided as part of the overall engineering design.

2c. Stormwater analysis

A complete set of Stormwater calculations have been included as Appendix D of this plan. Please note all requirements of the NYSDEC Stormwater regulations and Town Standards have been met.

2d. Soil Test Analysis

This site was studied by the United States Department of Agriculture, the results of their soil survey revealed that the primary soils found on this site have this profile:
0 - 9" – SILT loam
9 - 16" – loam
16 -25" – Gravelly loam
25 -79" – Gravelly loam

Seasonal high groundwater is found at 18"

2e. Infiltration Test Results

The USDA states that the most limiting layer to transmit water is very low to moderately high: 0.00 – 1.42 inches per hour

2f. Post Construction Operation and Maintenance Plan

The owner shall be responsible for the maintenance and operation of the post construction stormwater practices to ensure their efficiency for stormwater compliance. Checklists that aid in the proper maintenance of the dry detention and bioretention areas have been included in Appendix G of the SWPPP report.

Practice	Frequency	By
Removal of Trash and Debris from the dry detention area outlet	Continuous	Owner
Maintaining the bioretention Areas Plants and vegetation	Seasonally	Owner
Maintaining the sites vegetation	Seasonally	Owner
Inspection of dry detention basin bioretention areas, outlet pipes and storm piping	Annually	Owner
Cleaning of outlet and storm piping	As needed	Owner

3a. Enhanced Phosphorus Removal Standards

This site does not lie in any watershed identified in New York State Department of Environmental Conservation SPDES General Permit for Stormwater Discharges from Construction Activities - Permit No. GP-0-20-00 and is therefore not subject to enhanced phosphorus removal standards.

APPENDIX A
NOTICE OF INTENT

STORMWATER POLLUTION PREVENTION PLAN

NOI for coverage under Stormwater General Permit for Construction Activity

version 1.37

(Submission #: HQ3-M85J-GVV8G, version 1)

Details

Originally Started By	Michael Metzger
Alternate Identifier	OXBO Manufacturing Facility
Submission ID	HQ3-M85J-GVV8G
Submission Reason	New
Status	Draft

Form Input

Owner/Operator Information

Owner/Operator Name (Company/Private Owner/Municipality/Agency/Institution, etc.)
Geis Construction South , LLC

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Watts

Owner/Operator Contact Person First Name
Kevin

Owner/Operator Mailing Address
10020 Aurora- Hudson Road

City
Streetsboro

State
Ohio

Zip
44241

Phone
330-528-3500

Email
www.geisco.net

Federal Tax ID
NONE PROVIDED

> If the owner/operator is an organization, provide the Federal Tax ID number, or Employer Identification Number (EIN), in the format xx-xxxxxxx. If the owner/operator is an individual and not an organization, enter "Not Applicable" or "N/A" and do not provide the individual's social security number.

Project Location

Project/Site Name
OXBO Manufacturing Facility

Street Address (Not P.O. Box)
7015 South Lake Road

Side of Street
East

City/Town/Village (THAT ISSUES BUILDING PERMIT)
Bergen

State
NY

Zip
14416

DEC Region
8

> The DEC Region must be provided. Please use the NYSDEC Stormwater Interactive Map (https://gisservices.dec.ny.gov/gis/stormwater/) to confirm which DEC Region this site is located in. To view the DEC Regions, click on "Other Useful Reference Layers" on the left side of the map, then click on "DEC Administrative Boundary." Zoom out as needed to see the Region boundaries.
> For projects that span multiple Regions, please select a primary Region and then provide the additional Regions as a note in Question 39.

County
GENESEE

Name of Nearest Cross Street
Clinton Street Road

Distance to Nearest Cross Street (Feet)
1050

Project In Relation to Cross Street
South

Tax Map Numbers Section-Block-Parcel
13-1-63.1

Tax Map Numbers
NONE PROVIDED

> If the project does not have tax map numbers (e.g. linear projects), enter “Not Applicable” or "N/A".

1. Coordinates

Provide the Geographic Coordinates for the project site. The two methods are:
- Navigate to the project location on the map (below) and click to place a marker and obtain the XY coordinates.
- The "Find Me" button will provide the lat/long for the person filling out this form. Then pan the map to the correct location and click the map to place a marker and obtain the XY coordinates.

Navigate to your location and click on the map to get the X,Y coordinates
43.0694615309489,-77.94684955224908

Project Details

2. What is the nature of this project?
New Construction

> For the purposes of this eNOI, “New Construction” refers to any project that does not involve the disturbance of existing impervious area (i.e. 0 acres). If existing impervious area will be disturbed on the project site, it is considered redevelopment with either increase in impervious area or no increase in impervious area.

3. Select the predominant land use for both pre and post development conditions.

Pre-Development Existing Landuse
Pasture/Open Land

Post-Development Future Land Use
Commercial

3a. If Single Family Subdivision was selected in question 3, enter the number of subdivision lots.
NONE PROVIDED

---

4. In accordance with the larger common plan of development or sale, enter the total project site acreage, the acreage to be disturbed and the future impervious area (acreage)within the disturbed area.

*** ROUND TO THE NEAREST TENTH OF AN ACRE. ***

Total Site Area (acres)
49.7

Total Area to be Disturbed (acres)
25.0

Existing Impervious Area to be Disturbed (acres)
0.0

Future Impervious Area Within Disturbed Area (acres)
11.4

5. Do you plan to disturb more than 5 acres of soil at any one time?
Yes

---

6. Indicate the percentage (%) of each Hydrologic Soil Group(HSG) at the site.

A (%)
2

B (%)
5

C (%)
0

D (%)
93

7. Is this a phased project?
No

8. Enter the planned start and end dates of the disturbance activities.

Start Date
07/01/2024

End Date
12/20/2028

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.
Tributary to Black Creek 821.40

> Drainage ditches and storm sewer systems are not considered surface waterbodies. Please identify the surface waterbody that they discharge to. If the nearest surface waterbody is unnamed, provide a description of the waterbody, such as, "Unnamed tributary to Niagara River."

9a. Type of waterbody identified in question 9?
Stream/Creek Off Site

Other Waterbody Type Off Site Description
NONE PROVIDED

9b. If "wetland" was selected in 9A, how was the wetland identified?
NONE PROVIDED

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001?
Yes

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001?
No

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters?
No

> Please use the DEC Stormwater Interactive Map (https://gisservices.dec.ny.gov/gis/stormwater/) to confirm if this site is located in one of the watersheds of an AA or AA-S classified water. To view the watershed areas, click on "Permit Related Layers" on the left side of the map, then click on "Class AA AAS Watersheds."

If No, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as D (provided the map unit name is inclusive of slopes greater than 25%), E or F on the USDA Soil Survey?
NONE PROVIDED

If Yes, what is the acreage to be disturbed?
NONE PROVIDED

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area?
No

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?
Yes

16. What is the name of the municipality/entity that owns the separate storm sewer system?
Town of Bergen

17. Does any runoff from the site enter a sewer classified as a Combined Sewer?
No

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?
No

19. Is this property owned by a state authority, state agency, federal government or local government?
Yes

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.)
No

Required SWPPP Components

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?
Yes

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)?
Yes

If you answered No in question 22, skip question 23 and the Post-construction Criteria and Post-construction SMP Identification sections.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual?
Yes

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:
Professional Engineer (P.E.)

SWPPP Preparer
Metzger Civil Engineering, PLLC

Contact Name (Last, First)
Michael Metzger

Mailing Address
8245 Sheridan Dr

City
Williamsville

State
NY

Zip
14221

Phone
7166332601

Email
meteng@roadrunner.com

Download SWPPP Preparer Certification Form

Please take the following steps to prepare and upload your preparer certification form:

1) Click on the link below to download a blank certification form
2) The certified SWPPP preparer should sign this form
3) Scan the signed form
4) Upload the scanned document
Download SWPPP Preparer Certification Form

Please upload the SWPPP Preparer Certification
NONE PROVIDED
Comment
NONE PROVIDED

Erosion & Sediment Control Criteria

25. Has a construction sequence schedule for the planned management practices been prepared?
Yes

26. Select all of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural
Construction Road Stabilization
Dust Control
Level Spreader
Silt Fence
Stabilized Construction Entrance

Biotechnical
None

Vegetative Measures
Seeding
Sodding

Permanent Structural
Rock Outlet Protection

Other
Silt sock

Post-Construction Criteria

*** IMPORTANT: Completion of Questions 27-39 is not required if response to Question 22 is No.**

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.
Preservation of Undisturbed Area
Preservation of Buffers
Reduction of Clearing and Grading
Locating Development in Less Sensitive Areas
Roadway Reduction
Sidewalk Reduction
Driveway Reduction
Cul-de-sac Reduction
Building Footprint Reduction
Parking Reduction

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).
All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout). (Acre-feet)
1.06

29. Post-construction SMP Identification

Use the Post-construction SMP Identification section to identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity that were used to reduce the Total WQv Required (#28).

Identify the SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use the Post-Construction SMP Identification section to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29. (acre-feet)
1.06

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28)?
Yes

If Yes, go to question 36. If No, go to question 32.

32. Provide the Minimum RRv required based on HSG. [Minimum RRv Required = (P) (0.95) (Ai) / 12, Ai=(s) (Aic)] (acre-feet)
NONE PROVIDED

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?
NONE PROVIDED

If Yes, go to question 33.

Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. SMPs

Use the Post-construction SMP Identification section to identify the Standard SMPs and, if applicable, the Alternative SMPs to be used to treat the remaining total WQv (=Total WQv

Required in #28 - Total RRv Provided in #30).

Also, provide the total impervious area that contributes runoff to each practice selected.

NOTE: Use the Post-construction SMP Identification section to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question #29. (acre-feet)
NONE PROVIDED

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).
NONE PROVIDED

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)?
NONE PROVIDED

If Yes, go to question 36.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv required and provided or select waiver (#36a), if applicable.

CPv Required (acre-feet)
1.3

CPv Provided (acre-feet)
1.3

36a. The need to provide channel protection has been waived because:
NONE PROVIDED

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (#37a), if applicable.

Overbank Flood Control Criteria (Qp)

Pre-Development (CFS)
39.86

Post-Development (CFS)
8.40

Total Extreme Flood Control Criteria (Qf)

Pre-Development (CFS)
122.8

Post-Development (CFS)
12.01

37a. The need to meet the Qp and Qf criteria has been waived because:
NONE PROVIDED

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed?
Yes

If Yes, Identify the entity responsible for the long term Operation and Maintenance
Owner

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). (See question #32a) This space can also be used for other pertinent project information.
Two bio-retention areas have been sized to provide 100% of the WQV. In addition, two dry detention areas have been designed to attenuate the flows leaving the site.

Post-Construction SMP Identification

Runoff Reduction (RR) Techniques, Standard Stormwater Management Practices (SMPs) and Alternative SMPs

Identify the Post-construction SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

RR Techniques (Area Reduction)

Round to the nearest tenth

Total Contributing Acres for Conservation of Natural Area (RR-1)
NONE PROVIDED

Total Contributing Impervious Acres for Conservation of Natural Area (RR-1)
NONE PROVIDED

Total Contributing Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
NONE PROVIDED

Total Contributing Impervious Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
NONE PROVIDED

Total Contributing Acres for Tree Planting/Tree Pit (RR-3)
NONE PROVIDED

Total Contributing Impervious Acres for Tree Planting/Tree Pit (RR-3)
NONE PROVIDED

Total Contributing Acres for Disconnection of Rooftop Runoff (RR-4)
NONE PROVIDED

RR Techniques (Volume Reduction)

Total Contributing Impervious Acres for Disconnection of Rooftop Runoff (RR-4)
NONE PROVIDED

Total Contributing Impervious Acres for Vegetated Swale (RR-5)
NONE PROVIDED

Total Contributing Impervious Acres for Rain Garden (RR-6)
NONE PROVIDED

Total Contributing Impervious Acres for Stormwater Planter (RR-7)
NONE PROVIDED

Total Contributing Impervious Acres for Rain Barrel/Cistern (RR-8)
NONE PROVIDED

Total Contributing Impervious Acres for Porous Pavement (RR-9)
NONE PROVIDED

Total Contributing Impervious Acres for Green Roof (RR-10)
NONE PROVIDED

Standard SMPs with RRv Capacity

Total Contributing Impervious Acres for Infiltration Trench (I-1)
NONE PROVIDED

Total Contributing Impervious Acres for Infiltration Basin (I-2)
NONE PROVIDED

Total Contributing Impervious Acres for Dry Well (I-3)
NONE PROVIDED

Total Contributing Impervious Acres for Underground Infiltration System (I-4)
NONE PROVIDED

Total Contributing Impervious Acres for Bioretention (F-5)
11.4

Total Contributing Impervious Acres for Dry Swale (O-1)
NONE PROVIDED

Standard SMPs

Total Contributing Impervious Acres for Micropool Extended Detention (P-1)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Pond (P-2)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Extended Detention (P-3)
NONE PROVIDED

Total Contributing Impervious Acres for Multiple Pond System (P-4)
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Pond (P-5)
NONE PROVIDED

Total Contributing Impervious Acres for Surface Sand Filter (F-1)
NONE PROVIDED

Total Contributing Impervious Acres for Underground Sand Filter (F-2)
NONE PROVIDED

Total Contributing Impervious Acres for Perimeter Sand Filter (F-3)
NONE PROVIDED

Total Contributing Impervious Acres for Organic Filter (F-4)
NONE PROVIDED

Total Contributing Impervious Acres for Shallow Wetland (W-1)
NONE PROVIDED

Total Contributing Impervious Acres for Extended Detention Wetland (W-2)
NONE PROVIDED

Total Contributing Impervious Acres for Pond/Wetland System (W-3)
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Wetland (W-4)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Swale (O-2)
NONE PROVIDED

Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Total Contributing Impervious Area for Hydrodynamic
NONE PROVIDED

Total Contributing Impervious Area for Wet Vault
NONE PROVIDED

Total Contributing Impervious Area for Media Filter
NONE PROVIDED

"Other" Alternative SMP?
NONE PROVIDED

Total Contributing Impervious Area for "Other"
NONE PROVIDED

Provide the name and manufaturer of the alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

Manufacturer of Alternative SMP
NONE PROVIDED

Name of Alternative SMP
NONE PROVIDED

Other Permits

40. Identify other DEC permits, existing and new, that are required for this project/facility.
None

If SPDES Multi-Sector GP, then give permit ID
NONE PROVIDED

If Other, then identify
NONE PROVIDED

41. Does this project require a US Army Corps of Engineers Wetland Permit?
No

If "Yes," then indicate Size of Impact, in acres, to the nearest tenth
NONE PROVIDED

42. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned.
NONE PROVIDED

MS4 SWPPP Acceptance

43. Is this project subject to the requirements of a regulated, traditional land use control MS4?
No

If No, skip question 44

44. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI?
NONE PROVIDED

MS4 SWPPP Acceptance Form Download

Download form from the link below. Complete, sign, and upload.
MS4 SWPPP Acceptance Form

MS4 Acceptance Form Upload
NONE PROVIDED
Comment
NONE PROVIDED

Owner/Operator Certification

Owner/Operator Certification Form Download

Download the certification form by clicking the link below. Complete, sign, scan, and upload the form.
Owner/Operator Certification Form (PDF, 45KB)

Upload Owner/Operator Certification Form
NONE PROVIDED
Comment
NONE PROVIDED

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

SWPPP Preparer Certification Form

SPDES General Permit for Stormwater Discharges From Construction Activity (GP-0-20-001)

Project Site Information

Project/Site Name

OXBO Manufacturing Facility

Owner/Operator Information

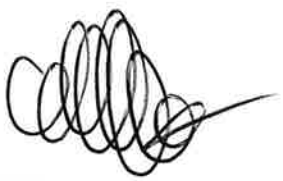
Owner/Operator (Company Name/Private Owner/Municipality Name)

Geis Construction South , LLC

Certification Statement – SWPPP Preparer

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Michael	J	Metzger
First name	MI	Last Name

Signature 

Date 5/17/24

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Owner/Operator Certification Form

SPDES General Permit For Stormwater Discharges From Construction Activity (GP-0-20-001)

Project/Site Name: OXBO Manufacturing Facility

eNOI Submission Number: HQ3-M85J-GVV8G

eNOI Submitted by: ☐ **Owner/Operator** ☑ **SWPPP Preparer** ☐ **Other**

Certification Statement - Owner/Operator

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Owner/Operator First Name M.I. Last Name

_____

Signature

_____

Date

APPENDIX B

NYSDEC SPDES GENERAL PERMIT

STORMWATER POLLUTION PREVENTION PLAN

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2020

Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

1-23-20

Authorized Signature

Date

Address: NYS DEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7, 8 and Article 70.

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a *point source* and therefore, pursuant to ECL section 17-0505 and 17-0701, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity.* The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

Table of Contents

Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

*Discharge*s authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the *Stormwater Pollution Prevention Plan* ("SWPPP") the reason(s) for the

deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

   (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s;

   (ii) Control stormwater *discharge*s, including both peak flowrates and total stormwater volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points;

   (iii) *Minimize* the amount of soil exposed during *construction activity*;

   (iv) *Minimize* the disturbance of *steep slopes*;

   (v) *Minimize* sediment *discharge*s from the site;

   (vi) Provide and maintain *natural buffer*s around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharge*s, unless *infeasible*;

   (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted;

   (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and

   (ix) *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged from the site.

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments

listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharges* from *dewatering* activities, including *discharges* from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

   (i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

   (ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

   (iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharges*.** The following *discharges* are prohibited:

   (i) Wastewater from washout of concrete;

   (ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. Sizing Criteria for New Development

(i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: Construction activities that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to site limitations shall direct runoff from all newly constructed impervious areas to a RR technique or standard SMP with RRv capacity unless infeasible. The specific site limitations that prevent the reduction of 100% of the WQv shall be documented in the SWPPP.

For each impervious area that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered infeasible.

In no case shall the runoff reduction achieved from the newly constructed impervious areas be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site discharges directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

b. *Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be

calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

c. Sizing Criteria for Redevelopment Activity

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or

(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or

(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or

(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) *Overbank* Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site

d. Sizing Criteria for Combination of Redevelopment Activity and New Development

Construction projects that include both New Development and Redevelopment Activity shall provide post-construction stormwater management controls that meet the sizing criteria calculated as an aggregate of the Sizing Criteria in Part I.C.2.a. or b. of this permit for the New Development portion of the project and Part I.C.2.c of this permit for Redevelopment Activity portion of the project.

