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January 9, 2026

Tony Repp, Deputy Director
Community Development Department
Village of Libertyville
325 N. Milwaukee Avenue, Ste. 203
Libertyville, Illinois 60048

RE: 30532-30568 N. Harris Rd., Libertyville, IL – New Industrial Facility & Private Roadway

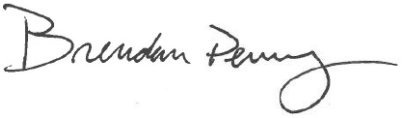
Dear Mr. Repp,

We are pleased to submit this proposal on behalf of Aston Villa Land Partners LLC, the owner ("Owner") of the captioned property. Please find the following items enclosed for review by staff:

1. Land Use Application (31 copies)
2. ARC Application (31 copies)
3. Proof of Ownership (vesting deed) (31 copies)
4. Owner Authorization (31 copies)
5. Authorization for Sign Posting (31 copies)
6. Legal Description of Subject Property (31 copies)
7. Response to Staff Cursory Review Letter (31 copies)
8. Project Narrative Letter (31 copies)
9. Responses to Variation Approval Standards (31 copies)
10. Letter Requesting Waiver of Recapture Fee Interest (31 copies)
11. Site Plan (six 24" x 36" copies and twenty-five 8.5" x 11" copies)
12. Floor Plans (six 24" x 36" copies and twenty-five 8.5" x 11" copies)
13. Trash Compactor Elevations (six 24" x 36" copies and twenty-five 8.5" x 11" copies)
14. Elevations (six 24" x 36" copies and twenty-five 8.5" x 11" copies)
15. Signage Plans (six 24" x 36" copies and twenty-five 8.5" x 11" copies)
16. Preliminary Landscape Plans (six 24" x 36" copies and twenty-five 8.5" x 11" copies)
17. Lighting Plans and Photometrics (six 24" x 36" copies and twenty-five 8.5" x 11" copies)
18. Preliminary Engineering Plans (six 24" x 36" copies and twenty-five 8.5" x 11" copies)
19. Site Survey (six 24" x 36" copies and twenty-five 8.5" x 11" copies)
20. Aerial of Subject Property (31 copies)
21. Traffic Study - KLOA, Inc. (31 copies)
22. Phase I ESA – Pioneer Environmental Services (31 copies)
23. Preliminary Stormwater Management Report - Manhard Consulting, Ltd. (31 copies)

We look forward to working with the Village on all aspects of this exciting development proposal. Please feel free to contact me if you have any questions or if any additional information is needed at this time.

Sincerely,
MELTZER, PURTILL & STELLE LLC



Brendan G. Penny

LEGAL DESCRIPTION FOR INDUSTRIAL SUBDIVISION

LIBERTYVILLE, ILLINOIS

PARCEL 1:

THE EAST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 12, EXCEPT LOT 1 IN ROBERT J. MEYER'S ACRE BEING A SUBDIVISION OF PART OF EAST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 12, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED OCTOBER 27, 1956 AS DOCUMENT NUMBER 928535, EXCEPT THAT PART GRANTED FOR HIGHWAY PURPOSES BY INSTRUMENT RECORDED AS DOCUMENT NUMBER 768745 AND EXCEPT THAT PART GRANTED FOR HIGHWAY PURPOSES BY INSTRUMENT RECORDED AS DOCUMENT NUMBER 6221896; IN LAKE COUNTY, ILLINOIS.

PARCEL 2:

ALL THAT PART OF THE NORTHEAST 1/4 OF SECTION 12 LYING WESTERLY OF THE RIGHT OF WAY OF THE CHICAGO AND WISCONSIN RAILROAD COMPANY, NOW KNOWN AS THE MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE RAILWAY COMPANY, EXCEPT THE NORTH 185 FEET MEASURED PERPENDICULARLY, EXCEPT THAT PART DESCRIBED AS FOLLOWS: BEGINNING AT A POINT ON THE SOUTH LINE OF THE NORTHEAST 1/4, SAID POINT BEING 1050.7 FEET WEST OF THE SOUTHEAST CORNER OF SAID QUARTER SECTION; THENCE NORTHWESTERLY ALONG SAID RIGHT OF WAY LINE 535.1 FEET, MORE OR LESS, TO THE WEST LINE OF THE EAST 1/2 OF THE NORTHEAST 1/4 OF SAID SECTION 12; THENCE SOUTH ALONG SAID HALF QUARTER SECTION LINE 460.5 FEET, MORE OR LESS TO THE SOUTH LINE OF SAID QUARTER SECTION; THENCE EAST ALONG SAID SOUTH LINE 272.5 FEET TO THE POINT OF BEGINNING; AND EXCEPT THAT PART GRANTED FOR HIGHWAY PURPOSES BY INSTRUMENT RECORDED AS DOCUMENT 768745, AND FURTHER EXCEPTING THAT PART ACQUIRED FOR ROAD PURPOSES BY THE DEPARTMENT OF TRANSPORTATION, STATE OF ILLINOIS, IN CONDEMNATION CASE 00 ED 02, ALL IN TOWNSHIP 44 NORTH, RANGE 10, EAST OF THE THIRD PRINCIPAL MERIDIAN; IN LAKE COUNTY, ILLINOIS;

FURTHER EXCEPTING FROM PARCELS 1 AND 2 AFORESAID THAT PART OF THE NORTH 1/2 OF SECTION 12, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOW:

COMMENCING AT THE SOUTHEAST CORNER OF THE NORTHWEST QUARTER OF SAID SECTION 12; THENCE NORTHERLY ALONG THE EAST LINE OF SAID NORTHWEST QUARTER HAVING AN ILLINOIS COORDINATE SYSTEM (EAST ZONE) GRID BEARING OF NORTH 00 DEGREES 39 MINUTES 58 SECONDS WEST, A DISTANCE OF 40.00 FEET TO A POINT ON THE NORTH RIGHT-OF-WAY LINE OF PETERSON ROAD (A.K.A. COUNTY HIGHWAY 20) AS DEDICATED PER DOCUMENT NO. 768745 AND RECORDED SEPTEMBER 11, 1952, SAID POINT BEING THE POINT OF BEGINNING; THENCE NORTH 89 DEGREES 59 MINUTES 10 SECONDS WEST, 660.28 FEET ALONG SAID NORTH RIGHT-OF-WAY LINE TO A POINT ON THE WEST LINE OF THE EAST HALF OF THE SOUTHEAST QUARTER OF SAID NORTHWEST QUARTER; THENCE NORTH 00 DEGREES 39 MINUTES 40 SECONDS WEST, 70.00 FEET ALONG SAID WEST LINE; THENCE SOUTH 89 DEGREES 59 MINUTES 10 SECONDS EAST, 103.70 FEET ALONG A LINE 70.00 FEET NORTH OF AND PARALLEL WITH SAID NORTH RIGHT-OF-WAY LINE OF PETERSON ROAD TO A POINT ON A 11546.16 FOOT RADIUS CURVE, CONCAVE SOUTHERLY; THENCE EASTERLY ALONG SAID CURVE 471.18 FEET (THE CHORD BEARS SOUTH 88 DEGREES 49 MINUTES 01 SECONDS EAST, 471.15 FEET) TO A POINT ON A 50.00 FOOT RADIUS CURVE, CONCAVE NORTHWESTERLY; THENCE NORTHEASTERLY ALONG SAID CURVE 81.17 FEET (THE