D. Maintaining Water Quality

The Department expects that compliance with the conditions of this permit will control *discharges* necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharges* authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharges* authorized by this permit are causing or contributing to a violation of *water quality standards*, or if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharges* will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharges*; including stormwater runoff, snowmelt runoff, and surface runoff and drainage, from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater discharges are authorized by this permit: those listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: "Discharges from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned"; waters to which other components have not been added that are used to control dust in accordance with the SWPPP; and uncontaminated *discharges* from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

F. Activities Which Are Ineligible for Coverage Under This General Permit

All of the following are **not** authorized by this permit:

1. *Discharges* after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharges* that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*

operator has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.D.2 of this permit;

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharges* from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb one (1) or more acres of land designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharges* from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase "D" (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.D.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

(i) No Affect
(ii) No Adverse Affect
(iii) Executed Memorandum of Agreement, or

d. Documentation that:

(i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharges* from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have the SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department.

3. The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.F. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4* . This exemption does not apply to *construction activities* subject to the New York City Administrative Code.

B. Notice of Intent (NOI) Submittal

1. Prior to December 21, 2020, an owner or operator shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address:

   NOTICE OF INTENT
   NYS DEC, Bureau of Water Permits
   625 Broadway, 4th Floor
   Albany, New York 12233-3505

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

C. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits

must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

c. the final SWPPP has been prepared, and

d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

   a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:

      (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

      (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

      (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.C. of this permit.

D. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor's or subcontractor's certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*

use control MS4, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site-specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..

5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the

regulated, traditional land use control MS4 in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice.

E. Permit Coverage for Discharges Authorized Under GP-0-15-002

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-15-002), an *owner or operator* of *a construction activity* with coverage under GP-0-15-002, as of the effective date of GP- 0-20-001, shall be authorized to *discharge* in accordance with GP- 0-20-001, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-20-001.

F. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. For *construction activities* subject to the requirements of a *regulated, traditional land use control MS4,* the original *owner or operator* must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.

2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*

operator was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP, including construction drawings:

    a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;

c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority; and

d. to document the final construction conditions.

5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor*. The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with

the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharges* from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

    a. Background information about the scope of the project, including the location, type and size of project

b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection

schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the *construction site*; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

c. A Stormwater Modeling and Analysis Report that includes:
   (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

   (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

   (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

   (iv) Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

   (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

   (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

C. Required SWPPP Components by Project Type

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall

begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- New York State Erosion and Sediment Control Certificate Program holder
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located

in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

   a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

   b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.D.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

   c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.B.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site*, and all points of *discharge* from the *construction site*.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

d. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This shall include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.D.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.

d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

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 mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; 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.

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.B.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water

Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

    a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,

superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall

include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the owner's or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

APPENDIX A – Acronyms and Definitions

Acronyms

APO – Agency Preservation Officer
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
Cpv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DOW – Division of Water
EAF – Environmental Assessment Form
ECL - Environmental Conservation Law
EPA – U. S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review
SEQRA - State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

Definitions

All definitions in this section are solely for the purposes of this permit.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property –means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both "sewage" and "stormwater".

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "*Construction Activity(ies)*" also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Construction Site – means the land area where *construction activity(ies)* will occur. See definition for "*Commence (Commencement of) Construction Activities*" and "*Larger Common Plan of Development or Sale" also.*

Dewatering – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a *construction site* by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system

and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or *point source*.

Embankment –means an earthen or rock slope that supports a road/highway.

Endangered or Threatened Species – see 6 NYCRR Part 182 of the Department's rules and regulations for definition of terms and requirements.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term "plan" in "larger common plan of development or sale" is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State;
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a *combined sewer*; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

Natural Buffer –means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Nonpoint Source - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Point Source - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's

SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

Steep Slope – means land area designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Streambank – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and *nonpoint sources*. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for *point source* discharges, load allocations (LAs) for *nonpoint sources*, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed

training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

APPENDIX B – Required SWPPP Components by Project Type

Table 1
Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover
- Cross-country ski trails and walking/hiking trails
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

Table 1 (Continued) Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete

Table 2

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family home that disturbs five (5) or more acres of land
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1

Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed -Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

Figure 1 - New York City Watershed East of the Hudson

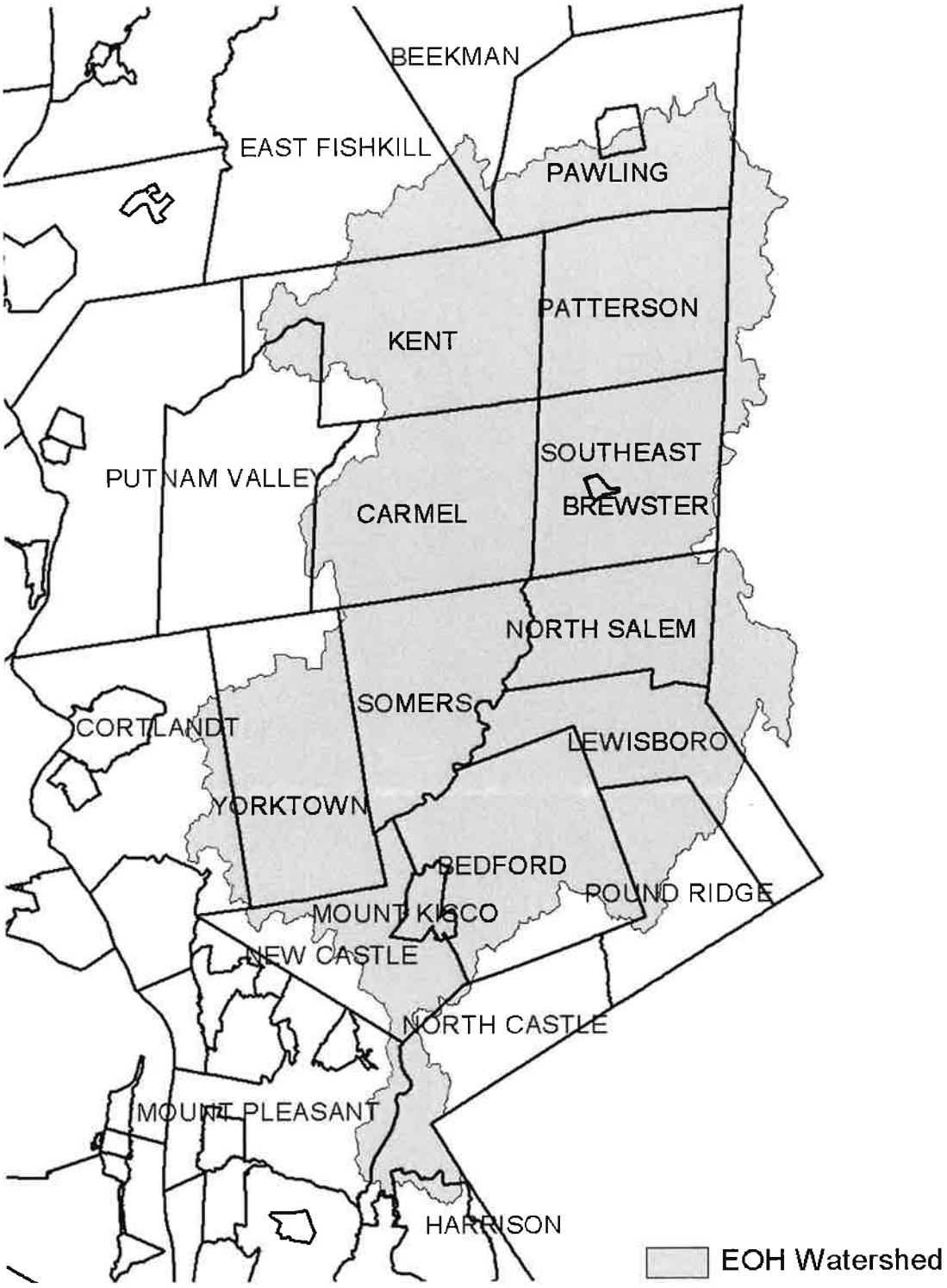


Figure 2 - Onondaga Lake Watershed

Figure 3 - Greenwood Lake Watershed

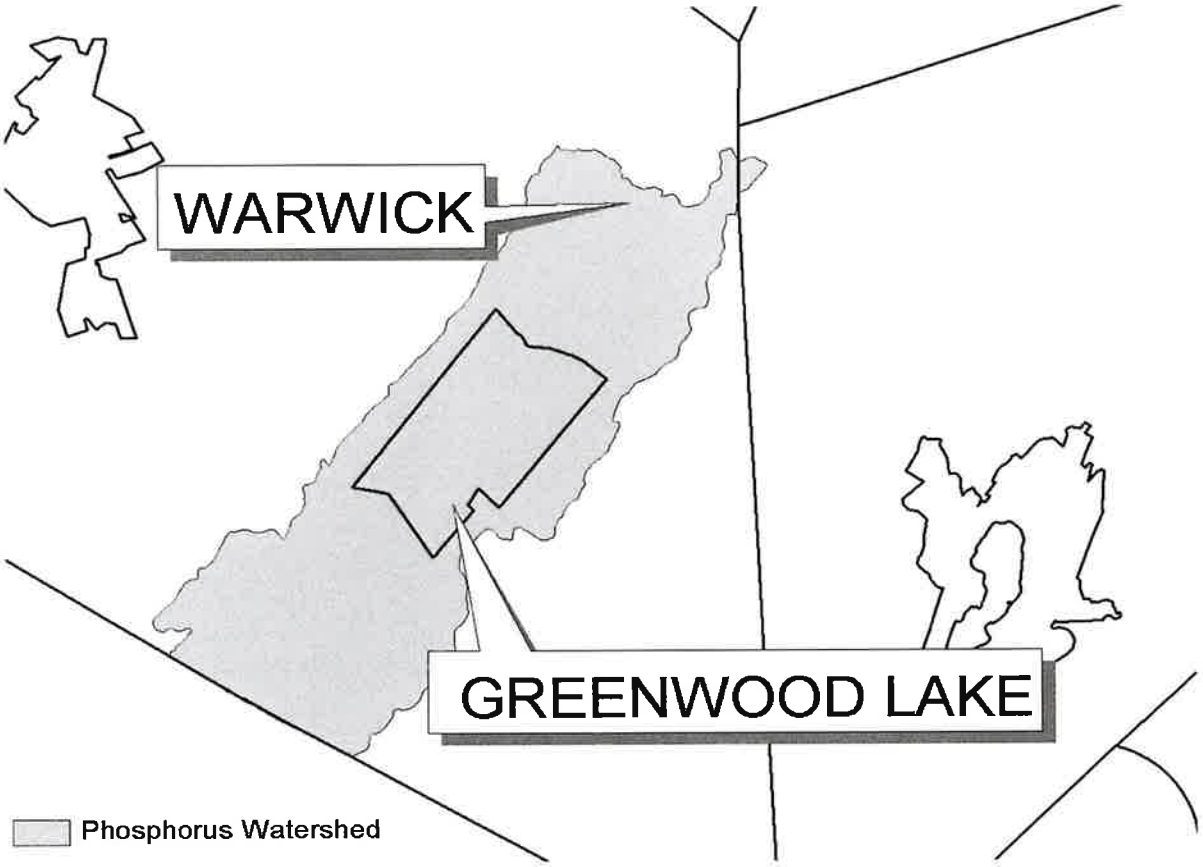


Figure 4 - Oscawana Lake Watershed

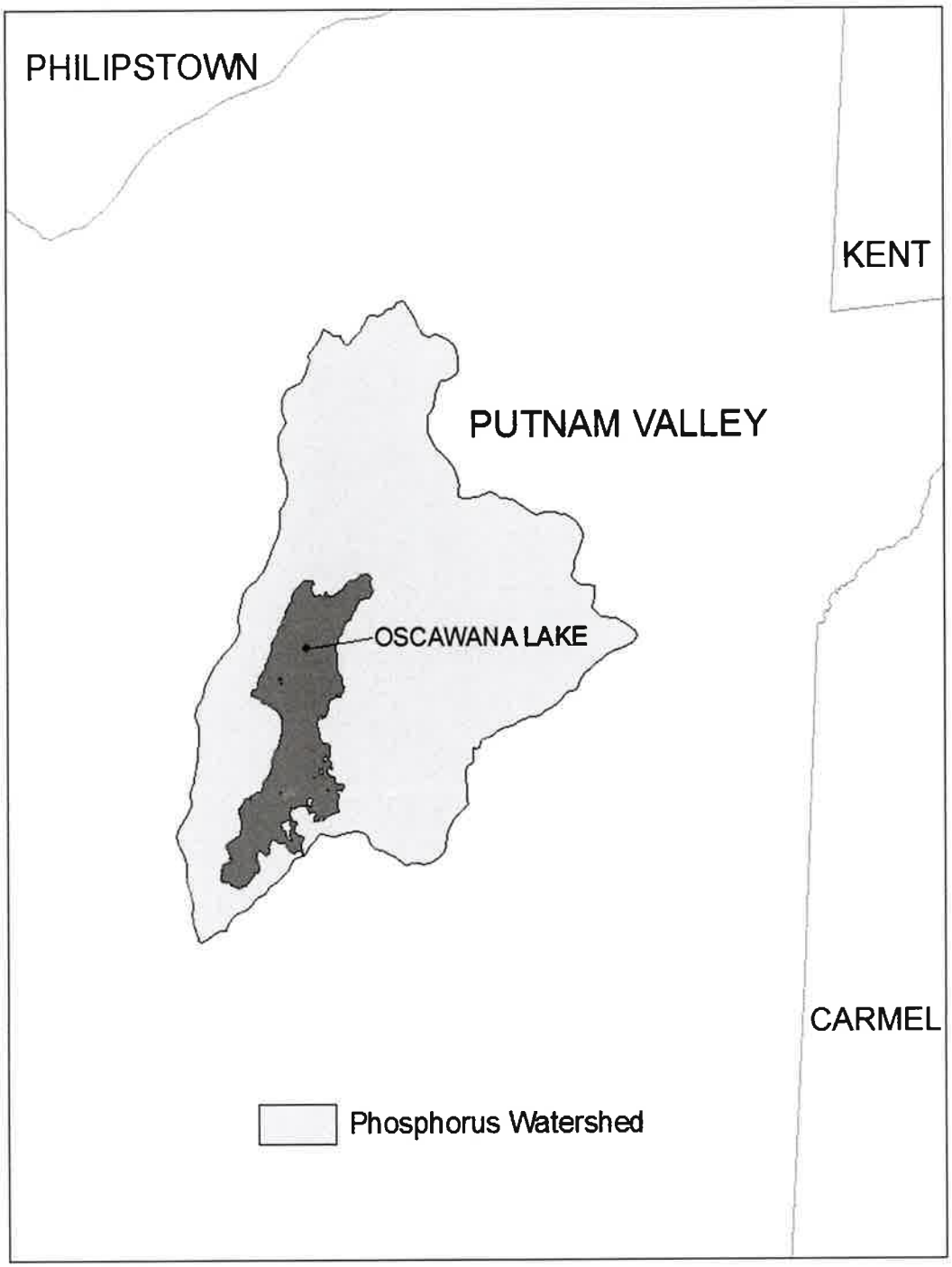
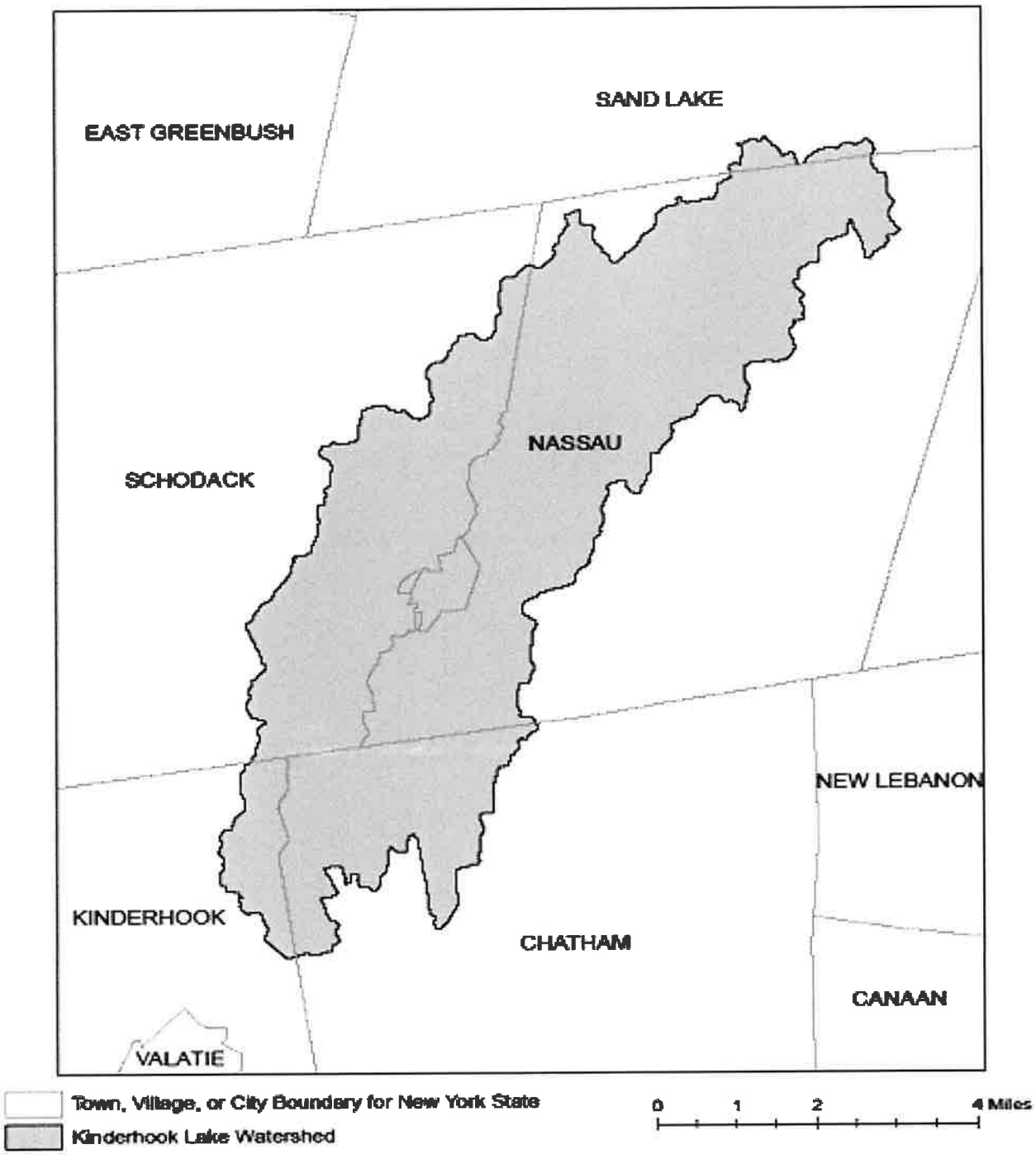