CHORD BEARS NORTH 45 DEGREES 50 MINUTES 35 SECONDS EAST 72.55 FEET) TO A POINT ON THE WEST RIGHT-OF-WAY LINE OF HARRIS ROAD AS DEDICATED PER ORDER OF THE FREMONT TOWNSHIP HIGHWAY COMMISSIONER ON MARCH 28, 1865; THENCE SOUTH 88 DEGREES 39 MINUTES 23 SECONDS EAST, 66.04 FEET TO A POINT ON THE EAST RIGHT-OF-WAY LINE OF SAID HARRIS ROAD, SAID POINT BEING ON A 50.00 FOOT RADIUS CURVE, CONCAVE NORTHEASTERLY; THENCE SOUTHEASTERLY ALONG SAID CURVE 77.95 FEET (THE CHORD BEARS SOUTH 45 DEGREES 19 MINUTES 34 SECONDS EAST, 70.29 FEET) TO A POINT ON A LINE 100.00 FEET NORTH OF AND PARALLEL WITH THE SOUTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 12; THENCE SOUTH 89 DEGREES, 59 MINUTES 10 SECONDS EAST, 91.61 FEET ALONG SAID PARALLEL LINE; THENCE SOUTH 86 DEGREES 10 MINUTES 20 SECONDS EAST, 601.36 FEET TO A POINT ON A LINE 60.00 FEET NORTH OF AND PARALLEL WITH SAID SOUTH LINE OF THE NORTHEAST QUARTER; THENCE SOUTH 89 DEGREES 59 MINUTES 10 SECONDS EAST, 200.01 FEET ALONG SAID PARALLEL LINE; THENCE SOUTH 00 DEGREES 00 MINUTES 50 SECONDS WEST, 10.00 FEET TO THE NORTH RIGHT-OF-WAY LINE OF SAID PETERSON ROAD AS PER DOCUMENT NO. 4586501 RECORDED SEPTEMBER 26, 2000; THENCE NORTH 89 DEGREES 59 MINUTES 10 SECONDS WEST, 940.47 FEET ALONG SAID NORTH RIGHT- OF-WAY LINE TO A POINT ON SAID EAST RIGHT-OF-WAY LINE OF HARRIS ROAD; THENCE SOUTH 00 DEGREES 39 MINUTES 58 SECONDS EAST, 10.00 FEET ALONG SAID EAST RIGHT-OF-WAY LINE TO A POINT ON SAID NORTH RIGHT-OF-WAY LINE OF PETERSON ROAD DEDICATED BY SAID DOCUMENT NO. 768745; THENCE NORTH 89 DEGREES 59 MINUTES 10 SECONDS WEST, 33.00 FEET ALONG SAID NORTH RIGHT-OF-WAY LINE TO THE POINT OF BEGINNING.

PARCEL 3:

LOT 1 IN ROBERT J. MEYER'S ACRE BEING A SUBDIVISION OF PART OF EAST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 12, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED OCTOBER 27, 1956 AS DOCUMENT NO. 928535, IN LAKE COUNTY, ILLINOIS.

CONTAINING 2,832,132 SQUARE FEET (65.017 ACRES) MORE OR LESS.

Manhard CONSULTING

Civil Engineering
Surveying
Water Resources Management
Construction Management
Landscape Architecture
Land Planning

January 8, 2026

Tony Repp
Village of Libertyville
Deputy Director of Community Development
118 W Cook Ave, Libertyville, IL 60048

RE: Cursory review comments regarding 30532 & 30568 N Harris Road

Dear Mr. Repp

Please find the attached documents in the email for our submittal of Bath Concepts.
In response to your review letter dated 11-14-2025, we offer the following responses, in ***bold and italics,*** to the outstanding comments:

PLANNING DIVISION COMMENTS:

ZONING: I-1 (East of Harris Road) and O-2 (West of Harris Road)

1. **Development Review Process:** Based on the current plans, staff anticipates Plan Commission / Zoning Board of Appeals review of the following items is required:
   a. Site Plan Permit
   b. Zoning Variations (Public Hearing)
   c. Preliminary Subdivision (for all lots)
   d. Final Subdivision (for Eastern lot to be developed by BCI, including road and outlots)
   e. Final Subdivision (in future, for other lots as they may be developed further)
   f. Village Board of Trustees will review recommendations from PC/ZBA

   Response: Noted.

2. **Building Height, Zoning Code Sec. 26-7-2.5(a):** The maximum **building height** of a principal structure is 45 feet.

   COMMENT: The proposed building has a height of 51.0 feet shown on the southern façade. A variation would be required to permit this.

   Response: Noted.

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3. **Parking Setback, Zoning Code Sec. 26-7-2.5(h):** Accessory parking, provided no such parking shall be closer than **fifty (50) feet** from a lot line abutting an arterial, collector or local street or a residential district and no closer than ten (10) feet from any other lot line;

COMMENT: Current south parking lot is approximately 30 feet from property line. Same requirement exists in O-2. A variation would be required to permit the encroachment into the required setback.

Response: Noted. Please see the enclosed plans and responses to applicable standards of approval.

4. **Sign Area, 26-11-14(c)(3):** The maximum gross surface area shall not exceed thirty-two
(32) square feet.

COMMENT: Sign area exceeded. Wall sign is approximately 128 square feet. Each free standing sign has sign area of approximately 15 square feet. A variation would be required to permit the total sign area in excess of 32 square feet.

Response: Noted. Please see the enclosed plans and responses to applicable standards of approval.

5. **Free Standing Sign Height, 26-11-14(c)(4):** A freestanding sign shall not exceed six (6) feet above grade.

COMMENT: Proposal includes a free-standing sign height of just over 6.0 feet. A variation would be required to permit the free standing signs in their current form. Alternatively, consideration should be given to alter this to comply with requirement and the variation for free standing sign height would not be required.

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Response: Please see enclosed the revised plans showing proposed ground signs in compliance with this requirement.

6. **Number of Signs, 26-11-14(c)(2):** Number permitted. One (1) wall and one (1) freestanding sign for each business occupancy; provided, however, that no free-standing business sign shall be permitted on any zoning lot containing a professional directory sign or a multi-tenant sign and provided, further, only one (1) freestanding business sign shall be permitted per zoning lot.

   COMMENT: Proposal includes 2 free standing signs along Peterson Road. A variation would be required to permit the free standing signs in their current form.

   Response: Noted. Please see the enclosed plans and responses to applicable standards of approval.

7. **Perimeter Landscape, 26-13-2.2:** Every required perimeter landscaped open space shall consist of a combination of shade and ornamental trees, evergreen trees and shrubs (see figure 26-13-1). Areas not planted with trees or shrubs shall be maintained as a combination of groundcover and decorative paving material.

   COMMENT: The landscape plan notes that variations will be applied for related to various aspects of perimeter landscape which are insufficient.

   Response: Noted. Please see the enclosed landscape plans and responses to applicable standards of approval.

8. **Interior Landscape, 26-13-3.2**: Interior landscaping shall be provided for all parking lots constructed after the effective date of this chapter containing fifteen (15) or more spaces. Interior landscaping shall constitute at least ten (10) percent of the area of the parking lot. Area devoted to perimeter landscaped open space, pursuant to subsection 26- 13-3.1, shall not be considered interior landscaping.

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COMMENT: The truck storage lot to the east of the proposed building does not feature interior landscaping of 10% of total area. A variation would be required.

Response: Noted. Please see the enclosed landscape plans and responses to applicable standards of approval.