Figure 5 - Kinderhook Lake Watershed



APPENDIX D – Watersheds with Lower Disturbance Threshold

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C

APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using "The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy" dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY	POLLUTANT
Albany	Ann Lee (Shakers) Pond, Stump Pond	Nutrients
Albany	Basic Creek Reservoir	Nutrients
Allegany	Amity Lake, Saunders Pond	Nutrients
Bronx	Long Island Sound, Bronx	Nutrients
Bronx	Van Cortlandt Lake	Nutrients
Broome	Fly Pond, Deer Lake, Sky Lake	Nutrients
Broome	Minor Tribs to Lower Susquehanna (north)	Nutrients
Broome	Whitney Point Lake/Reservoir	Nutrients
Cattaraugus	Allegheny River/Reservoir	Nutrients
Cattaraugus	Beaver (Alma) Lake	Nutrients
Cattaraugus	Case Lake	Nutrients
Cattaraugus	Linlyco/Club Pond	Nutrients
Cayuga	Duck Lake	Nutrients
Cayuga	Little Sodus Bay	Nutrients
Chautauqua	Bear Lake	Nutrients
Chautauqua	Chadakoin River and tribs	Nutrients
Chautauqua	Chautauqua Lake, North	Nutrients
Chautauqua	Chautauqua Lake, South	Nutrients
Chautauqua	Findley Lake	Nutrients
Chautauqua	Hulburt/Clymer Pond	Nutrients
Clinton	Great Chazy River, Lower, Main Stem	Silt/Sediment
Clinton	Lake Champlain, Main Lake, Middle	Nutrients
Clinton	Lake Champlain, Main Lake, North	Nutrients
Columbia	Kinderhook Lake	Nutrients
Columbia	Robinson Pond	Nutrients
Cortland	Dean Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Dutchess	Fall Kill and tribs	Nutrients
Dutchess	Hillside Lake	Nutrients
Dutchess	Wappingers Lake	Nutrients
Dutchess	Wappingers Lake	Silt/Sediment
Erie	Beeman Creek and tribs	Nutrients
Erie	Ellicott Creek, Lower, and tribs	Silt/Sediment
Erie	Ellicott Creek, Lower, and tribs	Nutrients
Erie	Green Lake	Nutrients
Erie	Little Sister Creek, Lower, and tribs	Nutrients
Erie	Murder Creek, Lower, and tribs	Nutrients
Erie	Rush Creek and tribs	Nutrients
Erie	Scajaquada Creek, Lower, and tribs	Nutrients
Erie	Scajaquada Creek, Middle, and tribs	Nutrients
Erie	Scajaquada Creek, Upper, and tribs	Nutrients
Erie	South Branch Smoke Cr, Lower, and tribs	Silt/Sediment
Erie	South Branch Smoke Cr, Lower, and tribs	Nutrients
Essex	Lake Champlain, Main Lake, South	Nutrients
Essex	Lake Champlain, South Lake	Nutrients
Essex	Willsboro Bay	Nutrients
Genesee	Bigelow Creek and tribs	Nutrients
Genesee	Black Creek, Middle, and minor tribs	Nutrients
Genesee	Black Creek, Upper, and minor tribs	Nutrients
Genesee	Bowen Brook and tribs	Nutrients
Genesee	LeRoy Reservoir	Nutrients
Genesee	Oak Orchard Cr, Upper, and tribs	Nutrients
Genesee	Tonawanda Creek, Middle, Main Stem	Nutrients
Greene	Schoharie Reservoir	Silt/Sediment
Greene	Sleepy Hollow Lake	Silt/Sediment
Herkimer	Steele Creek tribs	Silt/Sediment
Herkimer	Steele Creek tribs	Nutrients
Jefferson	Moon Lake	Nutrients
Kings	Hendrix Creek	Nutrients
Kings	Prospect Park Lake	Nutrients
Lewis	Mill Creek/South Branch, and tribs	Nutrients
Livingston	Christie Creek and tribs	Nutrients
Livingston	Conesus Lake	Nutrients
Livingston	Mill Creek and minor tribs	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs	Nutrients
Monroe	Buck Pond	Nutrients
Monroe	Cranberry Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Monroe	Lake Ontario Shoreline, Western	Nutrients
Monroe	Long Pond	Nutrients
Monroe	Mill Creek and tribs	Nutrients
Monroe	Mill Creek/Blue Pond Outlet and tribs	Nutrients
Monroe	Minor Tribs to Irondequoit Bay	Nutrients
Monroe	Rochester Embayment - East	Nutrients
Monroe	Rochester Embayment - West	Nutrients
Monroe	Shipbuilders Creek and tribs	Nutrients
Monroe	Thomas Creek/White Brook and tribs	Nutrients
Nassau	Beaver Lake	Nutrients
Nassau	Camaans Pond	Nutrients
Nassau	East Meadow Brook, Upper, and tribs	Silt/Sediment
Nassau	East Rockaway Channel	Nutrients
Nassau	Grant Park Pond	Nutrients
Nassau	Hempstead Bay	Nutrients
Nassau	Hempstead Lake	Nutrients
Nassau	Hewlett Bay	Nutrients
Nassau	Hog Island Channel	Nutrients
Nassau	Long Island Sound, Nassau County Waters	Nutrients
Nassau	Massapequa Creek and tribs	Nutrients
Nassau	Milburn/Parsonage Creeks, Upp, and tribs	Nutrients
Nassau	Reynolds Channel, west	Nutrients
Nassau	Tidal Tribs to Hempstead Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Silt/Sediment
Nassau	Tribs to Smith/Halls Ponds	Nutrients
Nassau	Woodmere Channel	Nutrients
New York	Harlem Meer	Nutrients
New York	The Lake in Central Park	Nutrients
Niagara	Bergholtz Creek and tribs	Nutrients
Niagara	Hyde Park Lake	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Oneida	Ballou, Nail Creeks and tribs	Nutrients
Onondaga	Harbor Brook, Lower, and tribs	Nutrients
Onondaga	Ley Creek and tribs	Nutrients
Onondaga	Minor Tribs to Onondaga Lake	Nutrients
Onondaga	Ninemile Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Middle, and tribs	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Onondaga	Onondaga Lake, northern end	Nutrients
Onondaga	Onondaga Lake, southern end	Nutrients
Ontario	Great Brook and minor tribs	Silt/Sediment
Ontario	Great Brook and minor tribs	Nutrients
Ontario	Hemlock Lake Outlet and minor tribs	Nutrients
Ontario	Honeoye Lake	Nutrients
Orange	Greenwood Lake	Nutrients
Orange	Monhagen Brook and tribs	Nutrients
Orange	Orange Lake	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Oswego	Lake Neatahwanta	Nutrients
Oswego	Pleasant Lake	Nutrients
Putnam	Bog Brook Reservoir	Nutrients
Putnam	Boyd Corners Reservoir	Nutrients
Putnam	Croton Falls Reservoir	Nutrients
Putnam	Diverting Reservoir	Nutrients
Putnam	East Branch Reservoir	Nutrients
Putnam	Lake Carmel	Nutrients
Putnam	Middle Branch Reservoir	Nutrients
Putnam	Oscawana Lake	Nutrients
Putnam	Palmer Lake	Nutrients
Putnam	West Branch Reservoir	Nutrients
Queens	Bergen Basin	Nutrients
Queens	Flushing Creek/Bay	Nutrients
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Nutrients
Queens	Kissena Lake	Nutrients
Queens	Meadow Lake	Nutrients
Queens	Willow Lake	Nutrients
Rensselaer	Nassau Lake	Nutrients
Rensselaer	Snyders Lake	Nutrients
Richmond	Grasmere Lake/Bradys Pond	Nutrients
Rockland	Congers Lake, Swartout Lake	Nutrients
Rockland	Rockland Lake	Nutrients
Saratoga	Ballston Lake	Nutrients
Saratoga	Dwaas Kill and tribs	Silt/Sediment
Saratoga	Dwaas Kill and tribs	Nutrients
Saratoga	Lake Lonely	Nutrients
Saratoga	Round Lake	Nutrients
Saratoga	Tribs to Lake Lonely	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Schenectady	Collins Lake	Nutrients
Schenectady	Duane Lake	Nutrients
Schenectady	Mariaville Lake	Nutrients
Schoharie	Engleville Pond	Nutrients
Schoharie	Summit Lake	Nutrients
Seneca	Reeder Creek and tribs	Nutrients
St.Lawrence	Black Lake Outlet/Black Lake	Nutrients
St.Lawrence	Fish Creek and minor tribs	Nutrients
Steuben	Smith Pond	Nutrients
Suffolk	Agawam Lake	Nutrients
Suffolk	Big/Little Fresh Ponds	Nutrients
Suffolk	Canaan Lake	Silt/Sediment
Suffolk	Canaan Lake	Nutrients
Suffolk	Flanders Bay, West/Lower Sawmill Creek	Nutrients
Suffolk	Fresh Pond	Nutrients
Suffolk	Great South Bay, East	Nutrients
Suffolk	Great South Bay, Middle	Nutrients
Suffolk	Great South Bay, West	Nutrients
Suffolk	Lake Ronkonkoma	Nutrients
Suffolk	Long Island Sound, Suffolk County, West	Nutrients
Suffolk	Mattituck (Marratooka) Pond	Nutrients
Suffolk	Meetinghouse/Terrys Creeks and tribs	Nutrients
Suffolk	Mill and Seven Ponds	Nutrients
Suffolk	Millers Pond	Nutrients
Suffolk	Moriches Bay, East	Nutrients
Suffolk	Moriches Bay, West	Nutrients
Suffolk	Peconic River, Lower, and tidal tribs	Nutrients
Suffolk	Quantuck Bay	Nutrients
Suffolk	Shinnecock Bay and Inlet	Nutrients
Suffolk	Tidal tribs to West Moriches Bay	Nutrients
Sullivan	Bodine, Montgomery Lakes	Nutrients
Sullivan	Davies Lake	Nutrients
Sullivan	Evens Lake	Nutrients
Sullivan	Pleasure Lake	Nutrients
Tompkins	Cayuga Lake, Southern End	Nutrients
Tompkins	Cayuga Lake, Southern End	Silt/Sediment
Tompkins	Owasco Inlet, Upper, and tribs	Nutrients
Ulster	Ashokan Reservoir	Silt/Sediment
Ulster	Esopus Creek, Upper, and minor tribs	Silt/Sediment
Warren	Hague Brook and tribs	Silt/Sediment

303(d) Segments Impaired by Construction Related Pollutant(s)

Warren	Huddle/Finkle Brooks and tribs	Silt/Sediment
Warren	Indian Brook and tribs	Silt/Sediment
Warren	Lake George	Silt/Sediment
Warren	Tribs to L.George, Village of L George	Silt/Sediment
Washington	Cossayuna Lake	Nutrients
Washington	Lake Champlain, South Bay	Nutrients
Washington	Tribs to L.George, East Shore	Silt/Sediment
Washington	Wood Cr/Champlain Canal and minor tribs	Nutrients
Wayne	Port Bay	Nutrients
Westchester	Amawalk Reservoir	Nutrients
Westchester	Blind Brook, Upper, and tribs	Silt/Sediment
Westchester	Cross River Reservoir	Nutrients
Westchester	Lake Katonah	Nutrients
Westchester	Lake Lincolndale	Nutrients
Westchester	Lake Meahagh	Nutrients
Westchester	Lake Mohegan	Nutrients
Westchester	Lake Shenorock	Nutrients
Westchester	Long Island Sound, Westchester (East)	Nutrients
Westchester	Mamaroneck River, Lower	Silt/Sediment
Westchester	Mamaroneck River, Upper, and minor tribs	Silt/Sediment
Westchester	Muscoot/Upper New Croton Reservoir	Nutrients
Westchester	New Croton Reservoir	Nutrients
Westchester	Peach Lake	Nutrients
Westchester	Reservoir No.1 (Lake Isle)	Nutrients
Westchester	Saw Mill River, Lower, and tribs	Nutrients
Westchester	Saw Mill River, Middle, and tribs	Nutrients
Westchester	Sheldrake River and tribs	Silt/Sediment
Westchester	Sheldrake River and tribs	Nutrients
Westchester	Silver Lake	Nutrients
Westchester	Teatown Lake	Nutrients
Westchester	Titicus Reservoir	Nutrients
Westchester	Truesdale Lake	Nutrients
Westchester	Wallace Pond	Nutrients
Wyoming	Java Lake	Nutrients
Wyoming	Silver Lake	Nutrients

APPENDIX F – List of NYS DEC Regional Offices

Region	Covering the following counties:	Division of Environmental Permits (DEP) Permit Administrators	Division of Water (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	100 Hillside Avenue, Suite 1w White Plains, NY 10603 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1150 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7070

APPENDIX C
CERTIFICATION STATEMENTS

STORMWATER POLLUTION PREVENTION PLAN

Stormwater Pollution Prevention Plan
Contractors Certification Statement

I, the undersigned, hereby certify that I have read and understand this Stormwater Pollution Prevention Plan (SWPPP) and have reviewed the related drawings and specifications prepared by Metzger Civil Engineering, PLLC.

I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection.

I also understand that the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards.

Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal. Civil and/or administrative proceedings.

_____
Name of Contracting Firm

_____
Address

_____
Phone Number

_____
Name of Trained individual
Responsible for SWPPP implementation

_____
Signature of Contracting Firm officer

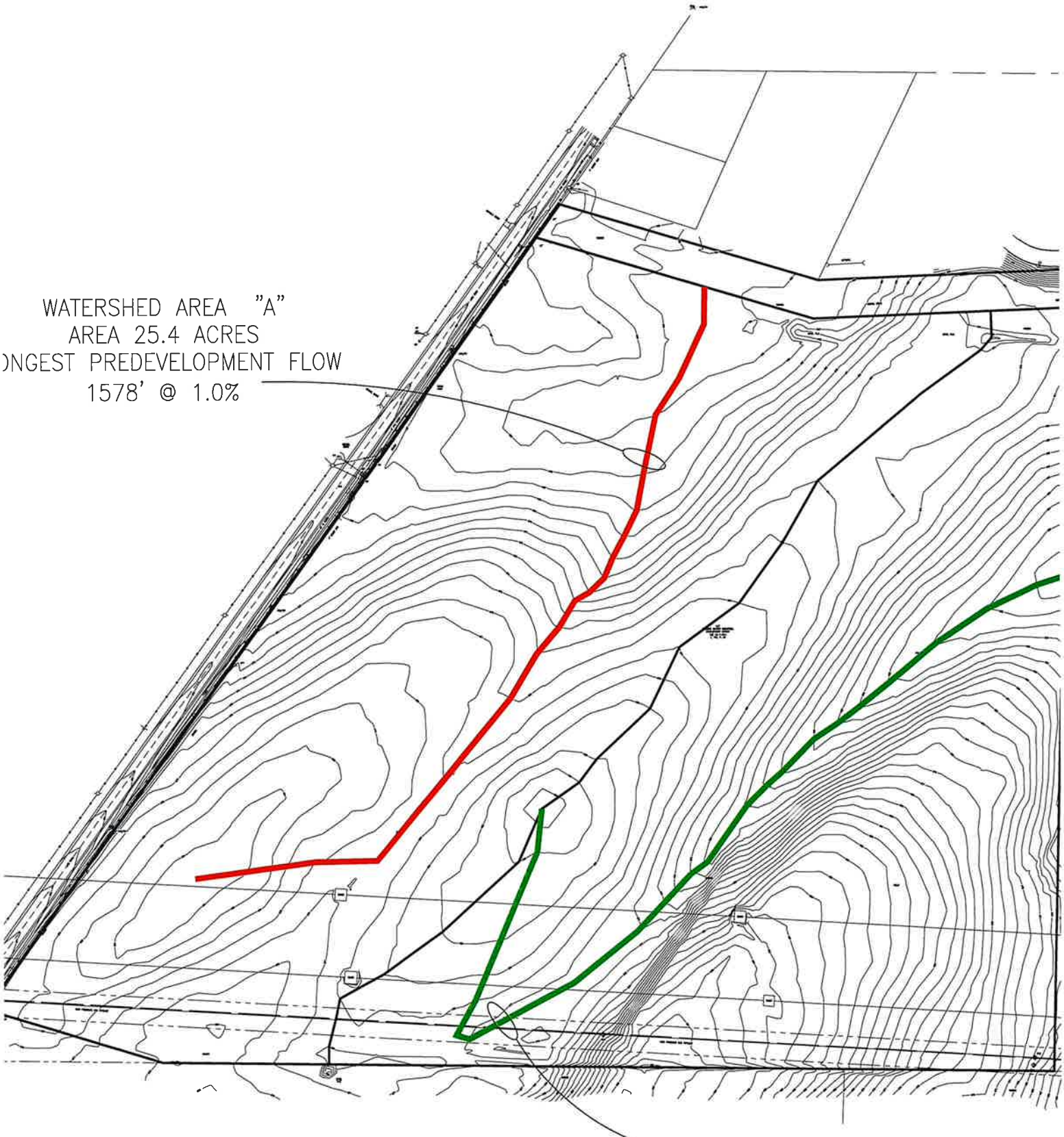
_____
Printed Name of Contacting Firm officer

_____
Date

APPENDIX D-1

Watershed A
Stormwater Calculations - Pre development
USDA TR-55 Method

PREDEVELOPMENT FLOW
MAP



WinTR-55 Current Data Description

--- Identification Data ---

User: ARH
Project:
SubTitle: Pre Dev 'A'
State: New York
County: Erie
Filename: C:\Users\mcewn\OneDrive\MCE\M2405 OXBO\DWG\PRE DEV A.w55

Date: 5/8/2024
Units: English
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
Area A Pre		Outlet	25.4	75	.632

Total area: 25.40 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
2.2	2.69	3.25	3.84	4.48	6.0	1.8

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type II
Dimensionless Unit Hydrograph: <standard>

ARH

Pre Dev 'A'
Erie County, New York

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
2.2	2.69	3.25	3.84	4.48	6.0	1.8

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type II
Dimensionless Unit Hydrograph: <standard>

ARH

Pre Dev 'A'
Erie County, New York

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 10-Yr (cfs)	25-Yr (cfs)	100-Yr (cfs)	1-Yr (cfs)
SUBAREAS				
Area A Pre	20.61	29.05	63.50	3.88
REACHES				
OUTLET	20.61	29.05	63.50	3.88

ARH

Pre Dev 'A'
Erie County, New York

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period 10-Yr (cfs) (hr)	25-Yr (cfs) (hr)	100-Yr (cfs) (hr)	1-Yr (cfs) (hr)
SUBAREAS				
Area A Pre	20.61 12.28	29.05 12.28	63.50 12.26	3.88 12.36
REACHES				
OUTLET	20.61	29.05	63.50	3.88

ARH

Pre Dev 'A'
Erie County, New York

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
Area A Pre	25.40	0.632	75	Outlet	

Total Area: 25.40 (ac)

ARH

Pre Dev 'A'
Erie County, New York

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
Area A Pre							
SHEET	100	0.0100	0.240				0.378
SHALLOW	1478	0.0100	0.050				0.254
						Time of Concentration	.632

ARH

Pre Dev 'A'
Erie County, New York

Sub-Area Land Use and Curve Number Details

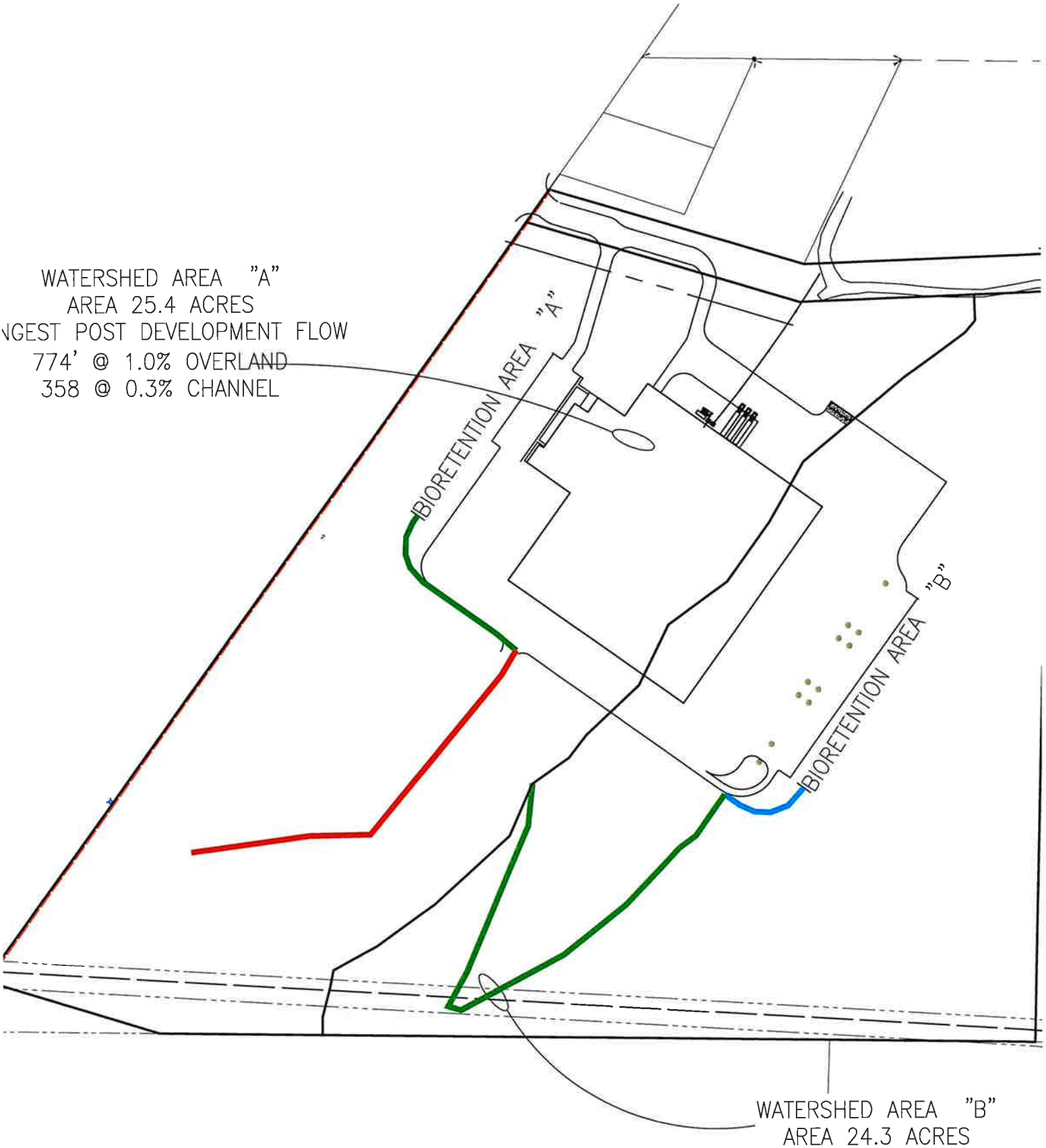
Sub-Area Identifier	Land Use		Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
Area A Pre	Brush - brush, weed, grass mix	(fair)	A	.5	35
	Brush - brush, weed, grass mix	(fair)	B	1.3	56
	Brush - brush, weed, grass mix	(fair)	D	23.6	77
	Total Area / Weighted Curve Number			25.4	75

APPENDIX D-2

Watershed A

Stormwater Calculations - Post Development
USDA TR-55 Method

POST DEVELOPMENT FLOW
MAP



WinTR-55 Current Data Description

--- Identification Data ---

User: ARH
Project:
SubTitle: Post Dev A
State: New York
County: Genesee
Filename: C:\Users\mcewn\OneDrive\MCE\M2405 OXBO\DOCS\POST DEV A.w55

Date: 5/8/2024
Units: English
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
Area A Pos		Outlet	25.4	81	.607

Total area: 25.40 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
2.2	2.69	3.25	3.84	4.48	6.0	1.8

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type II
Dimensionless Unit Hydrograph: <standard>

ARH

Post Dev A
Genesee County, New York

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
2.2	2.69	3.25	3.84	4.48	6.0	1.8

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type II
Dimensionless Unit Hydrograph: <standard>

ARH

Post Dev A
Genesee County, New York

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 10-Yr (cfs)	25-Yr (cfs)	100-Yr (cfs)	1-Yr (cfs)
SUBAREAS				
Area A Pos	29.60	39.36	77.17	8.43
REACHES				
OUTLET	29.60	39.36	77.17	8.43

ARH

Post Dev A
Genesee County, New York

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period 10-Yr (cfs)	(hr)	25-Yr (cfs)	(hr)	100-Yr (cfs)	(hr)	1-Yr (cfs)	(hr)
SUBAREAS								
Area A Pos	29.60	12.25	39.36	12.24	77.17	12.22	8.43	12.29
REACHES								
OUTLET	29.60		39.36		77.17		8.43	

ARH

Post Dev A
Genesee County, New York

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
Area A Pos	25.40	0.607	81	Outlet	

Total Area: 25.40 (ac)

ARH

Post Dev A
Genesee County, New York

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
Area A Pos							
SHEET	100	0.0100	0.240				0.378
SHALLOW	674	0.0100	0.050				0.116
SHALLOW	358	0.0030	0.050				0.113
						Time of Concentration	.607

ARH

Post Dev A
Genesee County, New York

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use		Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
Area A Pos	Paved parking lots, roofs, driveways		A	.2	98
	Paved parking lots, roofs, driveways		B	.3	98
	Paved parking lots, roofs, driveways		D	6.2	98
	Brush - brush, weed, grass mix	(fair)	A	.4	35
	Brush - brush, weed, grass mix	(fair)	B	.9	56
	Brush - brush, weed, grass mix	(fair)	D	17.4	77
	Total Area / Weighted Curve Number			25.4	81

APPENDIX D - 3

Watershed A

Dry Detention Area Calculations

STORMWATER POLLUTION PREVENTION PLAN

METZGER
CIVIL
ENGINEERING, PLLC

8245 Sheridan Drive
Williamsville, New York 14221
Phone: 716-633-2601

Project:	OXBO	By: ARH
Location:	Bergen, NY	05.09.24

Outlet Control Structure Design - Pond A

	Elev (ft)	Pre Development Discharge Rate (cfs) (from TR-55)	Post Development Discharge Rate (cfs) (from TR-55)	Actual Discharge from Orifice (cfs)
Cl of outlet pipe	667.00			
Normal Water Level	667.00			
1 year storm event	667.72	3.88	8.43	2.85
10 year storm event	668.72	20.61	29.60	4.40
25 year storm event	669.15	29.05	39.36	4.92
100 year storm event	670.42	63.50	77.17	6.21

Oriface Diameter	0.33	ft	(3" is minimum allowed)
Area of Pipe (A)	0.085	sq ft	
Orifice coefficient (C)	0.61		
Head difference (h)		ft	
Acceleration (g)	32.2	ft/sec2	

Torricelli Equation - Orifice Calculations

$Q=CA(2gh)^{.5}$

METZGER
CIVIL
ENGINEERING, PLLC

8245 Sheridan Drive
Williamsville, New York 14221
Phone: 716-633-2601, Fax: 716-633-2704

Project:	OXBO - Pond A	By:	ARH	Date:	5/9/2024
Location:	Bergen	Checked:	JCM	Date:	
County:	Genesee				

TR-55 Pre-Development Summary

STORM 1-Yr

Area or Reach Identifier	Drainage Area (acres)	% of site	Runoff Amount, Qd (in)	Peak Flow Rate (cfs)
Entire Site	25.40	100		3.88
This Pond	25.4	100.0	0.3	2.85

Flow from entire site
Flow from this pond to overdetain for the discharge the capacity of the 4" oriface

STORM 10-Yr

Area or Reach Identifier	Drainage Area (acres)	% of site	Runoff Amount, Qd (in)	Peak Flow Rate (cfs)
Entire Site	25.40	100		20.61
This Pond	25.4	100.0	1.1	4.40

Flow from entire site
Flow from this pond to overdetain for the discharge the capacity of the 4" oriface

STORM 100-Yr

Area or Reach Identifier	Drainage Area (acres)	% of site	Runoff Amount, Qd (in)	Peak Flow Rate (cfs)
Entire Site	25.40	100		63.50
This Pond	25.4	100.0	3.3	6.21

Flow from entire site
Flow from this pond to overdetain for the discharge the capacity of the 4" oriface

Storm Event	Rainfall P, inches	Initial Abstraction Ia = 0.2S, inches	Potential Retention S=(1000/CN)-10 inches	CN	Runoff Amount, Inches $Qd = \frac{(P-Ia)^2}{((P-Ia)+S)}$
1-yr	1.87	0.67	3.33	75	0.32
10-yr	3.25	0.67	3.33	75	1.13
100-yr	6.00	0.67	3.33	75	3.28

Rainfall Distribution = TYPE II
Time of Concentration, $Tc_{(Hours)}$ = 0.63

METZGER
CIVIL
ENGINEERING, PLLC

8245 Sheridan Drive
Williamsville, New York 14221
Phone: 716-633-2601, Fax: 716-633-2704

Project:	OXBO - Pond A	By:	ARH	Date:	5/9/2024
Location:	Bergen	Checked:	JCM	Date:	

TR-55 Post Development Summary

STORM 1-Yr

Area or Reach Identifier	Drainage Area (acres)	% of site	Runoff Amount, Qd (in)	Peak Flow Rate (cfs)
Entire Site	25.40	100		8.43
This pond	25.40	100.0	0.5	8.43

STORM 10-Yr

Area or Reach Identifier	Drainage Area (acres)	% of site	Runoff Amount, Qd (in)	Peak Flow Rate (cfs)
Entire Site	25.40	100		29.60
This pond	25.4	100.0	1.5	29.60

STORM 100-Yr

Area or Reach Identifier	Drainage Area (acres)	% of site	Runoff Amount, Qd (in)	Peak Flow Rate (cfs)
Entire Site	25.40	100		77.17
This pond	25.4	100.0	3.9	77.17

Storm Event	Rainfall P, inches	Initial Abstraction Ia = 0.2S, inches	Potential Retention S=(1000/CN)-10 inches	CN	Runoff Amount, Inches Qd = (P-Ia)^2 / ((P-Ia)+S)
1-yr	1.87	0.47	2.35	81	0.52
10-yr	3.25	0.47	2.35	81	1.51
100-yr	6.00	0.47	2.35	81	3.88

Rainfall Distribution = TYPE II
Time of Concentration, Tc $_{(Hours)}$ = 0.61

METZGER
CIVIL
ENGINEERING, PLLC

8245 Sheridan Drive
Williamsville, New York 14221
Phone: 716-633-2601, Fax: 716-633-2704

Project:	OXBO - Pond A	By:	ARH	Date:	5/9/2024
Location:	Bergen	Checked:	JCM	Date:	

Storage Volume Estimation

Taken from NYS Stormwater Management Design Manual (NYS-SMDM) Appendix B

Area Final Phase = 25.4 Acres

	Channel Protection Cp_v 1 YR / 24-Hour Extended Detention	
Ia / P (From Post Development Summary Sheet, 1yr storm)	0.25	
Post Development Time of Concentration, Tc (From TR-55 Calcs)	0.61	hours
Unit Peak Discharge, qu (from TR-55 Exhibit 4-II, attached)	420	cfs/sqmi/inch
Ratio of Outflow to Inflow, qo/qi (NYS-SMDM Figure B.1, attached)	0.040	
Ratio of Storage Volume to Runoff Volume, vs/vr		
vs/vr = 0.682 - 1.43(qo/qi) + 1.64 (qo/qi)^2 - 0.804 (qo/qi)^3 =	0.63	
Pos-Dev Runoff Amount, Q_d (From Post Development Summary Sheet)	0.5	inches
Req'd Storage Volume$_{(acre\text{-}feet)}$, $vs = ((v_s/v_r)\ (Q_{d,\ inches})\ (A,\ acres)) / 12$ inches/foot	0.7	acre-feet
Req'd Storage Volume$_{(cubic\ feet)}$, $vs = vs_{(acre\text{-}feet)} \times 43560$ sq.ft./acre	30,299	cubic feet
Cp_v-ED Average release rate over 24 hours = $vs_{(cubic\ feet)} / 86400$ seconds/24 hrs	0.35	cfs

	Overbank Flood Q_p 10YR	Extreme Flood Q_f 100 YR	
Pre-Dev Peak Flow Q_O (From TR-55 Output)	4.40	6.21	cfs
Pos-Dev Peak Flow Q_I (From TR-55 Output)	29.60	77.17	cfs
Pos-Dev Runoff Amount, Q_d (From Post Development Summary Sheet)	1.51	3.88	inches
Ratio of Pre-Dev Peak Flow to Pos-Dev Peak Flow, Q_O/Q_I	0.15	0.08	
Ratio of Storage Volume to Runoff Volume, V_S/V_R (From TR-55 Fig 6-1, Type II, attached)	0.50	0.55	
Req'd Storage Volume$_{(acre\text{-}feet)}$, $Vs = [((V_s/V_r)\ (Q_{d,\ inches})\ (A,\ acres)) / 12$ in./ft.]	1.60	4.52	acre-feet
Req'd Storage Volume$_{(cubic\ feet)}$, $Vs = Vs_{(acre\text{-}feet)} \times 43560$ sq.ft./acre	69,542	196,949	cubic feet

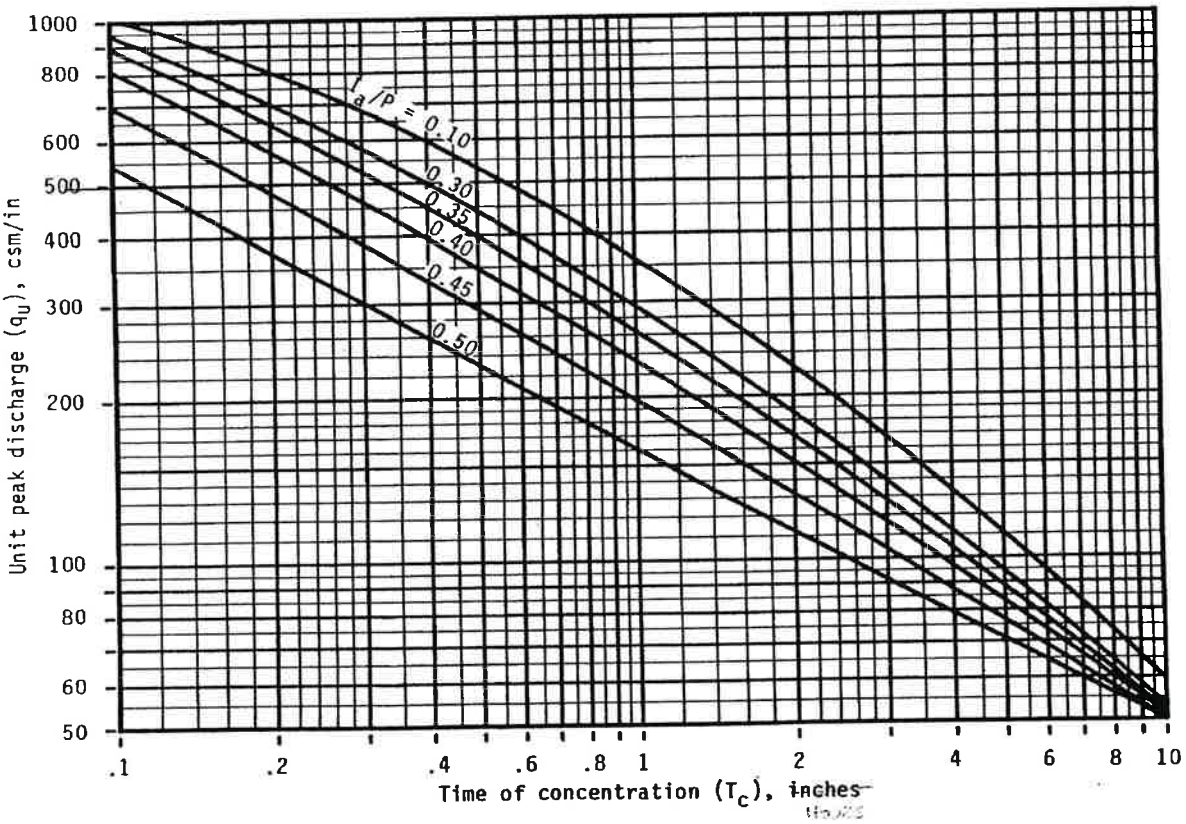
METZGER
CIVIL
ENGINEERING, PLLC
8245 Sheridan Drive
Williamsville, New York 14221
Phone: 716-633-2601, Fax: 716-633-2704

Project:	OXBO - Pond A	By:	ARH	Date:	5/9/2024
Location:	Bergen	Checked:	JCM	Date:	

Storage Volume Estimation - Continued

4-6

Exhibit 4-II: Unit peak discharge (q_u) for SCS type II rainfall distribution



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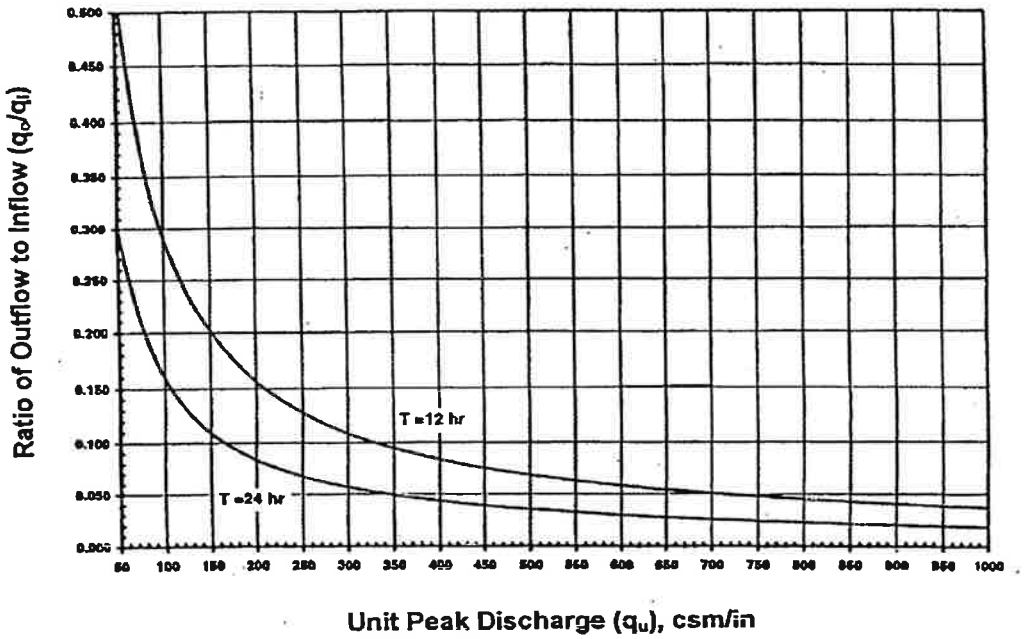
Project:	OXBO - Pond A	By:	ARH	Date:	5/9/2024
Location:	Bergen	Checked:	JCM	Date:	

Figure B.1 Detention Time vs. Discharge Ratios (Source: MDE, 2000)



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Project:	OXBO - Pond A	By:	ARH	Date:	5/9/2024
Location:	Bergen	Checked:	JCM	Date:	

Storage Volume Estimation - Continued

Input requirements and procedures

Use figure 6-1 to estimate storage volume (V_s) required or peak outflow discharge (q_o). The most frequent application is to estimate V_s, for which the required inputs are runoff volume (V_r), q_o, and peak inflow discharge (q_i). To estimate q_o, the required inputs are V_r, V_s, and q_i.