9. **Parking lot screening (east side), 26-13-3.1:**. In addition to the requirements of section 26-13-2 for perimeter landscaped open space, every parking lot shall, to the extent hereinafter specified, be buffered and screened with appropriate screening devices such as decorative walls, fences, or berms. The landscaping and screening treatment shall be designed and maintained to a height of at least six (6) feet along every lot line abutting a residential district and to a height of at least three (3) feet along every other lot line (see figure 26-13-2). For parking lot screening installed along lot lines abutting a residential district, the landscaping and screening treatment shall have a minimum height of three (3) feet at time of planting. The height of screening shall be measured from the surface of the parking lot.

   COMMENT: Screening does not appear to exist adjacent to truck lot on east side of property. A variation would be required. Staff would recommend additional efforts to screen this area, particularly to address angles in which the area is visible from Peterson Road. Contact staff to review potential solutions which do not limit future lot 2 usage.

   Response: Noted. Please see the enclosed plans and responses to applicable standards of approval.

10. **Parking lot lighting height, 26-10-1.4(d)(8)**: The maximum height of a light standard shall not exceed twenty-five (25) feet; provided, however, that in the rear one-third (⅓) of a lot abutting a Residential District, the maximum height of a light standard shall not exceed ten (10) feet and height of building-mounted light fixtures shall not exceed ten (10) feet.

    COMMENT: The building mounted lighting fixtures appear to be proposed at a height of 30 feet. A variation would be required for this configuration. Consideration should be given to a compliant design or

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alternatively one which alters the fixtures to be within the limit of a traditional light standard (25 feet).
Response: Proposed height of lighting fixtures has been reduced to comply with this requirement, as shown on the enclosed lighting plans.

11. **Trash Enclosure / Screening:** Please provide specifications for dumpster/trash compactor locations. Please confirm screening method.

Response: Please see the enclosed site plan and enclosure elevations.

12. **Additional screening:** Additional screening may be required for other ground mounted, rooftop utilities/equipment or exterior storage tanks once locations are identified.

Response: Noted.

13. **Landbanked parking:** Please provide parking narrative or study which proves that the parking within the landbanked area are not required for immediate construction/use based on expected employee/visitor counts.

Response: Please see the enclosed narrative letter and traffic study prepared by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA).

14. **Directional signage:** Please include directional sign locations, dimensions, and details within your submitted sign package.

Response: Noted. Please see the enclosed site plan and signage plans.

15. **Monument signage**: Please review freestanding sign locations to ensure no conflicts with grades or utilities.

Response: Proposed locations are not expected to conflict with grade or utilities.

Preliminary Plat of Subdivision – Please see cursory comments below regarding the Preliminary Plat.

1. The plat shows vacation of the Harris Road Right-of-Way (ROW) for construction of a private roadway. Staff finds this approach generally acceptable, but it should be verified with LCDOT if the proposed

boundary of Lot 5 adjacent to Peterson Rd is appropriate. Since all Village right of way shall be vacated, it's anticipated Lot 5 should be expanded to include the entire approach to the private road.

Response: Per conversation with LCDOT

2. A blanket public utility easement should be reserved throughout the vacated ROW. It should also be determined if any existing easements as shown within the right of way should be vacated or amended.

Response: A blanket public utility easement will be used.

3. Staff notes the presence of a JAWA distribution main within the existing ROW, along with gas main and overhead electric. The Developer shall coordinate easement requirements with JAWA and any other applicable utility company / agency.

Response: Coordination with JAWA is ongoing.

4. The Village will require both a dedicated "Village Watermain Easement" and "Village Sanitary Sewer Easement" over public utilities that will be owned and maintained by the Village. (see Utility Plan Markup attachment for proposed limits).

Response: Easements added.

5. The Village will require a "Private Watermain Easement" over the private watermain loops. Private water main will need to be permitted as Village main with the IEPA, but an agreement would be established to delegate ownership and maintenance to the property owner (see the attached Utility Plan Markup attachment for proposed limits).

Response: Easements added

6. It is anticipated that watermain easements (public and private) should be delineated only over watermain that will be constructed as part of this initial construction phase, but it is understood that additional easements will need to be provided during future construction phases. The obligation for providing such easements over Lots 2 and 3 would need to be specified in the applicable agreements and subdivision documents.

Response: Understood.

7. A Stormwater Management Easement will be required over all detention basins, storm sewer, and overflow routes.

Response: Easements added.

7. Plat certificates and easement provisions are typically reviewed in detail at time of Final Engineering submittals. Engineering staff will provide preferred Easement Provisions Language upon request. Please contact engineering staff directly.

Response: Understood

9. Lots 4 and 5 should be labeled as outlots so as not to create non-conforming lots in the I-1 district.

Response: Revised to Outlot A and Outlot B

10. Cross-access easement for use of Harris Road should be included on plat for use by any adjacent future land owners of lot 2, 3, 4 or 5.

Response: Easement added.

11. A document outlining access and maintenance permissions/requirements should be created regarding Harris Road for use after vacation. This would allow for transfer of such rights or requirements if any adjacent properties are sold to a separate entity. Similar consideration should be given to lot 2 to ensure shared access/maintenance of the detention system in the event of sale of the primary lot 1 owner.

Response: Please see this document as part of this submittal.

12. Remove building setback lines from plat.

Response: Building setback lines removed

ENGINEERING DIVISION COMMENTS:

1. **Legal Agreements –** It should be noted that the proposed development property is subject to multiple existing agreements (Annexation

Agreement, Recapture Agreements, etc.) which involve other jurisdictional agencies, such as Lake County Division of Transportation (LCDOT). The comments within this letter attempt to provide the applicant with useful information and context based on the Village's latest records, but are subject to change pending legal review and correspondence with other jurisdictional agencies.

2. **Recapture Fees (Village - Water and Sewer)** – Please see the attached memorandum detailing Village Sewer & Water Recapture fees. Per this memo, a preliminary estimate of the fee due (calculated based on a payment date of June 1, 2026), is $484,360.75. This amount was calculated for only the parcels known as "Meyer Farm" located within Village of Libertyville limits, totaling approximately 61.7 acres.

3. **Recapture Fees (Lake County - Peterson Road)** – It is anticipated that Peterson Road Improvement Fees will be owed in accordance with the 2009 Central Lake County Area Transportation Improvement Intergovernmental Agreement. Attached for reference is EXHIBIT A to the agreement, prepared by LCDOT. EXHIBIT A shows the Highway Improvement Areas that are subject to fees under the agreement, and this includes the three (3) subject parcels currently located within Village of Libertyville limits, totaling approximately 61.7 acres. These parcels are within the area labeled as "Improvement Area 5" with an associated fee of $8,120 per acre. Based on the figures in the 2009 agreement, an initial calculation of the fee due is $501,004. However, please be advised that the agreement provides for annual fee adjustments, and a current estimate of the fee would need to be provided by LCDOT.

Note: LCDOT's "EXHIBIT A" does not identify fees for the parcels currently located within the Village of Grayslake.

4. **Stormwater Detention** – Stormwater detention will be required for the development in accordance with the Lake County Watershed Development Ordinance. It is acknowledged that the applicant previously provided a Preliminary Stormwater Management Report based on a concept development that included Grayslake parcels. In conjunction with Preliminary Engineering submittals for the revised scope of the development, a new Preliminary Stormwater Management Report should be provided for review. Full Village review will proceed only after a formal application submittal has been made, which will require the

establishment of a reimbursement of fees agreement. That agreement will allow for the Village's WDO Enforcement Officer to complete a review the stormwater plans and calculations.