Estimating V_s

Use worksheet 6a to estimate V_s, storage volume required, by the following procedure.

1. Determine q_o. Many factors may dictate the selection of peak outflow discharge. The most common is to limit downstream discharges to a desired level, such as predevelopment discharge. Another factor may be that the outflow device has already been selected.
2. Estimate q_i by procedures in chapters 4 or 5. Do not use peak discharges developed by any other procedure. When using the Tabular Hydrograph method to estimate q_i for a subarea, only use

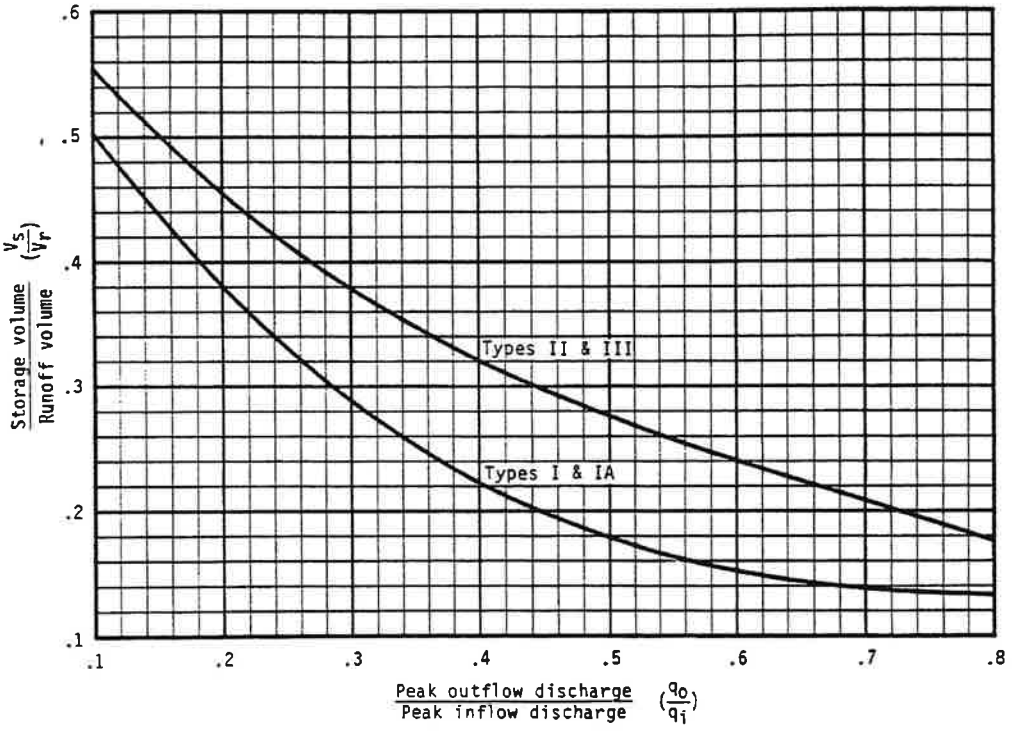

Figure 6-1.—Approximate detention basin routing for rainfall types I, IA, II, and III.

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Location:	Bergen	Checked:	JCM	Date:	

Water Quality and Pond Volumes

Water Quality Volume, WQv

From NYS Stormwater Management Design Manual (NYS-SMDM), Section 4

WQv = (P*Rv*A) / 12

P=90% Rainfall Event No. for WNY	1.00				
I = Impervious cover	26.0	Percent			
Rv = 0.05 + 0.009 * I	0.28				
A = Site area	25.40	acres			
Total WQv Required =			**0.60**	acre-feet =	**26,185** cf
Total Minimum Req'd Permanent Pool Volume, PPV = Total WQv x 50%			0.30	acre-feet =	13,093 cf
Req'd Forebay (Pretreatment) Volume = Total WQv x 10% =			0.060	acre-feet =	2,619 cf
Req'd Permanent Pool Volume in the "Wet Pool" = Total PPV - Req'd Forebay Volume =			0.240	acre-feet =	10,474 cf

Is "Wet Pool" Volume Provided = or > the Total WQv Required? No, Provide WQv-ED

Req'd WQv-ED Volume (i.e, volume above Normal Water Level) =Total WQv x 50% =	0.301	acre-feet =	13,093 cf
WQv-ED Average release rate over 24 hours = WQv-ED (cubic feet) / 86400 secs/24 hrs =	0.15	c.f.s.	

Pond Levels and Volumes

Pond A	HWE, ft	HWE Area, sf	LWE, ft	LW Area, sf	water depth, ft	Avg. Area, sf	Vol. Provided, cf	Vol. Req'd, cf	Vol.Prv acft	Difference
"bottom"	667.00	49,019	667.00	49,019		49,019				
Cp_v	667.72	52,675	667.00	49019	0.72	50,847	36,610	30,299	0.84	6,311
Q_p	668.72	57,753	667.00	49019	1.72	53,386	91,824	69,542		22,282
Q_f	670.42	66,385	667.00	49019	3.42	57,702	197,341	196,949		392

Set Pond TOB @ EL. 671
Area @ TOB 69330 sf

WQv Storm Event Peak Flow Calculation (WQv Qp)

For Sizing Proprietary Pretreatment Structures If Used In Lieu Of Pretreatment Forebay

From NYS Stormwater Management Design Manual (NYS-SMDM), Appendix B.2

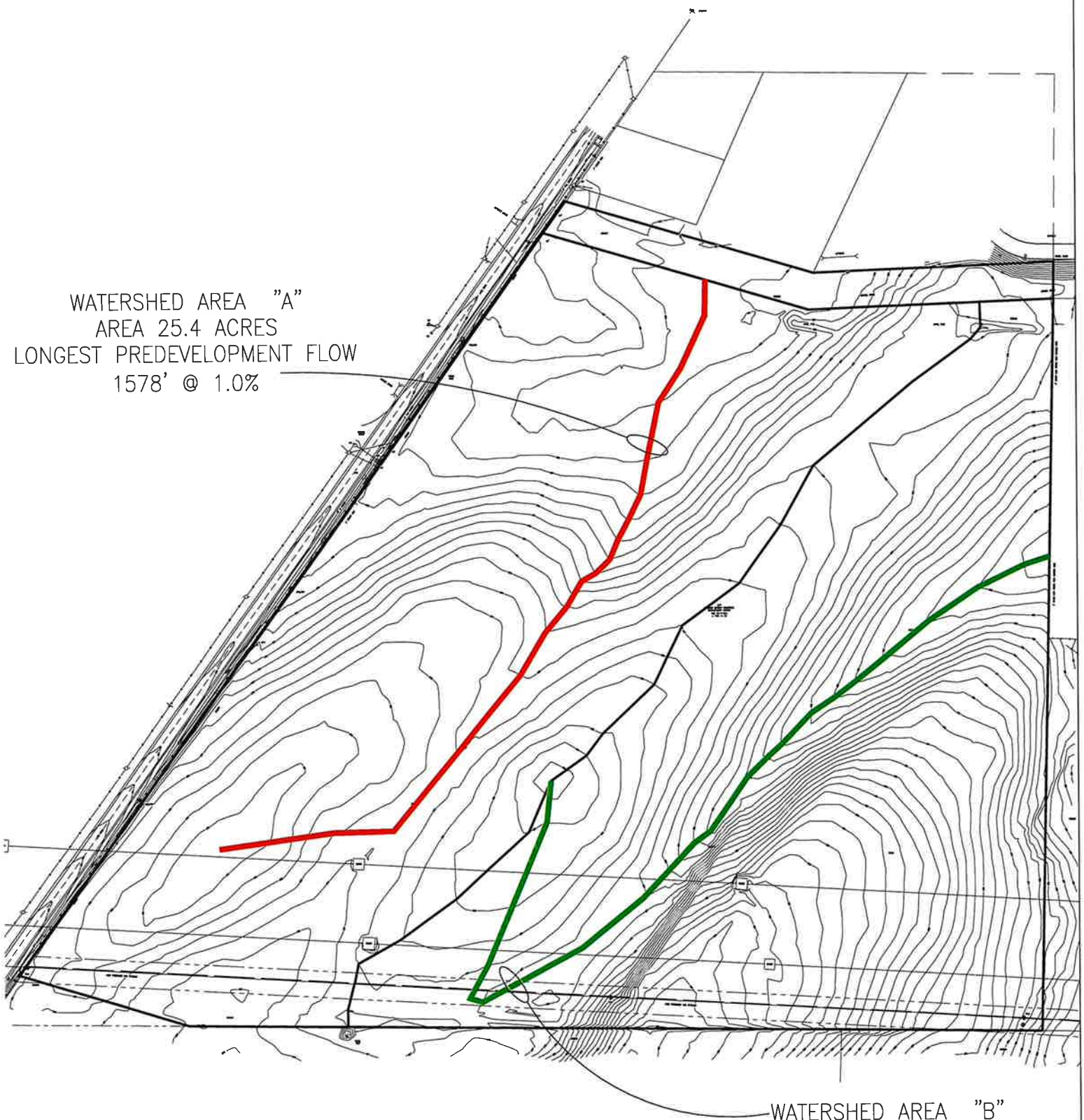
Post Development Time of Concentration, Tc (From TR-55 Calcs)	0.61	hr
Initial Abstraction, Ia (From Post Development Summary Sheet)	0.47	
Ia / P (Where P=90% Rainfall Event No. from WQv calcs above)	0.47	
Unit Peak Discharge, qu (from TR-55 Exhibit 4-II, attached)	700	cfs/sqmi/inch
WQv in watershed inches = [WQv (acre-feet) / Area (acres)] x 12 inches/foot	0.28	inches
A = area in square miles	0.0397	sq. miles
WQv Qp (cfs) = qu (cfs/sq.miles/inch) x A (sq.miles) x WQv (inches)		
Wqv Peak Discharge Qp =	7.9	cfs
Required pretreatment = 10% of total Wqv	0.79	cfs

APPENDIX D-4

Watershed B

Stormwater Calculations - Pre development
USDA TR-55 Method

PREDEVELOPMENT FLOW
MAP



WinTR-55 Current Data Description

--- Identification Data ---

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Project:
SubTitle: Pre Dev 'B'
State: New York
County: Genesee
Filename: C:\Users\mcewn\OneDrive\MCE\M2405 OXBO\DWG\PRE DEV B.w55

Date: 5/8/2024
Units: English
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
Area B Pre		Outlet	24.3	75	.654

Total area: 24.30 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
2.2	2.69	3.25	3.84	4.48	6.0	1.8

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type II
Dimensionless Unit Hydrograph: <standard>

ARH

Pre Dev 'B'
Genesee County, New York

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
2.2	2.69	3.25	3.84	4.48	6.0	1.8

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type II
Dimensionless Unit Hydrograph: <standard>

ARH

Pre Dev 'B'
Genesee County, New York

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 10-Yr (cfs)	25-Yr (cfs)	100-Yr (cfs)	1-Yr (cfs)
SUBAREAS				
Area B Pre	19.25	27.16	59.30	3.62
REACHES				
OUTLET	19.25	27.16	59.30	3.62

ARH

Pre Dev 'B'
Genesee County, New York

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period 10-Yr (cfs) (hr)	25-Yr (cfs) (hr)	100-Yr (cfs) (hr)	1-Yr (cfs) (hr)
SUBAREAS				
Area B Pre	19.25	27.16	59.30	3.62
	12.30	12.29	12.26	12.38
REACHES				
OUTLET	19.25	27.16	59.30	3.62

ARH

Pre Dev 'B'
Genesee County, New York

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
Area B Pre	24.30	0.654	75	Outlet	

Total Area: 24.30 (ac)

ARH

Pre Dev 'B'
Genesee County, New York

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
Area B Pre							
SHEET	100	0.0110	0.240				0.364
SHALLOW	1769	0.0110	0.050				0.290
						Time of Concentration	.654

ARH

Pre Dev 'B'
Genesee County, New York

Sub-Area Land Use and Curve Number Details

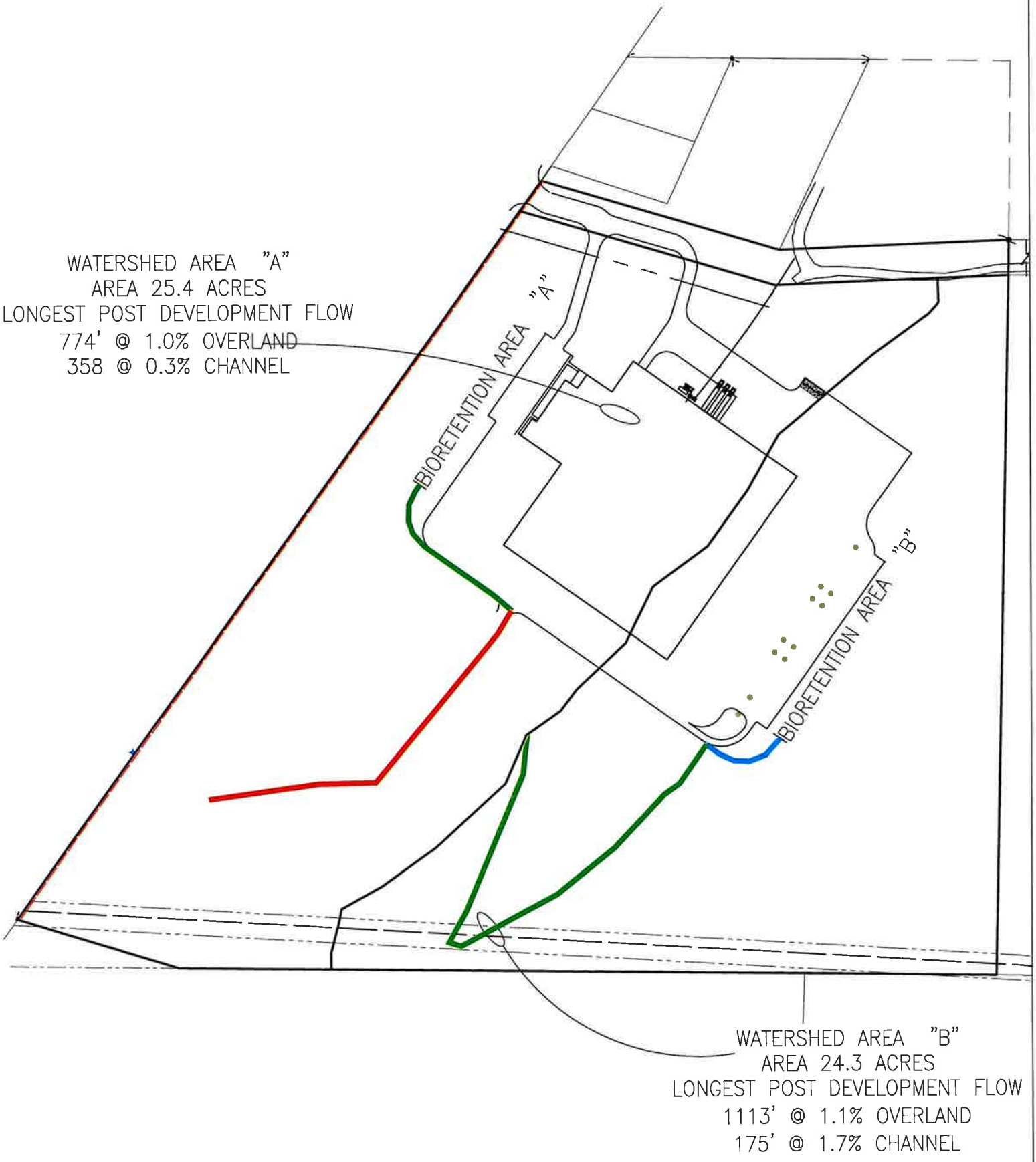
Sub-Area Identifier	Land Use		Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
Area B Pre	Brush - brush, weed, grass mix	(fair)	A	.5	35
	Brush - brush, weed, grass mix	(fair)	B	1.2	56
	Brush - brush, weed, grass mix	(fair)	D	22.6	77
	Total Area / Weighted Curve Number			24.3	75

APPENDIX D-5

Watershed B

Stormwater Calculations - Post Development
USDA TR-55 Method

POST DEVELOPMENT FLOW
MAP



WinTR-55 Current Data Description

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Project:
SubTitle: Post Dev B
State: New York
County: Genesee
Filename: C:\Users\mcewn\OneDrive\MCE\M2405 OXBO\DOCS\POST DEV B.w55

Date: 5/8/2024
Units: English
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
Area B Pos		Outlet	24.3	80	.553

Total area: 24.30 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
2.2	2.69	3.25	3.84	4.48	6.0	1.8

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type II
Dimensionless Unit Hydrograph: <standard>

ARH

Post Dev B
Genesee County, New York

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
2.2	2.69	3.25	3.84	4.48	6.0	1.8

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type II
Dimensionless Unit Hydrograph: <standard>

ARH

Post Dev B
Genesee County, New York

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 10-Yr (cfs)	25-Yr (cfs)	100-Yr (cfs)	1-Yr (cfs)
SUBAREAS				
Area B Pos	28.61	38.27	76.13	7.73
REACHES				
OUTLET	28.61	38.27	76.13	7.73