***Response**: A revised stormwater report will be included as part of this submittal.*

5. **Utility Design and Layout** – Please see the attached markup of the proposed utility plan, which shows recommended concepts for revising the proposed watermain and sanitary sewer, including:

   a. All watermain is preferred to be located within an asphalt drive aisle and away from all other utilities for easier maintenance access, whenever feasible.

   b. Public utilities should be at least 20' from the face of the building.

   c. The attached Utility Plan markup shows a concept of what watermains will be considered "Public Main" and what will be considered "Private Main."

   d. Suggested valve locations have been indicated on the attached markup for your consideration. Valve placement should meet Village Design Standards and should allow for isolation as needed for future development of Lot 2 and Lot 3.

   e. Hydrants in the truck dock area should be protected by heavy duty bollards.

   f. Consider stubbing water and sanitary sewer (in addition to storm sewer) across the private road (and JAWA distribution main) to allow for the future development of Lot 3 to be less complex.

   g. Also consider the possibility of constructing all of the public water main (as depicted in the exhibit referenced above) during Lot 1 development, which may depend on variables anticipated for the Lot 3 improvements. If the entire public water main is not constructed initially, acceptance of portions of the public water main may be conditional on continued maintenance by the property owner until such time as the complete public water main is constructed and accepted.

   h. The Applicant may wish to identify potential access points for Lot 3 from the new private roadway, for verification that they do not conflict with the proposed street lighting layout.

Response:

A. All water main will be placed under pavement. Due to this our water main layout differs from what you suggested at the northwest corner of the building. Instead of routing through the grass, land banked parking the water main will be in the drive aisle.

B. All public utilities have been adjusted to be at least 20' from the building.

C. Understood.

D. Valve vaults have been added to this round of plans.

E. Bollards have been added around the hydrants

F. The water main and sanitary sewer have been stubbed to the property line.

G. This will be taken into consideration.

H. This will be taken into consideration.

6. **Water and Sanitary Sewer Demand** – The Applicant should provide estimates of water and sanitary sewer demand for the Libertyville development parcels, in order for the Village to review and identify any concerns related to additional demand on these systems. At a minimum, the submittal should include preliminary Population Equivalent (PE) calculations and estimated fire flow requirements. It is recommended that these estimates be conservative and account for the most intensive use(s) that would be likely to occupy the Libertyville parcels.

8. **Wetlands** – The Lake County Wetland Inventory shows the presence of wetland on/near the subject property. Applicable wetland permits (or at minimum, a Letter of No Impact) from Lake County Stormwater Management Commission will be required. Please note that the Village is not certified to perform Wetland reviews, and therefore all

wetland permitting will be through Lake County SMC (and USACE if applicable).

Response: Preliminary wetland report has been provided as a part of this submittal. No wetlands were determined to be on site.

9. **Traffic** – It is acknowledged that a traffic study had previously been provided to the Village based on a concept development that included Grayslake parcels. In conjunction with any formal preliminary plat request for the revised scope of the development, a revised traffic study should be provided for review. Upon formal application submittal and establishment of a reimbursement of fees agreement, the Village's Traffic Consultant will complete a review of the traffic study.

9. **Engineering Design Standards –** While this cursory review is meant to focus on the "big picture" items, the following detailed items were noted by staff during review of the preliminary engineering plans:

a. Sheets 20-23 include outdated Village details. Please note that PDF and DWG versions of all village details are available online at: https://www.libertyville.com/1156/Engineering-Design-and-Construction-Stan

b. At the hyperlink above, applicants can also find the full "Engineering Design and Construction Standards", which will be applicable to much of this development's infrastructure.

c. "Standard Duty Pavement" should have a Structural Number (SN) calculation of 2.5 minimum per Village standards (*see Section 7.3.1 of the "Engineering Design and Construction Standards")*. This comment is for reference only, and this item can be addressed at the time of permit submittal.

Response: Details and specifications have been updated. Item C will be addressed with any formal submittal.

BUILDING DIVISION COMMENTS:

1. Per the Zoning Code (10-1.4d.), no area of the parking lot, excluding access ramps, shall have a slope in excess of five percent (5%). No ramp shall have a slope in excess of eight percent (8%).

Response: No area of the parking lot is designed with a slope over 5%.

2. The land-banked parking lot on this property indicates a total of 236 parking stalls. Seven (7) of those stalls shall be accessible. Indicate accessible stalls and aisle widths on the site drawing throughout the lot. Dimension accordingly. 2018 IAC 208.2, 502.2 & 502.3.1

Response: Handicap accessible stalls are now shown.

3. The accessible aisle and parking stall shall have a maximum 1:48 (2%) surface slope. 2018 IAC 502.4

Response: No ADA spaces are designed with over a 2% slope.

FIRE DEPARTMENT COMMENTS:

At application for construction the following will be required:

1. The location of the fire protection equipment. Note the following requirements:
   a. The fire control room must contain all fire protection equipment unless otherwise approved by the fire prevention bureau.
   b. The fire control room must be accessible to the Libertyville Ladder Tower.
   c. The fire control room must be located at grade and have direct, unobstructed access from the exterior via a hard path.
   d. There shall be an access point into the rest of the building near the fire control room.
   e. A hydrant is required within 150 feet of the Fire Department Connection, which is located at the fire control room.

Response:
A. See architectural plans

B. Please see the auto turn exhibit which shows the truck specifications used.

C. A sidewalk to access the fire control room has been added.

D. See architectural plans

E. There is a hydrant about 35' from the fire control room.

2. Autoturn diagrams showing the Libertyville Ladder Tower can navigate on and off the site and to the fire control room in a compliant manner.

Response: Please see the auto turn exhibit included in this submittal.

If you have any questions or need any additional information, please contact us.

Yours Truly,
MANHARD CONSULTING, LTD.

John S. Everard, P.E.

MELTZER, PURTILL & STELLE LLC

ATTORNEYS AT LAW

File Number: 36446-002
Direct Dial: (312) 461-4336
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January 9, 2026

Tony Repp, Deputy Director
Community Development Department
Village of Libertyville
325 N. Milwaukee Avenue, Ste. 203
Libertyville, Illinois 60048

RE: 30532-30568 N. Harris Rd., Libertyville, IL – New Industrial Facility & Private Roadway

Dear Mr. Repp,

We are pleased to submit this proposal on behalf of Aston Villa Land Partners LLC, the owner ("Owner") of the property at 30568 N. Harris Road, Libertyville, Illinois (the "Property"), to construct a new industrial building measuring approximately 600,000 square feet in size and accessory off-street parking (the "Facility") along with other substantial site improvements such as new stormwater management facilities and infrastructure, a northward extension of Harris Road, and landscaping plantings and improvements. The Property is approximately 65 acres in size and is mostly unimproved land in its existing condition, except for a single-family residence with several farming structures and silos situated along the south property line at the northwest corner of the intersection of Harris and Peterson Roads. Once completed, the Facility will serve as the new home for Bath Concepts Industries, LLC ("Bath Concepts"), which is a manufacturer high-quality showers, tubs, wall systems and bath accessories and is currently located in the Village at 1800 Industrial Drive. In furtherance of this proposal, we are submitting the enclosed application (the "Application") requesting: (1) site plan approval, (2) approval of certain variations from the Village's Zoning Code (the "Zoning Code") as set forth below, (3) approval of a preliminary plat of subdivision ("Plat of Subdivision"), and (4) all other forms of relief deemed necessary or desirable by the Owner, Village staff and Bath Concepts.

Bath Concepts has operated in its current location in the Village for nearly 10 years and has grown substantially during that time, from approximately 77 employees in 2016 to more than 400 employees in 2025. Due to this rapid growth, Bath Concepts acquired the Property in December 2022 as it offered the unique opportunity for Bath Concepts to expand its operations to adequately handle increased demand, while remaining in Libertyville where many of its current employees reside. This expansion will enable Bath Concepts to increase employment and purchase new machinery required to perform additional automated functions in-house, which are currently outsourced and shipped to its current location.

If approved, the Facility will be constructed substantially in accordance with the plans attached to the Application (the "Submitted Plans"). The Facility will be comprised of approximately 52,526 square feet of office space, 143,000 square feet of production space and 400,639 square feet of warehouse space. It will be serviced by 312 parking spaces, with 244 landbanked parking spaces reserved for future use if needed, bringing the total number of available parking spaces on the Property to 556 spaces.[1] The Facility will also feature a truck staging lot on its east side that will contain 74 new trailer positions opposite 50 exterior loading docks and 13 drive-in doors. As Bath Concepts owns and operates its own fleet of trucks to transport goods around the country, these improvements will allow it to expand its truck fleet to keep pace with the continued growth in production. We have also included with the Application a copy of the traffic impact study prepared by Kenig, Lindgren, O'Hara, Aboona, Inc. ("KLOA") dated January 7, 2026, which determined that the proposed parking and truck staging spaces are sufficient to accommodate the anticipated needs of the Facility, and that Peterson Road is able to adequately accommodate the projected traffic generated by the Facility and by improvement of the remaining buildable lots identified on the Plat of Subdivision.

In accordance with the Submitted Plans, the project design will require Village approval of the following variations from the Zoning Code regulations:

1) Section 26-7-2.5(a) to increase the maximum building height from 45 feet to 51 feet;
2) Section 26-7-2.5(h) to reduce the required parking setback along Peterson Road by 6 inches, from 50 feet to 49.5 feet;
3) Section 26-13-2.2 to reduce the minimum perimeter landscape requirement along the east property line in accordance with the landscape plans submitted to staff;
4) Section 26-11-14(c)(3) to allow a 128-square-foot wall sign on the south building façade;
5) Section 26-11-14(c)(2) to allow two (2) ground signs along the south property line;
6) Section 26-13-3.2 to reduce the interior landscape requirement for the truck staging lot on the east side of the Facility from 10% to 0%; and
7) Section 26-13-3.1 to remove the requirement for landscape screening along the east truck staging lot.

We have included written responses to the standards of approval for each of the above variations with the Application submitted to staff.

This project will allow the Owner to transform the Property from its current vacant state to a cohesive and state-of-the-art industrial development for Bath Concepts' use, which will benefit the Village in several respects. First, the Facility and associated improvements will significantly increase the property taxes generated by the Property following completion of the Facility, which will continue to increase following development of the parcels to the east and west. Second, it will allow Bath Concepts to continue to expand its operations in the Village and enable it to hire upwards of 100 new employees over the first five years of operation, for a total of over 500

[1] The proposed number of parking spaces is expected to exceed the demand generated by the new Facility. The 411 current employees are not all on site at the same time and work in staggered shifts based on their roles:

- The production team is divided into three shifts: (i) Tuesday-Friday, 4:00am to 2:00pm; (ii) Tuesday-Friday, 2:30pm to 12:30am; and (iii) Saturday-Monday, 4:00am to 4:00pm.
- The fulfillment team is divided into two shifts: (i) Friday 6:00am-2:00pm; and (ii) Monday to Friday, 2:30pm-10:30pm.
- General office employees will work typical office hours: Monday to Friday 7:00am to 4:30pm.

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employees that will live in or travel to the Village, increasing sales for nearby gas stations, businesses and restaurants as a result. Finally, Bath Concepts will contribute substantially to the Village's sales tax base with over $250,000,000 in gross sales in 2024, which success is projected to be repeated again in 2025. In short, this project will strengthen the Village's employment base and, once it is fully occupied, will generate significant property and sales tax revenue for the Village and other local taxing jurisdictions on an annual and recurring basis.

We look forward to working with the Village on all aspects of this exciting development proposal. Please feel free to contact us if you have any questions or if any additional information is needed at this time.

Sincerely,
MELTZER, PURTILL & STELLE LLC

Brendan G. Penny

CC: *Scott Rosenbach, via email*
Jim Brucato, via email
Jim Greco, via email
Scott Hargadon, via email

RESPONSES TO STANDARDS FOR VARIATIONS
30532-30568 N. Harris Road

1. Variation from Section 26-7-2.5(a) to increase maximum allowable building height in the I-1 Limited Industrial District from 45 feet to 51 feet.

a. General Standard. No variation shall be granted pursuant to this Section 16-8 unless the applicant shall establish that carrying out the strict letter of the provisions of this Code would create a particular hardship or a practical difficulty. Such a showing shall require proof that the variation being sought satisfies each of the standards set forth in this Section 16-8.7.

Response: Carrying out the strict letter of the Village's Zoning Code (the "Zoning Code") would create a particular hardship for the property owner ("Owner") and for the intended user, Bath Concepts Industries, LLC ("Bath Concepts"). Restricting the maximum building height to 45 feet would significantly reduce the internal vertical space within the proposed approximately 600,000-square-foot facility (the "Facility"), which is necessary to accommodate second floor office use and the machinery and equipment necessary for Bath Concepts' proposed use.

b. Unique Physical Condition. The subject lot is exceptional as compared to other lots subject to the same provision by reason of a unique physical condition, including the presence of an existing use, structure, fence or sign, whether conforming or nonconforming; irregular or substandard shape or size; exceptional topographical features; or other extraordinary physical conditions peculiar to and inherent in the subject lot that amount to more than a mere inconvenience to the owner and that relate to or arise out of the lot or its existing development rather than the personal situation of the current owner of the lot.

Response: The subject property is exceptional compared to other properties due to its location, irregular shape, and the fact that it is bordered by unimproved right-of-way to the west, Peterson Road to the south, and a railroad to the east. Because of these constraints and the shape of the lot, the proposed Facility has been designed with a limited building footprint to ensure that it fits in the available space on site and leaves adequate open space for required landscape, roadway and stormwater management improvements.

c. Not Self-Created. The aforesaid unique physical condition is not the result of any action or inaction of the owner or its predecessors in title, other than the construction of structures that were lawful at the time of such construction, and existed at the time of the enactment of the provisions from which a variation is sought or was created by as a result of natural forces or governmental action, other than the adoption of this Code.