ARH

Post Dev B
Genesee County, New York

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period			
	10-Yr (cfs)	25-Yr (cfs)	100-Yr (cfs)	1-Yr (cfs)
	(hr)	(hr)	(hr)	(hr)
SUBAREAS				
Area B Pos	28.61	38.27	76.13	7.73
	12.22	12.23	12.19	12.26
REACHES				
OUTLET	28.61	38.27	76.13	7.73

ARH

Post Dev B
Genesee County, New York

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
Area B Pos	24.30	0.553	80	Outlet	

Total Area: 24.30 (ac)

ARH

Post Dev B
Genesee County, New York

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
Area B Pos							
SHEET	100	0.0110	0.240				0.364
SHALLOW	1013	0.0110	0.050				0.166
SHALLOW	175	0.0170	0.050				0.023
					Time of Concentration		.553

ARH

Post Dev B
Genesee County, New York

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use		Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
Area B Pos	Paved parking lots, roofs, driveways		A	.1	98
	Paved parking lots, roofs, driveways		B	.3	98
	Paved parking lots, roofs, driveways		D	4.3	98
	Brush - brush, weed, grass mix	(fair)	A	.4	35
	Brush - brush, weed, grass mix	(fair)	B	1	56
	Brush - brush, weed, grass mix	(fair)	D	18.2	77
	Total Area / Weighted Curve Number			24.3	80

APPENDIX D-6

Watershed B

Dry Detention Area Calculations

STORMWATER POLLUTION PREVENTION PLAN

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Project:	OXBO	By: ARH
Location:	Bergen, NY	05.09.24

Outlet Control Structure Design - Pond B

	Elev (ft)	Pre Development Discharge Rate (cfs) (from TR-55)	Post Development Discharge Rate (cfs) (from TR-55)	Actual Discharge from Orifice (cfs)
Cl of outlet pipe	664.56			
Normal Water Level	665.00			
1 year storm event	665.72	3.62	7.73	3.62
10 year storm event	665.98	19.25	28.61	4.00
25 year storm event	666.38	27.16	38.27	4.53
100 year storm event	667.54	59.30	76.13	5.80

Oriface Diameter	0.33	ft	(3" is minimum allowed)
Area of Pipe (A)	0.085	sq ft	
Orifice coefficient (C)	0.61		
Head difference (h)		ft	
Acceleration (g)	32.2	ft/sec2	

Torricelli Equation - Orifice Calculations

$Q=CA(2gh)^{.5}$

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Location:	Bergen	Checked:	JCM	Date:	

County: Genesee

TR-55 Pre-Development Summary

STORM 1-Yr

Area or Reach Identifier	Drainage Area (acres)	% of site	Runoff Amount, Qd (in)	Peak Flow Rate (cfs)	
Entire Site	24.30	100		3,62	Flow from entire site
This Pond	25.4	104.5	0.3	3.62	Flow from this pond to overdetain for the discharge the capacity of the 4" oriface

STORM 10-Yr

Area or Reach Identifier	Drainage Area (acres)	% of site	Runoff Amount, Qd (in)	Peak Flow Rate (cfs)	
Entire Site	24.30	100		19.25	Flow from entire site
This Pond	25.4	104.5	1.1	4.00	Flow from this pond to overdetain for the discharge the capacity of the 4" oriface

STORM 100-Yr

Area or Reach Identifier	Drainage Area (acres)	% of site	Runoff Amount, Qd (in)	Peak Flow Rate (cfs)	
Entire Site	24.30	100		59.30	Flow from entire site
This Pond	25.4	104.5	3.3	5.80	Flow from this pond to overdetain for the discharge the capacity of the 4" oriface

Storm Event	Rainfall P, inches	Initial Abstraction Ia = 0.2S, inches	Potential Retention S=(1000/CN)-10 inches	CN	Runoff Amount, Inches Qd = (P-Ia)^2 / ((P-Ia)+S)
1-yr	1.87	0.67	3.33	75	0.32
10-yr	3.25	0.67	3.33	75	1.13
100-yr	6.00	0.67	3.33	75	3.28

Rainfall Distribution = TYPE II

Time of Concentration, $Tc_{(Hours)}$ = 0.65

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Location:	Bergen	Checked:	JCM	Date:	

TR-55 Post Development Summary

STORM 1-Yr

Area or Reach Identifier	Drainage Area (acres)	% of site	Runoff Amount, Qd (in)	Peak Flow Rate (cfs)
Entire Site	24.30	100		7.73
This pond	25.40	104.5	0.5	7.73

STORM 10-Yr

Area or Reach Identifier	Drainage Area (acres)	% of site	Runoff Amount, Qd (in)	Peak Flow Rate (cfs)
Entire Site	24.30	100		28.61
This pond	25.4	104.5	1.4	28.61

STORM 100-Yr

Area or Reach Identifier	Drainage Area (acres)	% of site	Runoff Amount, Qd (in)	Peak Flow Rate (cfs)
Entire Site	24.30	100		76.13
This pond	25.4	104.5	3.8	76.13

3

Storm Event	Rainfall P, inches	Initial Abstraction Ia = 0.2S, inches	Potential Retention S=(1000/CN)-10 inches	CN	Runoff Amount, Inches Qd = (P-Ia)^2 / ((P-Ia)+S)
1-yr	1.87	0.50	2.50	80	0.48
10-yr	3.25	0.50	2.50	80	1.44
100-yr	6.00	0.50	2.50	80	3.78

Rainfall Distribution = TYPE II

Time of Concentration, $Tc_{(Hours)}$ = 0.55

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Location:	Bergen	Checked:	JCM	Date:	

Storage Volume Estimation

Taken from NYS Stormwater Management Design Manual (NYS-SMDM) Appendix B

Area Final Phase = 25.4 Acres

	Channel Protection Cp_v 1 YR / 24-Hour Extended Detention	
Ia / P (From Post Development Summary Sheet, 1yr storm)	0.27	
Post Development Time of Concentration, Tc (From TR-55 Calcs)	0.55	hours
Unit Peak Discharge, qu (from TR-55 Exhibit 4-II, attached)	440	cfs/sqmi/inch
Ratio of Outflow to Inflow, qo/qi (NYS-SMDM Figure B.1, attached)	0.040	
Ratio of Storage Volume to Runoff Volume, vs/vr		
vs/vr = 0.682 - 1.43(qo/qi) + 1.64 (qo/qi)^2 - 0.804 (qo/qi)^3 =	0.63	
Pos-Dev Runoff Amount, Q_d (From Post Development Summary Sheet)	0.5	inches
Req'd Storage Volume(acre-feet), $vs = ((v_s/v_r)\ (Q_{d,\ inches})\ (A,\ acres)) / 12$ inches/foot	0.6	acre-feet
Req'd Storage Volume(cubic feet), vs = vs (acre-feet) x 43560 sq.ft./acre	28,054	cubic feet
Cp_v-ED Average release rate over 24 hours = vs (cubic feet) / 86400 seconds/24 hrs	0.32	cfs

	Overbank Flood Q_p 10YR	Extreme Flood Q_f 100 YR	
Pre-Dev Peak Flow Q_O (From TR-55 Output)	4.00	5.80	cfs
Pos-Dev Peak Flow Q_I (From TR-55 Output)	28.61	76.13	cfs
Pos-Dev Runoff Amount, Q_d (From Post Development Summary Sheet)	1.44	3.78	inches
Ratio of Pre-Dev Peak Flow to Pos-Dev Peak Flow, Q_O/Q_I	0.14	0.08	
Ratio of Storage Volume to Runoff Volume, V_S/V_R (From TR-55 Fig 6-1, Type II, attached)	0.51	0.55	
Req'd Storage Volume(acre-feet), $Vs = [((V_s/V_r)\ (Q_{d,\ inches})\ (A,\ acres)) / 12$ in./ft.]	1.55	4.40	acre-feet
Req'd Storage Volume(cubic feet), Vs = Vs (acre-feet) x 43560 sq.ft./acre	67,736	191,751	cubic feet

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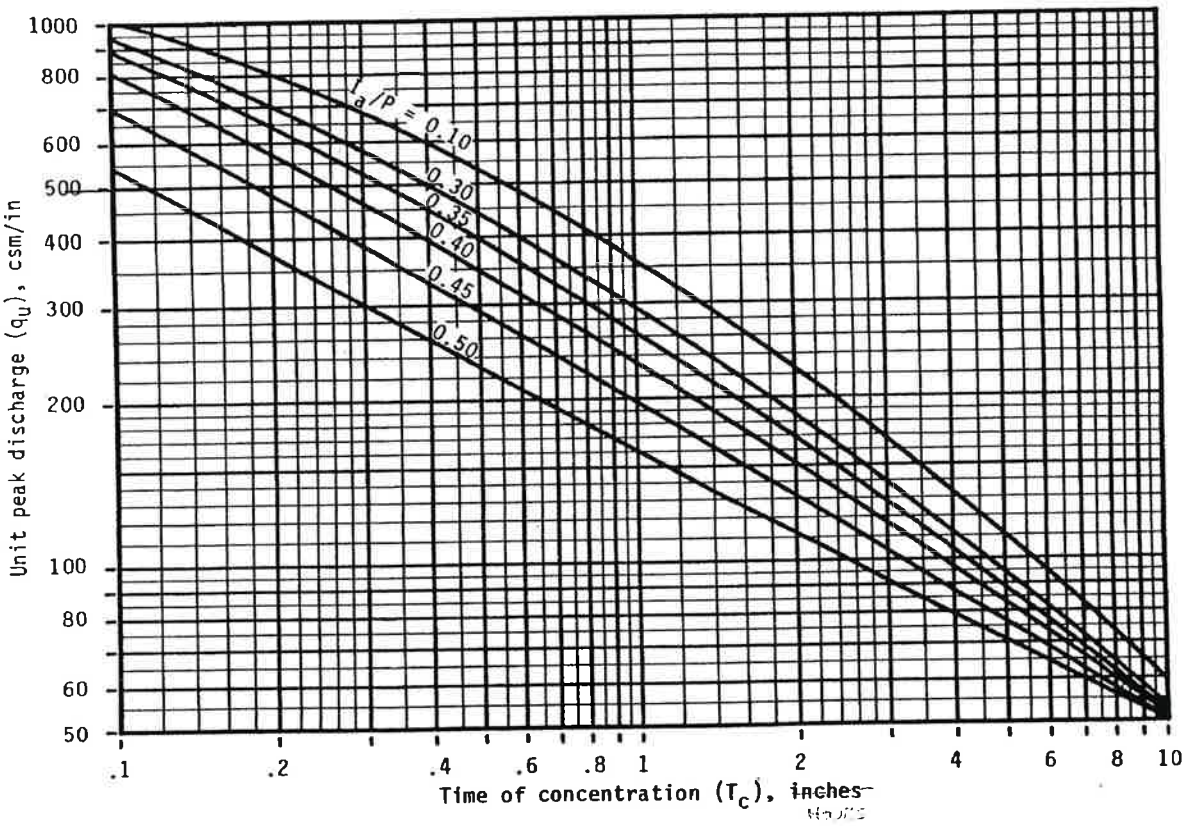
Project:	OXBO - Pond B	By:	ARH	Date:	5/9/2024
Location:	Bergen	Checked:	JCM	Date:	

Storage Volume Estimation - Continued

4-6

Exhibit 4-II: Unit peak discharge (q_u) for SCS type II rainfall distribution



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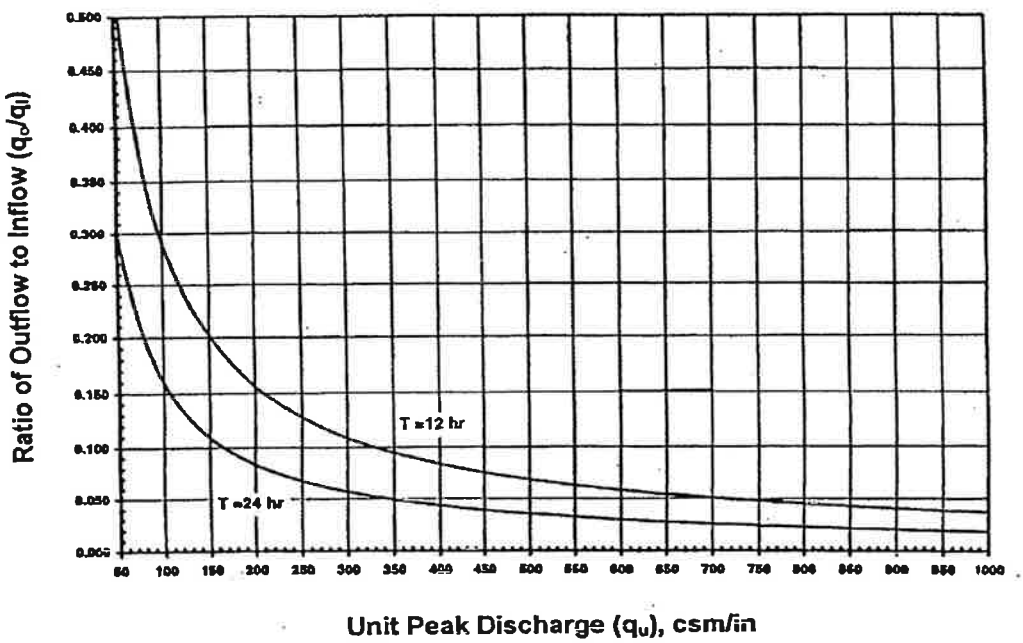
Project:	OXBO - Pond B	By:	ARH	Date:	5/9/2024
Location:	Bergen	Checked:	JCM	Date:	

Figure B.1 Detention Time vs. Discharge Ratios (Source: MDE, 2000)



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Project:	OXBO - Pond B	By:	ARH	Date:	5/9/2024
Location:	Bergen	Checked:	JCM	Date:	

Storage Volume Estimation - Continued

Input requirements and procedures

Use figure 6-1 to estimate storage volume (V_s) required or peak outflow discharge (q_o). The most frequent application is to estimate V_s, for which the required inputs are runoff volume (V_r), q_o, and peak inflow discharge (q_i). To estimate q_o, the required inputs are V_r, V_s, and q_i.

Estimating V_s

Use worksheet 6a to estimate V_s, storage volume required, by the following procedure.

1. Determine q_o. Many factors may dictate the selection of peak outflow discharge. The most common is to limit downstream discharges to a desired level, such as predevelopment discharge. Another factor may be that the outflow device has already been selected.
2. Estimate q_i by procedures in chapters 4 or 5. Do not use peak discharges developed by any other procedure. When using the Tabular Hydrograph method to estimate q_i for a subarea, only use

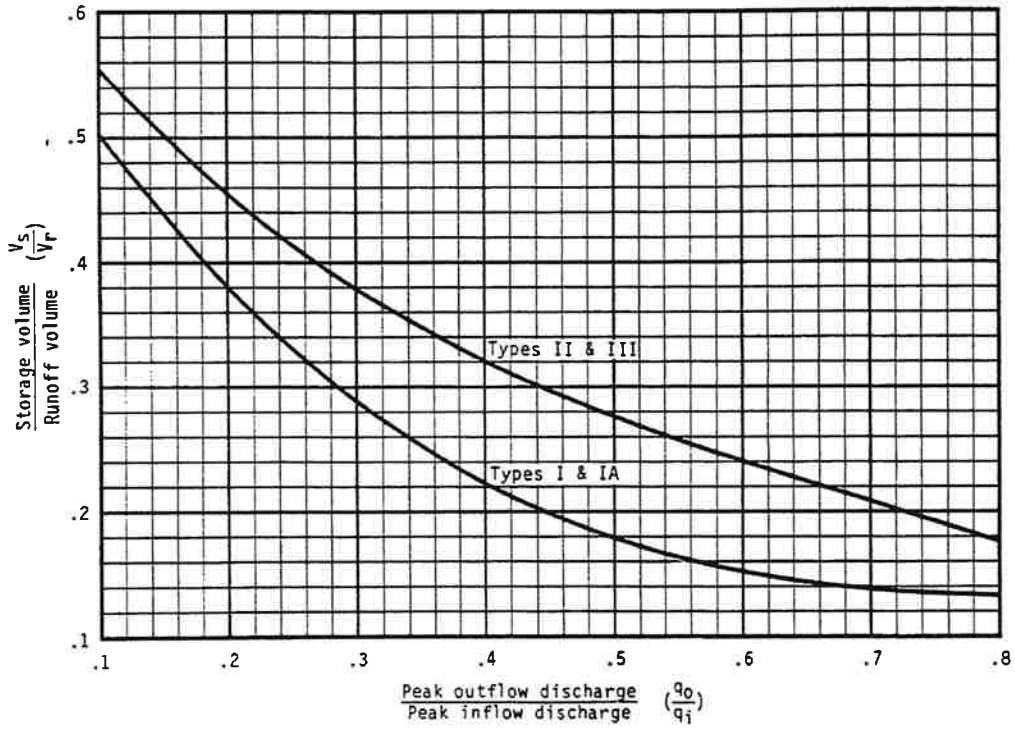

Figure 6-1.—Approximate detention basin routing for rainfall types I, IA, II, and III.

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Phone: 716-633-2601, Fax: 716-633-2704

Project:	OXBO - Pond B	By:	ARH	Date:	05/09/24
Location:	Bergen	Checked:	JCM	Date:	

Water Quality and Pond Volumes

Water Quality Volume, WQv

From NYS Stormwater Management Design Manual (NYS-SMDM), Section 4

WQv = (P*Rv*A) / 12

P=90% Rainfall Event No. for WNY	1.00			
I = Impervious cover	19.0	Percent		
Rv = 0.05 + 0.009 * I	0.22			
A = Site area	25.40	acres		
Total WQv Required =		**0.47**	acre-feet =	**20,377** cf
Total Minimum Req'd Permanent Pool Volume, PPV = Total WQv x 50%		0.23	acre-feet =	10,188 cf
Req'd Forebay (Pretreatment) Volume = Total WQv x 10% =		0.047	acre-feet =	2,038 cf
Req'd Permanent Pool Volume in the "Wet Pool" = Total PPV - Req'd Forebay Volume =		0.187	acre-feet =	8,151 cf

Is "Wet Pool" Volume Provided = or > the Total WQv Required? No, Provide WQv-ED

Req'd WQv-ED Volume (i.e, volume above Normal Water Level) =Total WQv x 50% =	0.234	acre-feet =	10,188 cf
WQv-ED Average release rate over 24 hours = WQv-ED (cubic feet) / 86400 secs/24 hrs =	0.12	c.f.s.	

Pond Levels and Volumes

Pond A	HWE, ft	HWE Area, sf	LWE, ft	LW Area, sf	water depth, ft	Avg. Area, sf	Vol. Provided, cf	Vol. Req'd, cf	Vol.Prv acft	Difference
"bottom"	665.00	65,242	665.00	65,242		65,242				
Cp_v	665.72	71,173	665.00	65242	0.72	68,207	49,109	28,054	1.13	21,055
Q_p	665.98	73,315	665.00	65242	0.98	69,278	67,893	67,736		157
Q_f	667.54	86,165	665.00	65242	2.54	75,703	192,287	191,751		535

Set Pond TOB @ EL. 668
Area @ TOB 89954 sf

APPENDIX D - 7

Flow Splitter Diversion Structures 1,2,3,and 4

STORMWATER POLLUTION PREVENTION PLAN

METZGER
CIVIL
ENGINEERING, PLLC

8245 Sheridan Drive
Williamsville, New York 14221
Phone: 716-633-2601

Project:	OXBO	By: ARH
Location:	Bergen New York	05.10.24

Flow Splitter/ Diversion Structure (FSDS -1)

- Orifice sizing - under low flow (free flow stage) usings Manning formula

Orifice pipe slope (percent)	0.10	%
Oriface pipe slope (decimal)	0.001	
Orifce pipe dia	6.00	inches
Pipe Material	pvc	
Mannings Coefficient "n"	0.012	
Min Capacity in CFS - mannings formula		
Q = .464/n *D^8/3*S^1/2	0.19	cfs

- Orifice sizing - under heavy flow (pressure flow stage) usings Torricelli formula

Invert of oriface	670.50		
Cl of outlet pipe	670.75		
Incoming pipe dia	1.50	ft	
Invert of incoming pipe	670.50		
80% in incoming pipe	671.70		
Oriface Diameter	0.5	ft	(0.25' is minimum allowed)
Area of Pipe (A)	0.196	sq ft	
Orifice coefficient (C)	0.61		
Head difference (h)	0.95	ft	
Acceleration (g)	32.2	ft/sec2	
Max capacity -Torricelli Equation			
Q=CA(2gh)^.5	0.94	cfs	

Number of orifices	2		
Min flow to level spreader	0.39	cfs	
Max flow to level spreader	1.87	cfs	
90th percentile storm flow (1.0")	1.46	cfs	(from USDA TR55 analysis)
Is this larger than min?	Yes		Yes = The orifice is large enough to
Is this smaller than the max?	Yes		handle the WQv
10 year storm flow - (3.25")	5.19	cfs	(from USDA TR55 analysis)
Is this more than the the orifice can take?	Yes		Yes = The orifice is small enough to divert the 10 year storm flow

WinTR-55 Current Data Description

--- Identification Data ---

User: ARH
Project: OXBO
SubTitle: FSDS 1
State: New York
County: Genesee
Filename: C:\Users\mcewn\OneDrive\MCE\M2405 OXBO\DOCS\FSDS 1.w55

Date: 5/16/2024
Units: English
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
Post		Outlet	1.32	98	.128

Total area: 1.32 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	-Yr (in)	10-Yr (in)	-Yr (in)	-Yr (in)	-Yr (in)	-Yr (in)
2.5	1.0	3.25	.0	.0	.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type II
Dimensionless Unit Hydrograph: <standard>

OXBO
FSDS 1
Genesee County, New York

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	-Yr (in)	10-Yr (in)	-Yr (in)	-Yr (in)	-Yr (in)	-Yr (in)
2.5	1.0	3.25	.0	.0	.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type II
Dimensionless Unit Hydrograph: <standard>

ARH

OXBO
FSDS 1
Genesee County, New York

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 2-Yr (cfs)	10-Yr (cfs)
SUBAREAS		
Post	1.46	5.19
REACHES		
OUTLET	1.46	5.19

ARH

OXBO
FSDS 1
Genesee County, New York

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period 2-Yr (cfs)	(hr)	10-Yr (cfs)	(hr)
SUBAREAS				
Post	1.46	11.94	5.19	11.95
REACHES				
OUTLET	1.46		5.19	

ARH

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FSDS 1
Genesee County, New York

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
Post	1.32	0.128	98	Outlet	

Total Area: 1.32 (ac)

OXBO
FSDS 1
Genesee County, New York

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
Post							
SHALLOW	276	0.0010	0.025				0.119
CHANNEL	89	0.0020	0.012	1.76	4.73	2.747	0.009
					Time of Concentration		.128

OXBO
FSDS 1
Genesee County, New York

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use	Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
Post	Paved parking lots, roofs, driveways	D	1.32	98
	Total Area / Weighted Curve Number		1.32	98

METZGER
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ENGINEERING, PLLC

8245 Sheridan Drive
Williamsville, New York 14221
Phone: 716-633-2601

Project:	OXBO	By: ARH
Location:	Bergen New York	05.10.24

Flow Splitter/ Diversion Structure (FSDS -2)

- Orifice sizing - under low flow (free flow stage) usings Manning formula

Orifice pipe slope (percent)	0.10	%
Oriface pipe slope (decimal)	0.001	
Orifce pipe dia	6.00	inches
Pipe Material	pvc	
Mannings Coefficient "n"	0.012	
Min Capacity in CFS - mannings formula		
Q = .464/n *D^8/3*S^1/2	0.19	cfs

- Orifice sizing - under heavy flow (pressure flow stage) usings Torricelli formula

Invert of oriface	668.50		
CI of outlet pipe	668.75		
Incoming pipe dia	1.50	ft	
Invert of incoming pipe	668.50		
80% in incoming pipe	669.70		
Oriface Diameter	0.5	ft	(0.25' is minimum allowed)
Area of Pipe (A)	0.196	sq ft	
Orifice coefficient (C)	0.61		
Head difference (h)	0.95	ft	
Acceleration (g)	32.2	ft/sec2	
Max capacity -Torricelli Equation			
Q=CA(2gh)^.5	0.94	cfs	

Number of orifices	2		
Min flow to level spreader	0.39	cfs	
Max flow to level spreader	1.87	cfs	
90th percentile storm flow (1.0")	1.36	cfs	(from USDA TR55 analysis)
Is this larger than min?	Yes	Yes = The orifice is large enough to	
Is this smaller than the max?	Yes	handle the WQv	
10 year storm flow - (3.25")	4.84	cfs	(from USDA TR55 analysis)
Is this more than the the orifice can take?	Yes	Yes = The orifice is small enough to divert the 10 year storm flow	

WinTR-55 Current Data Description

--- Identification Data ---

User: ARH
Project: Edwards
SubTitle: FDSD 2
State: New York
County: Genesee
Filename: C:\Users\mcewn\OneDrive\MCE\M2311 Stamp-Kingfisher\Documents\FSDS 2.w55

Date: 5/10/2024
Units: English
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
Post		Outlet	1.32	98	.174

Total area: 1.32 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	-Yr (in)	10-Yr (in)	-Yr (in)	-Yr (in)	-Yr (in)	-Yr (in)
2.5	1.0	3.25	.0	.0	.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type II
Dimensionless Unit Hydrograph: <standard>

Edwards
FDSD 2
Genesee County, New York

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	-Yr (in)	10-Yr (in)	-Yr (in)	-Yr (in)	-Yr (in)	-Yr (in)
2.5	1.0	3.25	.0	.0	.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type II
Dimensionless Unit Hydrograph: <standard>

ARH

Edwards
FDSD 2
Genesee County, New York

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period -Yr (cfs)	10-Yr (cfs)
SUBAREAS		
Post	1.36	4.84
REACHES		
OUTLET	1.36	4.84

Edwards
FDSD 2
Genesee County, New York

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period 2-Yr (cfs)	(hr)	10-Yr (cfs)	(hr)
SUBAREAS				
Post	1.36	11.98	4.84	11.98
REACHES				
OUTLET	1.36		4.84	

Edwards
FDSD 2
Genesee County, New York

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
Post	1.32	0.174	98	Outlet	

Total Area: 1.32 (ac)

Edwards
FDSD 2
Genesee County, New York

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
Post							
SHALLOW	351	0.0010	0.025				0.152
CHANNEL	231	0.0020	0.012	1.76	4.73	2.917	0.022
					Time of Concentration		.174

Edwards
FDSD 2
Genesee County, New York

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use	Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
Post	Paved parking lots, roofs, driveways	D	1.32	98
	Total Area / Weighted Curve Number		1.32	98

METZGER
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ENGINEERING, PLLC

8245 Sheridan Drive
Williamsville, New York 14221
Phone: 716-633-2601

Project:	OXBO	By: ARH
Location:	Bergen New York	05.10.24

Flow Splitter/ Diversion Structure (FSDS -3)

- Orifice sizing - under low flow (free flow stage) usings Manning formula

Orifice pipe slope (percent)	0.10	%	
Oriface pipe slope (decimal)	0.001		
Orifce pipe dia	6.00	inches	
Pipe Material	pvc		
Mannings Coefficient "n"	0.012		
Min Capacity in CFS - mannings formula			
Q = .464/n *D^8/3*S^1/2	0.19	cfs	

- Orifice sizing - under heavy flow (pressure flow stage) usings Torricelli formula

Invert of oriface	670.50		
Cl of outlet pipe	670.75		
Incoming pipe dia	1.50	ft	
Invert of incoming pipe	670.50		
80% in incoming pipe	671.70		
Oriface Diameter	0.5	ft	(0.25' is minimum allowed)
Area of Pipe (A)	0.196	sq ft	
Orifice coefficient (C)	0.61		
Head difference (h)	0.95	ft	
Acceleration (g)	32.2	ft/sec2	
Max capacity -Torricelli Equation			
Q=CA(2gh)^.5	0.94	cfs	

Number of orifices	2		
Min flow to level spreader	0.39	cfs	
Max flow to level spreader	1.87	cfs	
90th percentile storm flow (1.0")	1.04	cfs	(from USDA TR55 analysis)
Is this larger than min?	Yes	Yes = The orifice is large enough to	
Is this smaller than the max?	Yes	handle the WQv	
10 year storm flow - (3.25")	3.70	cfs	(from USDA TR55 analysis)
Is this more than the the orifice can take?	Yes	Yes = The orifice is small enough to divert the 10 year storm flow	

WinTR-55 Current Data Description

--- Identification Data ---

User: ARH
Project: OXBO
SubTitle: FSDS 3
State: New York
County: Genesee
Filename: C:\Users\mcewn\OneDrive\MCE\M2405 OXBO\DOCS\FSDS 3.w55

Date: 5/10/2024
Units: English
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
Post		Outlet	0.92	98	.116

Total area: .92 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	-Yr (in)	10-Yr (in)	-Yr (in)	-Yr (in)	-Yr (in)	-Yr (in)
2.5	1.0	3.25	.0	.0	.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type II
Dimensionless Unit Hydrograph: <standard>

OXBO
FSDS 3
Genesee County, New York

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	-Yr (in)	10-Yr (in)	-Yr (in)	-Yr (in)	-Yr (in)	-Yr (in)
2.5	1.0	3.25	.0	.0	.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type II
Dimensionless Unit Hydrograph: <standard>

ARH

OXBO
FSDS 3
Genesee County, New York

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 2-Yr (cfs)	10-Yr (cfs)
SUBAREAS		
Post	1.04	3.70
REACHES		
OUTLET	1.04	3.70

OXBO
FSDS 3
Genesee County, New York

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period -Yr (cfs) (hr)	10-Yr (cfs) (hr)
SUBAREAS		
Post	1.04 11.94	3.70 11.93
REACHES		
OUTLET	1.04	3.70

OXBO
FSDS 3
Genesee County, New York

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
Post	.92	0.116	98	Outlet	

Total Area: .92 (ac)

OXBO
FSDS 3
Genesee County, New York

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
Post							
SHALLOW	226	0.0010	0.025				0.098
CHANNEL	189	0.0020	0.012	1.76	4.73	2.917	0.018
					Time of Concentration		.116

OXBO
FSDS 3
Genesee County, New York

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use	Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
Post	Paved parking lots, roofs, driveways	D	.92	98
	Total Area / Weighted Curve Number		.92	98

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8245 Sheridan Drive
Williamsville, New York 14221
Phone: 716-633-2601

Project:	OXBO	By: ARH
Location:	Bergen New York	05.10.24

Flow Splitter/ Diversion Structure (FSDS -4)

- Orifice sizing - under low flow (free flow stage) usings Manning formula

Orifice pipe slope (percent)	0.10	%	
Oriface pipe slope (decimal)	0.001		
Orifce pipe dia	6.00	inches	
Pipe Material	pvc		
Mannings Coefficient "n"	0.012		
Min Capacity in CFS - mannings formula			
Q = .464/n *D^8/3*S^1/2	0.19	cfs	

- Orifice sizing - under heavy flow (pressure flow stage) usings Torricelli formula

Invert of oriface	668.50		
Cl of outlet pipe	668.75		
Incoming pipe dia	1.50	ft	
Invert of incoming pipe	668.50		
80% in incoming pipe	669.70		
Oriface Diameter	0.5	ft	(0.25' is minimum allowed)
Area of Pipe (A)	0.196	sq ft	
Orifice coefficient (C)	0.61		
Head difference (h)	0.95	ft	
Acceleration (g)	32.2	ft/sec2	
Max capacity -Torricelli Equation			
Q=CA(2gh)^.5	0.94	cfs	

Number of orifices	2		
Min flow to level spreader	0.39	cfs	
Max flow to level spreader	1.87	cfs	
90th percentile storm flow (1.0")	1.03	cfs	(from USDA TR55 analysis)
Is this larger than min?	Yes	Yes = The orifice is large enough to	
Is this smaller than the max?	Yes	handle the WQv	
10 year storm flow - (3.25")	3.66	cfs	(from USDA TR55 analysis)
Is this more than the the orifice can take?	Yes	Yes = The orifice is small enough to divert the 10 year storm flow	

WinTR-55 Current Data Description

--- Identification Data ---

User: ARH
Project: OXBO
SubTitle: FSDS 4
State: New York
County: Genesee
Filename: C:\Users\mcewn\OneDrive\MCE\M2405 OXBO\DOCS\FSDS 4.w55

Date: 5/10/2024
Units: English
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
Post		Outlet	0.92	98	.123

Total area: .92 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	-Yr (in)	10-Yr (in)	-Yr (in)	-Yr (in)	-Yr (in)	-Yr (in)
2.5	1.0	3.25	.0	.0	.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type II
Dimensionless Unit Hydrograph: <standard>

OXBO
FSDS 4
Genesee County, New York

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	-Yr (in)	10-Yr (in)	-Yr (in)	-Yr (in)	-Yr (in)	-Yr (in)
2.5	1.0	3.25	.0	.0	.0	.0

Storm Data Source: User-provided custom storm data
Rainfall Distribution Type: Type II
Dimensionless Unit Hydrograph: <standard>

OXBO
FSDS 4
Genesee County, New York

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 2-Yr (cfs)	10-Yr (cfs)
SUBAREAS		
Post	1.03	3.66
REACHES		
OUTLET	1.03	3.66

ARH

OXBO
FSDS 4
Genesee County, New York

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period -Yr (cfs) (hr)	10-Yr (cfs) (hr)
SUBAREAS		
Post	1.03 11.94	3.66 11.94
REACHES		
OUTLET	1.03	3.66

OXBO
FSDS 4
Genesee County, New York

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
Post	.92	0.123	98	Outlet	

Total Area: .92 (ac)

OXBO
FSDS 4
Genesee County, New York

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
Post							
SHALLOW	226	0.0010	0.025				0.098
CHANNEL	256	0.0020	0.012	1.76	4.73	2.844	0.025
					Time of Concentration		.123

OXBO
FSDS 4
Genesee County, New York

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use	Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
Post	Paved parking lots, roofs, driveways	D	.92	98
	Total Area / Weighted Curve Number		.92	98

APPENDIX E

Green Infrastructure Planning and Design

STORMWATER POLLUTION PREVENTION PLAN

GREEN INFRASTRUCTURE PLANNING AND DESIGN

The New York State Stormwater Management Design Manual (January, 2015) outlines a five-step process that planners and designers must use to address runoff reduction from development sites. This process involves consideration of stormwater management through site planning and consideration of green infrastructure techniques, as well as standard stormwater management practices in an effort to achieve reduction in runoff volumes from the developed site and improve the quality of stormwater discharges from the project site. The five steps include:

1. Site Planning to preserve natural features and reduce impervious cover,
2. Calculation of the Water Quality Volume (WQv) for the site,
3. Incorporation of Green Infrastructure techniques and standard SMP's with Runoff Reduction Volume (RRv) capacity,
4. Use of Standard SMP's, where applicable, to treat the portion of water quality volume not addressed by Step 3 (Green Infrastructure techniques and standard SMP's with Runoff Reduction Volume (RRv) capacity); and
5. Design of volume and peak rate control practices where required.

The following sections discuss how this five-step process was used for this project.

Step 1: Site Planning

A. Conserve Natural Areas

1. Preservation of Undisturbed Areas

   The area south of the building will remain undisturbed.

2. Preservation of Buffers

   The existing vegetation in the aforementioned area will provide buffer area.

3. Reduction of Clearing and Grading

   The project has been designed to limit clearing and grading to the minimum amount needed for driveways, buildings, utilities and stormwater management facilities.

4. Locating Development in Less Sensitive Areas

   The site does not contain any less sensitive areas.

5. Open Space Design

   This is a commercial site and not a candidate for an open space design.

6. Soil Restoration

   Restoration of soils for proposed grassed areas, will be as required by the NYS Stormwater Management Design Manual.

B. Reduce Impervious Cover

1. Roadway Reduction
   There are no proposed roadways.

2. Sidewalk Reduction
   This project has limited sidewalks to the minimum required for function and ADA Code.

3. Driveway Reduction
   The driveways are designed to ensure the driveways are as narrow as possible.

4. Cul-de-sac Reduction
   The site has no culs-de-sac.

5. Building Footprint Reduction
   The footprints have designed to the minimum size needed for the intended use.

6. Parking Reduction
   Parking has been designed to the minimum needed to serve the building.

Step 2: Determine Water Quality Volume (WQv)

The water quality volume of the site has been calculated by the methods specified in the manual: The calculations are provided on the attached spreadsheet.

Step 3: Runoff Reduction by Applying Green Infrastructure Techniques and Standard SMP's with Runoff Reduction Volume (RRv) capacity

1. Conservation of Natural Areas
   The area south of the building will remain undisturbed.

2. Sheet flow to Riparian Buffers or Filter Strips
   A filter strip has been designed to sheet flow into the bioretention areas.

3. Vegetated Open Swales
   The site utilizes filter strips to convey stormwater.

4. Tree Planting / Tree Box
   Construction will be limited to allow as many perimeter trees as possible to remain on site.

5. Disconnection of Rooftop Runoff

   The rainwater from the rooftops will be directed to the level spreader, through the bioretention filters and then to the dry detention areas.

6. Stream Daylighting

   Not Applicable to this project, as there are no piped streams running through the site.

7. Rain Garden

   The project is commercial in nature. The use of rain gardens would not be practical.

8. Green Roof

   This project consists of commercial structures with traditional roof styling and are not conducive to the use of green roofs.

9. Stormwater Planters

   The intended use of this project does not allow for stormwater planters.

10. Rain Tanks / Cisterns

    The project is commercial in nature. The use of rain tanks would not be practical.