Response: Site conditions are a result of prior development surrounding the subject property and are not a result of the actions or inactions of the Owner or its predecessors in title.

d. **Denied Substantial Rights. The carrying out of the strict letter of the provision from which a variation is sought would deprive the owner of the subject lot of substantial rights commonly enjoyed by owners of other lots subject to the same provision.**

Response: If the strict language of Zoning Code was enforced, it would prevent the Owner from developing the subject property for its intended use, which is otherwise permitted in the I-1 Limited Industrial District ("I-1 District").

e. **Not Merely Special Privilege. The alleged hardship or difficulty is neither merely the inability of the owner or occupant to enjoy some special privilege or additional right not available to owners or occupants of other lots subject to the same provision, nor merely the inability of the owner to make more money from the use of the subject lot; provided, however, that where the standards set out in this Section 16-8.7 are met, the existence of an economic hardship shall not be a prerequisite to the grant of a variation.**

Response: The requested variation will not provide the Owner with any special right or privilege unavailable to other owners of property in the I-1 District, nor will it make the Owner more money.

f. **Code and Plan Purposes. The variation would not result in a use or development of the subject lot that would be not in harmony with the general and specific purposes for which this Code and the provision from which a variation is sought were enacted or the general purpose and intent of the Official Comprehensive Plan.**

Response: The proposed use is permitted in the I-1 District and development of the site is designed to conform with the purposes of the Zoning Code and the Village's Comprehensive Plan. Moreover, the adjacent property to the west of the proposed Facility is zoned in the O-2 Office, Manufacturing and Distribution Park District (the "O2 District") which permits a maximum building height of 75 feet or 5 stories. Therefore, the proposed height of the Facility will be consistent with the anticipated development of that adjacent lot.

g. **Essential Elements of the Area. The variation would not result in a use or development on the subject lot that:**

1) **Would be materially detrimental to the public welfare or materially injurious to the enjoyment, use, development, or value of property or improvements permitted in the vicinity; or**

Response: The requested variation will not be detrimental to the public welfare or materially injurious to the development, enjoyment, use, or value of nearby properties or improvements.

2) **Would materially impair an adequate supply of light and air to the properties and improvements in the vicinity; or**

Response: The proposed Facility will not materially impair the supply of light and air to nearby properties and improvements. It will be built near the center of the subject property, far distance from the nearest adjacent developed property.

3) Would substantially increase congestion in the public streets due to traffic or parking; or

Response: Granting this variation will not increase traffic or parking on the subject property and therefore will cause a substantial increase in congestion on public streets.

4) Would unduly increase the danger of flood or fire; or

Response: The proposed Facility will contain a sprinkler system and meet all applicable building code requirements for fire suppression. The site will also feature various stormwater management improvements, as identified on the civil engineering plans prepared by Manhard Consultants dated most recently as of December 1, 2025. These improvements are designed to accommodate the drainage needs of the site following completion of the proposed Facility, private roadway and future development on the site.

5) Would unduly tax public utilities and facilities in the area; or

Response: The requested variation will not unduly tax existing public utilities and facilities in the area.

6) Would endanger the public health or safety.

Response: The requested variation will not endanger public health or safety for the above reasons.

h. No Other Remedy. There is no means other than the requested variation by which the alleged hardship or difficulty can be avoided or remedied to a degree sufficient to permit a reasonable use of the subject lot.

Response: There are no means other than the requested variation to alleviate, avoid or remedy the hardship to permit reasonable use of the subject property as proposed.

2. Variation from Section 26-7-2.5(h) to reduce the minimum parking setback from a lot line abutting an arterials street by approximately 9 feet, from 50 feet to 41 feet.

a. General Standard. No variation shall be granted pursuant to this Section 16-8 unless the applicant shall establish that carrying out the strict letter of the provisions of this Code would create a particular hardship or a practical difficulty. Such a showing shall require proof that the variation being sought satisfies each of the standards set forth in this Section 16-8.7.

Response: Carrying out the strict letter of the Zoning Code would create a practical difficulty for the Owner and Bath Concepts because compliance would require removal of a significant portion of the south parking lot. This parking lot and the associated paved throughway are necessary for off-street parking near the south entrance and for internal circulation to the truck staging lot on the east side of the proposed Facility (the "Truck Lot").

b. Unique Physical Condition. The subject lot is exceptional as compared to other lots subject to the same provision by reason of a unique physical condition, including the presence of an existing use, structure, fence or sign, whether conforming or nonconforming; irregular or substandard shape or size; exceptional topographical features; or other extraordinary physical conditions peculiar to and inherent in the subject lot that amount to more than a mere inconvenience to the owner and that relate to or arise out of the lot or its existing development rather than the personal situation of the current owner of the lot.

Response: The subject property is exceptional compared to other properties given its location, shape, and the fact that it is bordered by unimproved right-of-way to the west, Peterson Road to the south, and a railroad to the east. The Facility has been positioned near the center of the site to allow for construction of adequate off-street parking and stormwater management improvements on the east and north portions of the lot. The Facility cannot be shifted north, away from Peterson Road, as that would impact construction of these accessory improvements.

c. Not Self-Created. The aforesaid unique physical condition is not the result of any action or inaction of the owner or its predecessors in title, other than the construction of structures that were lawful at the time of such construction, and existed at the time of the enactment of the provisions from which a variation is sought or was created by as a result of natural forces or governmental action, other than the adoption of this Code.

Response: The site conditions are a result of its proximity to Peterson Road and prior development of surrounding properties and are not a result of the actions or inactions of the Owner or its predecessors in title.

d. Denied Substantial Rights. The carrying out of the strict letter of the provision from which a variation is sought would deprive the owner of the subject lot of substantial rights commonly enjoyed by owners of other lots subject to the same provision.

Response: If the strict language of the Zoning Code was enforced, it would require removal of off-street parking stalls and the paved throughway to the south of the proposed Facility. These spaces are necessary to meet the parking demands of the Facility.

e. Not Merely Special Privilege. The alleged hardship or difficulty is neither merely the inability of the owner or occupant to enjoy some special privilege or additional right not available to owners or occupants of other lots subject to the same provision, nor merely the inability of the owner to make more money from the use of the subject lot; provided, however, that where the standards set out in this Section 16-8.7 are met, the existence of an economic hardship shall not be a prerequisite to the grant of a variation.

Response: The requested variation will not provide the Owner with any special right or privilege not available to other owners of property in the I-1 District. It is not requested to increase the value of the subject property or for the Owner's monetary gain, but to ensure that site features adequate parking and internal traffic circulation for the proposed use.

f. Code and Plan Purposes. The variation would not result in a use or development of the subject lot that would be not in harmony with the general and specific purposes for which this Code and the provision from which a variation is sought were enacted or the general purpose and intent of the Official Comprehensive Plan.

Response: Granting this variation would not result in a use or development that is not in harmony with the purposes of the Zoning Code or the Village's Comprehensive Plan. It will instead promote construction of a cohesive development in a well-suited area of the Village identified for industrial use and surrounded by existing commercial and industrial developments.

g. Essential Elements of the Area. The variation would not result in a use or development on the subject lot that:

1) Would be materially detrimental to the public welfare or materially injurious to the enjoyment, use, development, or value of property or improvements permitted in the vicinity; or

Response: The requested variation will not be detrimental to the public welfare or materially injurious to the development, enjoyment, use, or value of nearby properties or improvements.

2) Would materially impair an adequate supply of light and air to the properties and improvements in the vicinity; or

Response: The proposed parking lot will not materially impair adequate supply of light and air to nearby properties or improvements.

3) Would substantially increase congestion in the public streets due to traffic or parking; or

Response: The proposed parking lot will provide necessary parking on the south side of the building and promote interconnectivity throughout the site, enhancing internal traffic circulation and alleviate negative impacts to nearby roadways like Peterson Road.

4) Would unduly increase the danger of flood or fire; or
Response: The proposed parking lot will not unduly increase the danger of flood or fire.

5) Would unduly tax public utilities and facilities in the area; or
Response: The proposed parking lot will not unduly tax existing public utilities and facilities in the area.

6) Would endanger the public health or safety.
Response: The proposed parking lot will not endanger public health or safety for the reasons set forth above.

h. No Other Remedy. There is no means other than the requested variation by which the alleged hardship or difficulty can be avoided or remedied to a degree sufficient to permit a reasonable use of the subject lot.
Response: There are no means other than the requested variation to alleviate, avoid or remedy the hardship to permit reasonable use of the subject property as proposed and comply with the off-street parking requirements under the Zoning Code.