11. Porous Pavement

    Due to the severe weather, frost heave and the need for snow plowing in Western New York, porous pavement is not practical.

12. Standard SMP's with RRv Capacity

    Infiltration Practice, Bioretention Practice, Dry Swale (Open Channel Practice)

    This site uses gravel diaphragms, filter strips and bioretention areas to reduce 100% of the water quality volume.

Step 4: Apply Standard SMP's To Address Remaining WQv and
Step 5: Apply Volume and Peak Rate Control Practices

The Standard SMP's from the NYS Stormwater Management Design Manual include: Stormwater Ponds, Stormwater Wetlands, Filters, Infiltration, and Open Channels.

For this project, two bioretention filter beds have been designed to redudce 100% of the water quality volume. In addition, two dry detention areas were designed for the site to provide volume and peak rate controls. A complete set of Stormwater Calculations have been prepared. Bioretention areas will provide pretreatment and filtration of stormwater prior to discharging the water to the dry detention areas. Stormwater will be discharged from the dry detention areas through a controlled outlet.

The dry detention areas will receive and detain flows until the storm subsides and allows the basin to drain through the controlled outlet. The dry detention areas have been designed, in accordance with the New York State Stormwater Management Design Manual, to allow for sufficient storage to attenuate and release stormwater from the developed site at discharge rates not exceeding the pre-developed rates for the following conditions:

- Channel Protection Volume Requirements: Attenuate 1-year post development peak discharge to 1-year pre-development peak discharge.
- Overbank Flood Requirements: Attenuate 10-year post development peak discharge to 10-year pre-development peak discharge.
- Extreme Flood Requirements: Attenuate 100-year post development peak discharge to 100-year pre-development peak discharge.

Summary:
The stormwater management system for this project has been designed to incorporate Green Infrastructure Techniques through infiltration practices (bio-retention) measures as discussed above.

The RRv achieved by these practices will provide 100% of the RRv required for the site. Supporting calculations are given on the attached spreadsheets.

While not needed for runoff reduction volume, two on site dry detention areas with a controlled outlet have also been designed for the project to provide the required volume detention and attenuation of the 10 and 100 year storm events. Therefore the site complies with the requirements set forth in the New York State Department of Environmental Conservation Stormwater Design Manual.

Bioretention Worksheet

(For use on HSG C or D Soils with underdrains)

Af=WQv*(df)/[k*(hf+df)(tf)]

Af	Required Surface Area (ft2)
WQv	Water Quality Volume (ft3)
df	Depth of the Soil Medium (feet)
hf	Average height of water above the planter bed
tf	Volume Through the Filter Media (days)

k — The hydraulic conductivity [ft/day], can be varied depending on the properties of the soil media. Some reported conductivity values are: ***Sand*** - 3.5 ft/day (City of Austin 1988); ***Peat*** - 2.0 ft/day (Galli 1990); ***Leaf Compost*** - 8.7 ft/day (Claytor and Schueler, 1996); ***Bioretention Soil*** (0.5 ft/day (Claytor &

Design Point:	**outlet**

Enter Site Data For Drainage Area to be Treated by Practice

Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft^3)	Precipitation (in)	Description
1	25.40	6.70	0.26	0.29	26499.00	1.00	Bioretention
Enter Impervious Area Reduced by Disconnection of Rooftops		0.00	26%	0.29	26,499	<<WQv after adjusting for Disconnected Rooftops	
Enter the portion of the WQv that is not reduced for all practices routed to this practice.					0	ft^3	

Soil Information

Soil Group	D		
Soil Infiltration Rate	2.00	*in/hour*	*Design as an infiltration bioretention practice*
Using Underdrains?	Yes	*Okay*	

Calculate the Minimum Filter Area

		Value	Units	Notes
WQv		26,499	ft^3	
Enter Depth of Soil Media	*df*	2.5	*ft*	*2.5-4 ft*
Enter Hydraulic Conductivity	*k*	0.5	*ft/day*	
Enter Average Height of Ponding	*hf*	0.5	*ft*	*6 inches max.*
Enter Filter Time	*tf*	2.5	*days*	
Required Filter Area	***Af***	**17666**	ft^2	

Determine Actual Bio-Retention Area

Filter Width	60	*ft*	
Filter Length	737	*ft*	
Filter Area	44220	ft^2	
Actual Volume Provided	66330	ft^3	

Determine Runoff Reduction

Is the Bioretention contributing flow to another practice?	Yes	Select Practice	Other/Standard SMP
RRv	26,532		
RRv applied	**26,499**	ft^3	***This is 40% of the storage provided or WQv whichever is less.***
Volume Treated	0	ft^3	*This is the portion of the WQv that is not reduced in the practice.*
Volume Directed	0	ft^3	This volume is directed another practice

Bioretention Worksheet

Sizing √	OK		*Check to be sure Area provided ≥ Af*

(For use on HSG C or D Soils with underdrains)

Af=WQv*(df)/[k*(hf+df)(tf)]

Af	Required Surface Area (ft2)
WQv	Water Quality Volume (ft3)
df	Depth of the Soil Medium (feet)
hf	Average height of water above the planter bed
tf	Volume Through the Filter Media (days)

k — The hydraulic conductivity [ft/day], can be varied depending on the properties of the soil media. Some reported conductivity values are: ***Sand*** - 3.5 ft/day (City of Austin 1988); ***Peat*** - 2.0 ft/day (Galli 1990); ***Leaf Compost*** - 8.7 ft/day (Claytor and Schueler, 1996); ***Bioretention Soil*** (0.5 ft/day (Claytor & Schueler, 1996)

Design Point:	**outlet**

Enter Site Data For Drainage Area to be Treated by Practice

Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft^3)	Precipitation (in)	Description
2	24.30	4.70	0.19	0.22	19765.35	1.00	Bioretention
Enter Impervious Area Reduced by Disconnection of Rooftops		0.00	19%	0.22	19,765	<<WQv after adjusting for Disconnected Rooftops	
Enter the portion of the WQv that is not reduced for all practices routed to this practice.					0	ft^3	

Soil Information

Soil Group	D		
Soil Infiltration Rate	2.00	*in/hour*	*Design as an infiltration bioretention practice*
Using Underdrains?	Yes	*Okay*	

Calculate the Minimum Filter Area

		Value	Units	Notes
WQv		19,765	ft^3	
Enter Depth of Soil Media	*df*	2.5	*ft*	*2.5-4 ft*
Enter Hydraulic Conductivity	*k*	0.5	*ft/day*	
Enter Average Height of Ponding	*hf*	0.5	*ft*	*6 inches max.*
Enter Filter Time	*tf*	2.5	*days*	
Required Filter Area	***Af***	**13177**	ft^2	

Determine Actual Bio-Retention Area

Filter Width	32	*ft*	
Filter Length	1030	*ft*	
Filter Area	32960	ft^2	
Actual Volume Provided	49440	ft^3	

Determine Runoff Reduction

Is the Bioretention contributing flow to another practice?	Yes	Select Practice	Other/Standard SMP
RRv	19,776		
RRv applied	**19,765**	ft^3	***This is 40% of the storage provided or WQv whichever is less.***
Volume Treated	0	ft^3	*This is the portion of the WQv that is not reduced in the practice.*

APPENDIX F

Site Soils Map Data

STORMWATER POLLUTION PREVENTION PLAN

Map Scale: 1:4,040 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI		Percent of AOI	
ApA	Appleton silt loam, 0 to 3 percent slopes	PRIME	6.6	B/D	12.9%
LmA	Lima silt loam, 0 to 3 percent slopes	PRIME	1.2	B/D	2.3%
LmB	Lima silt loam, 3 to 8 percent slopes	PRIME	36.7	B/D	72.0%
LoA	Lyons soils, 0 to 3 percent slopes	NOT	3.3	C/D	6.4%
OnC	Ontario loam, 8 to 15 percent slopes	PRIME	2.3	B	4.5%
PhC	Palmyra gravelly loam, 8 to 15 percent slopes	NOT	0.9	A	1.8%
Totals for Area of Interest		PRIME	**51.0**	HSG	**100.0%**

HSG	
A	2 %
B	5 %
C	0 %
D	93 %

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Genesee County, New York
Survey Area Data: Version 24, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 15, 2023—May 28, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Genesee County, New York

LmB—Lima silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w3kk
Elevation: 380 to 1,680 feet
Mean annual precipitation: 31 to 57 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 100 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Lima and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lima

Setting

Landform: Till plains, ridges, drumlins
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Calcareous loamy lodgment till derived from limestone, sandstone, and shale

Typical profile

Ap - 0 to 9 inches: silt loam
Bt/E - 9 to 12 inches: loam
Bt1 - 12 to 16 inches: loam
Bt2 - 16 to 25 inches: gravelly loam
C - 25 to 79 inches: gravelly loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B/D
Ecological site: F101XY013NY - Moist Till
Hydric soil rating: No

Minor Components

Honeoye

Percent of map unit: 6 percent
Landform: Ridges, till plains, drumlins
Landform position (two-dimensional): Summit, backslope, shoulder
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Appleton

Percent of map unit: 3 percent
Landform: Ridges, drumlins, till plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Kendaia

Percent of map unit: 3 percent
Landform: Ridges, till plains, drumlins
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Cazenovia

Percent of map unit: 2 percent
Landform: Reworked lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Lyons

Percent of map unit: 1 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Genesee County, New York
Survey Area Data: Version 24, Sep 5, 2023

APPENDIX G

Sample Inspection Checklists

Date: _____

Project: _____

Time: _____

Temperature: _____

Weather: _____

Soil Conditions: ____ Dry ____ Wet ____ Frozen ____ Snow covered

Runoff at discharge point: ____ None ____ Clear ____ Murky

Deficiencies: _____

_____

_____

_____

Activity on site: _____

_____

_____

_____

_____ _____

Inspector (print name) **Date of Inspection**

_____ _____

Qualified Inspector (print name) **Qualified Inspector Signature**

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

Maintaining Water Quality

Yes No NA
[ ] [ ] [ ] Is there an increase in turbidity causing a substantial visible contrast to natural conditions at the outfalls?
[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease at the outfalls?
[ ] [ ] [ ] All disturbance is within the limits of the approved plans.
[ ] [ ] [ ] Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

Housekeeping

1. General Site Conditions

Yes No NA
[ ] [ ] [ ] Is construction site litter, debris and spoils appropriately managed?
[ ] [ ] [ ] Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
[ ] [ ] [ ] Is construction impacting the adjacent property?
[ ] [ ] [ ] Is dust adequately controlled?

2. Temporary Stream Crossing

Yes No NA
[ ] [ ] [ ] Maximum diameter pipes necessary to span creek without dredging are installed.
[ ] [ ] [ ] Installed non-woven geotextile fabric beneath approaches.
[ ] [ ] [ ] Is fill composed of aggregate (no earth or soil)?
[ ] [ ] [ ] Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

3. Stabilized Construction Access

Yes No NA
[ ] [ ] [ ] Stone is clean enough to effectively remove mud from vehicles.
[ ] [ ] [ ] Installed per standards and specifications?
[ ] [ ] [ ] Does all traffic use the stabilized entrance to enter and leave site?
[ ] [ ] [ ] Is adequate drainage provided to prevent ponding at entrance?

Runoff Control Practices

1. Excavation Dewatering

Yes No NA
[ ] [ ] [ ] Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
[ ] [ ] [ ] Clean water from upstream pool is being pumped to the downstream pool.
[ ] [ ] [ ] Sediment laden water from work area is being discharged to a silt-trapping device.
[ ] [ ] [ ] Constructed upstream berm with one-foot minimum freeboard.

Runoff Control Practices (continued)

2. Flow Spreader

Yes No NA

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
[ ] [ ] [ ] Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales

Yes No NA

[ ] [ ] [ ] Installed per plan with minimum side slopes 2H:1V or flatter.
[ ] [ ] [ ] Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
[ ] [ ] [ ] Sediment-laden runoff directed to sediment trapping structure

4. Stone Check Dam

Yes No NA

[ ] [ ] [ ] Is channel stable? (flow is not eroding soil underneath or around the structure).
[ ] [ ] [ ] Check is in good condition (rocks in place and no permanent pools behind the structure).
[ ] [ ] [ ] Has accumulated sediment been removed?.

5. Rock Outlet Protection

Yes No NA

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Installed concurrently with pipe installation.

Soil Stabilization

1. Topsoil and Spoil Stockpiles

Yes No NA

[ ] [ ] [ ] Stockpiles are stabilized with vegetation and/or mulch.
[ ] [ ] [ ] Sediment control is installed at the toe of the slope.

2. Revegetation

Yes No NA

[ ] [ ] [ ] Temporary seedings and mulch have been applied to idle areas.
[ ] [ ] [ ] 4 inches minimum of topsoil has been applied under permanent seedings

Sediment Control Practices

1. Silt Fence and Linear Barriers

Yes No NA

[ ] [ ] [ ] Installed on Contour, 10 feet from toe of slope (not across conveyance channels).
[ ] [ ] [ ] Joints constructed by wrapping the two ends together for continuous support.
[ ] [ ] [ ] Fabric buried 6 inches minimum.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.

Sediment accumulation is ___% of design capacity.

Sediment Control Practices (continued)

2. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated; Filter Sock or Manufactured practices)

Yes No NA

[ ] [ ] [ ] Installed concrete blocks lengthwise so open ends face outward, not upward.
[ ] [ ] [ ] Placed wire screen between No. 3 crushed stone and concrete blocks.
[ ] [ ] [ ] Drainage area is 1acre or less.
[ ] [ ] [ ] Excavated area is 900 cubic feet.
[ ] [ ] [ ] Excavated side slopes should be 2:1.
[ ] [ ] [ ] 2" x 4" frame is constructed and structurally sound.
[ ] [ ] [ ] Posts 3-foot maximum spacing between posts.
[ ] [ ] [ ] Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
[ ] [ ] [ ] Manufactured insert fabric is free of tears and punctures.
[ ] [ ] [ ] Filter Sock is not torn or flattened and fill material is contained within the mesh sock.

Sediment accumulation ___% of design capacity.

3. Temporary Sediment Trap

Yes No NA

[ ] [ ] [ ] Outlet structure is constructed per the approved plan or drawing.
[ ] [ ] [ ] Geotextile fabric has been placed beneath rock fill.
[ ] [ ] [ ] Sediment trap slopes and disturbed areas are stabilized.

Sediment accumulation is ___% of design capacity.

4. Temporary Sediment Basin

Yes No NA

[ ] [ ] [ ] Basin and outlet structure constructed per the approved plan.
[ ] [ ] [ ] Basin side slopes are stabilized with seed/mulch.
[ ] [ ] [ ] Drainage structure flushed and basin surface restored upon removal of sediment basin facility.
[ ] [ ] [ ] Sediment basin dewatering pool is dewatering at appropriate rate.

Sediment accumulation is ___% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design. All practices shall be maintained in accordance with their respective standards.

Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

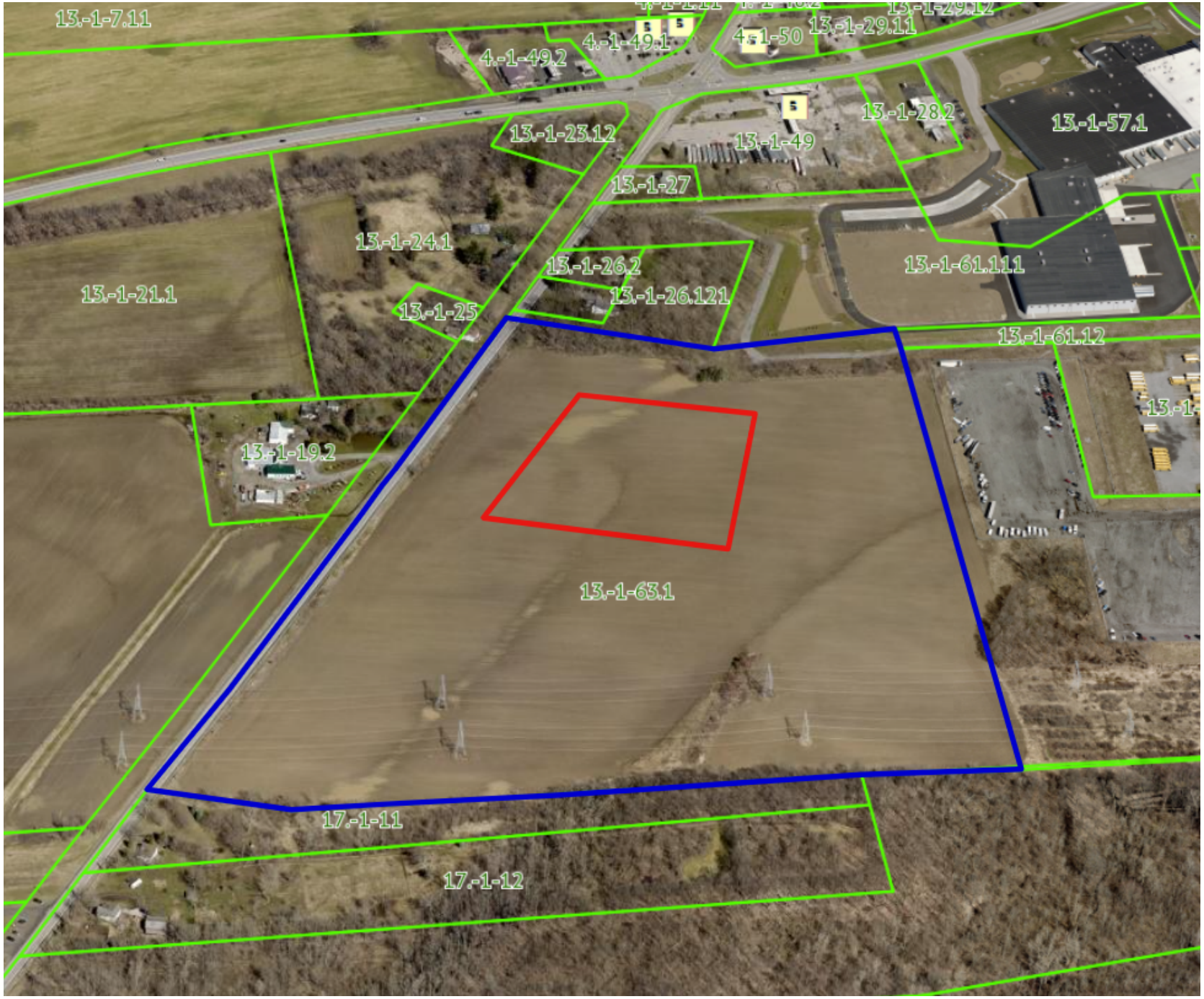
b. Modifications to the SWPPP (To be completed as described below)

The Operator shall amend the SWPPP whenever:

1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP; or
2. The SWPPP proves to be ineffective in:
   a. Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit; or
   b. Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity; and
3. Additionally, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement any measure of the SWPPP.

Modification & Reason:

T-03-BER-07-24



04/02/2023