3. <u>Variation from Section 26-13-2.2 to reduce requirements for perimeter landscape open space requirements along east property line.</u>

a. <u>General Standard</u>. No variation shall be granted pursuant to this Section 16-8 unless the applicant shall establish that carrying out the strict letter of the provisions of this Code would create a particular hardship or a practical difficulty. Such a showing shall require proof that the variation being sought satisfies each of the standards set forth in this Section 16-8.7.

<u>Response</u>: Carrying out the strict letter of the Zoning Code would create a practical hardship for the Owner as it would require additional landscape plantings and maintenance along the east property line which already contains a dense line of trees, shrubs and other vegetation. Beyond the property line to the east is a railroad which is screened on both sides by existing vegetation. Requiring more plantings in this area would result in a dense line of vegetation that greatly exceeds the level of screening contemplated by the Zoning Code and would make the area much more difficult and costly to maintain.

b. <u>Unique Physical Condition</u>. The subject lot is exceptional as compared to other lots subject to the same provision by reason of a unique physical condition, including the presence of an existing use, structure, fence or sign, whether conforming or nonconforming; irregular or substandard shape or size; exceptional topographical features; or other extraordinary physical conditions peculiar to and inherent in the subject lot that amount to more than a mere inconvenience to the owner and that relate to or arise out of the lot or its existing development rather than the personal situation of the current owner of the lot.

<u>Response</u>: The subject property is exceptional compared to other similarly situated properties given the fact that it is bordered by the railroad to the east which is already densely screened on both sides. This creates a situation where new landscape plantings would be redundant and make the area more difficult to maintain.

c. <u>Not Self-Created</u>. The aforesaid unique physical condition is not the result of any action or inaction of the owner or its predecessors in title, other than the construction of structures that were lawful at the time of such construction, and existed at the time of the enactment of the provisions from which a variation is sought or was created by as a result of natural forces or governmental action, other than the adoption of this Code.

<u>Response</u>: The aforesaid conditions have existed for many years and are not a result of the actions or inactions of the Owner or its predecessors in title.

d. <u>Denied Substantial Rights</u>. The carrying out of the strict letter of the provision from which a variation is sought would deprive the owner of the subject lot of substantial rights commonly enjoyed by owners of other lots subject to the same provision.

<u>Response</u>: If the language of the Zoning Code was strictly enforced, it would require substantial new plantings along the east property line where vegetative screening already

exists in abundance. This would impose additional hardship on the Owner in the form of increased initial planting and ongoing maintenance costs.

e. **Not Merely Special Privilege. The alleged hardship or difficulty is neither merely the inability of the owner or occupant to enjoy some special privilege or additional right not available to owners or occupants of other lots subject to the same provision, nor merely the inability of the owner to make more money from the use of the subject lot; provided, however, that where the standards set out in this Section 16-8.7 are met, the existence of an economic hardship shall not be a prerequisite to the grant of a variation.**
Response: The requested variation will not provide the Owner with any special right or privilege not available to other owners of property in the I-1 District. This variation is not requested to increase the value of the property or for monetary gain.

f. **Code and Plan Purposes. The variation would not result in a use or development of the subject lot that would be not in harmony with the general and specific purposes for which this Code and the provision from which a variation is sought were enacted or the general purpose and intent of the Official Comprehensive Plan.**
Response: Granting this variation would not result in a use or development that is not in harmony with the purposes of the Zoning Code or the Village's Comprehensive Plan. It will instead promote development of a cohesive industrial building in a well-suited area of the Village that is surrounded by existing commercial and industrial developments.

g. **Essential Elements of the Area. The variation would not result in a use or development on the subject lot that:**

1) **Would be materially detrimental to the public welfare or materially injurious to the enjoyment, use, development, or value of property or improvements permitted in the vicinity; or**
Response: The requested variation will not be detrimental to the public welfare or materially injurious to the development, enjoyment, use, or value of nearby properties or improvements.

2) **Would materially impair an adequate supply of light and air to the properties and improvements in the vicinity; or**
Response: The requested variation will not materially impair adequate supply of light and air to nearby properties or improvements. Reducing the number of new plantings along the east property line will maintain the present flow of light and air to adjacent properties to the east.

3) **Would substantially increase congestion in the public streets due to traffic or parking; or**
Response: The requested variation will not increase congestion in public streets.

4) **Would unduly increase the danger of flood or fire; or**

Response: The requested variation will not unduly increase the danger of flood or fire.

5) Would unduly tax public utilities and facilities in the area; or
Response: The requested variation will not unduly tax existing public utilities and facilities in the area.

6) Would endanger the public health or safety.
Response: The requested variation will not endanger public health or safety for the reasons set forth above.

h. No Other Remedy. There is no means other than the requested variation by which the alleged hardship or difficulty can be avoided or remedied to a degree sufficient to permit a reasonable use of the subject lot.
Response: There are no means other than the requested variation to alleviate, avoid or remedy the identified difficulty.

4. **<u>Variation from Section 26-11-14(c)(3) to increase the maximum allowable gross surface area for a wall sign from 32 square feet to 128 square feet.</u>**

a. **<u>General Standard</u>. No variation shall be granted pursuant to this Section 16-8 unless the applicant shall establish that carrying out the strict letter of the provisions of this Code would create a particular hardship or a practical difficulty. Such a showing shall require proof that the variation being sought satisfies each of the standards set forth in this Section 16-8.7.**
<u>Response</u>: Carrying out the strict letter of the Zoning Code would create a particular hardship for the Owner because it would limit the size of the wall sign for the Facility to just 32 square feet which would detract from the exterior design of the building and would be extremely difficult—if not impossible—to identify from Peterson Road.

b. **<u>Unique Physical Condition</u>. The subject lot is exceptional as compared to other lots subject to the same provision by reason of a unique physical condition, including the presence of an existing use, structure, fence or sign, whether conforming or nonconforming; irregular or substandard shape or size; exceptional topographical features; or other extraordinary physical conditions peculiar to and inherent in the subject lot that amount to more than a mere inconvenience to the owner and that relate to or arise out of the lot or its existing development rather than the personal situation of the current owner of the lot.**
<u>Response</u>: The subject property is exceptional compared to other properties given its size, lot depth and proximity to Peterson Road. The lot depth allows the proposed building to be set further back from Peterson Road, which softens the impact of the Facility on that roadway but also significantly reduces the visibility of all signage on the site.

c. **<u>Not Self-Created</u>. The aforesaid unique physical condition is not the result of any action or inaction of the owner or its predecessors in title, other than the construction of structures that were lawful at the time of such construction, and existed at the time of the enactment of the provisions from which a variation is sought or was created by as a result of natural forces or governmental action, other than the adoption of this Code.**
<u>Response</u>: The aforesaid conditions are not a result of the actions or inactions of the Owner or its predecessors in title, but rather of geographic location and proximity to Peterson Road.

d. **<u>Denied Substantial Rights</u>. The carrying out of the strict letter of the provision from which a variation is sought would deprive the owner of the subject lot of substantial rights commonly enjoyed by owners of other lots subject to the same provision.**
<u>Response</u>: If the language of the Zoning Code was strictly enforced, it would result in signage that is inadequate for the size of the proposed Facility and largely invisible from Peterson Road.

e. **Not Merely Special Privilege. The alleged hardship or difficulty is neither merely the inability of the owner or occupant to enjoy some special privilege or additional right not available to owners or occupants of other lots subject to the same provision, nor merely the inability of the owner to make more money from the use of the subject lot; provided, however, that where the standards set out in this Section 16-8.7 are met, the existence of an economic hardship shall not be a prerequisite to the grant of a variation.**

Response: The requested variation will not provide the Owner with any special right or privilege not available to other owners of property in the I-1 District, nor will it increase the value of the property or result in monetary gain. This variation is requested to ensure that the signage on site is functional and clearly visible from Peterson Road.

f. **Code and Plan Purposes. The variation would not result in a use or development of the subject lot that would be not in harmony with the general and specific purposes for which this Code and the provision from which a variation is sought were enacted or the general purpose and intent of the Official Comprehensive Plan.**

Response: Granting this variation would not result in a use or development that is not in harmony with the purposes of the Zoning Code or the Village's Comprehensive Plan. It will instead promote development of a state-of-the-art industrial building in a well-suited area of the Village that is designated for industrial use and surrounded by existing commercial and industrial developments. The proposed signage was discussed during the preliminary development meeting between the Owner and Village staff and all agreed that applicable sign restrictions would likely be insufficient for the proposed Facility, so a variation would be necessary.

g. **Essential Elements of the Area. The variation would not result in a use or development on the subject lot that:**

1) **Would be materially detrimental to the public welfare or materially injurious to the enjoyment, use, development, or value of property or improvements permitted in the vicinity; or**

Response: The proposed wall sign will not be detrimental to the public welfare or materially injurious to the development, enjoyment, use, or value of nearby properties or improvements.

2) **Would materially impair an adequate supply of light and air to the properties and improvements in the vicinity; or**

Response: The proposed wall sign will not materially impair adequate supply of light and air to nearby properties or improvements.

3) **Would substantially increase congestion in the public streets due to traffic or parking; or**

Response: The proposed wall sign will not increase congestion in public streets due to traffic or parking.

4) **Would unduly increase the danger of flood or fire; or**

Response: The proposed wall sign will not unduly increase the danger of flood or fire.

5) Would unduly tax public utilities and facilities in the area; or
Response: The proposed wall sign will not unduly tax existing public utilities and facilities in the area.

6) Would endanger the public health or safety.
Response: The proposed wall sign will not endanger public health or safety for the reasons set forth above.

h. No Other Remedy. There is no means other than the requested variation by which the alleged hardship or difficulty can be avoided or remedied to a degree sufficient to permit a reasonable use of the subject lot.
Response: There are no means other than the requested variation to alleviate, avoid or remedy the hardship.

5. <u>Variation from Section 26-11-14(c)(2) to allow two (2) total ground signs on the subject property.</u>

a. <u>General Standard</u>. No variation shall be granted pursuant to this Section 16-8 unless the applicant shall establish that carrying out the strict letter of the provisions of this Code would create a particular hardship or a practical difficulty. Such a showing shall require proof that the variation being sought satisfies each of the standards set forth in this Section 16-8.7.

<u>Response</u>: Carrying out the strict letter of the Zoning Code would create a practical difficulty for the Owner. The subject property is approximately 63 acres in size and bordered to the south by Peterson Road and further to the west by Midlothian Road. Additionally, the Owner is proposing to subdivide the entirety of the subject property into five lots (3 buildable lots and two outlots) for possible future expansion of the Bath Concepts building or development by additional third-party user. Given the size of the subject property, its proximity to two arterial roadways and the potential for multiple industrial/office/manufacturing users on the site, one ground sign would significantly reduce the visibility of all users listed on the sign. Two ground signs are appropriate for developments of this size and, given the overall size of the subject property, can be installed without cluttering the property line along Peterson Road.

b. <u>Unique Physical Condition</u>. The subject lot is exceptional as compared to other lots subject to the same provision by reason of a unique physical condition, including the presence of an existing use, structure, fence or sign, whether conforming or nonconforming; irregular or substandard shape or size; exceptional topographical features; or other extraordinary physical conditions peculiar to and inherent in the subject lot that amount to more than a mere inconvenience to the owner and that relate to or arise out of the lot or its existing development rather than the personal situation of the current owner of the lot.

<u>Response</u>: The subject property is exceptional compared to other properties given its size and proximity to Peterson and Midlothian Roads to the south and west. Additionally, the private extension of Harris Road and new entrance to the Truck Lot opposite Franklin Boulevard, make additional ground signs at each entrance a natural feature of the overall development.

c. <u>Not Self-Created</u>. The aforesaid unique physical condition is not the result of any action or inaction of the owner or its predecessors in title, other than the construction of structures that were lawful at the time of such construction, and existed at the time of the enactment of the provisions from which a variation is sought or was created by as a result of natural forces or governmental action, other than the adoption of this Code.

<u>Response</u>: The aforesaid conditions are a result of geographic location and proximity to Peterson and Midlothian Roads rather than the actions or inactions of the Owner or its predecessors in title.

d. <u>Denied Substantial Rights</u>. The carrying out of the strict letter of the provision from which a variation is sought would deprive the owner of the subject lot of

substantial rights commonly enjoyed by owners of other lots subject to the same provision.
Response: If the Zoning Code was strictly enforced, it would substantially reduce the visibility of all users of the subject property following its development.

e. **Not Merely Special Privilege. The alleged hardship or difficulty is neither merely the inability of the owner or occupant to enjoy some special privilege or additional right not available to owners or occupants of other lots subject to the same provision, nor merely the inability of the owner to make more money from the use of the subject lot; provided, however, that where the standards set out in this Section 16-8.7 are met, the existence of an economic hardship shall not be a prerequisite to the grant of a variation.**
Response: The requested variation will not provide the Owner with any special right or privilege not available to other owners of similarly situated property in the Village. It will allow adequate visibility for Bath Concepts and all future users on the subject property.

f. **Code and Plan Purposes. The variation would not result in a use or development of the subject lot that would be not in harmony with the general and specific purposes for which this Code and the provision from which a variation is sought were enacted or the general purpose and intent of the Official Comprehensive Plan.**
Response: Granting this variation will not result in a use or development that is not in harmony with the purposes of the Zoning Code or the Village's Comprehensive Plan. It will promote construction of a cohesive industrial development in a well-suited area of the Village that is designated for industrial use and surrounded by existing commercial and industrial developments.

g. **Essential Elements of the Area. The variation would not result in a use or development on the subject lot that:**

1) **Would be materially detrimental to the public welfare or materially injurious to the enjoyment, use, development, or value of property or improvements permitted in the vicinity; or**
Response: The proposed additional ground sign will not be detrimental to the public welfare or materially injurious to the development, enjoyment, use, or value of nearby properties or improvements.

2) **Would materially impair an adequate supply of light and air to the properties and improvements in the vicinity; or**
Response: The proposed additional ground sign will not materially impair adequate supply of light and air to nearby properties or improvements.

3) **Would substantially increase congestion in the public streets due to traffic or parking; or**
Response: The proposed additional ground sign will not increase congestion in public streets due to traffic or parking.

4) Would unduly increase the danger of flood or fire; or
Response: The proposed additional ground sign will not unduly increase the danger of flood or fire.

5) Would unduly tax public utilities and facilities in the area; or
Response: The proposed additional ground sign will not unduly tax existing public utilities and facilities in the area.

6) Would endanger the public health or safety.
Response: The proposed additional ground sign will not endanger public health or safety for the reasons set forth above.

h. No Other Remedy. There is no means other than the requested variation by which the alleged hardship or difficulty can be avoided or remedied to a degree sufficient to permit a reasonable use of the subject lot.
Response: There are no means other than the requested variation to alleviate, avoid or remedy the hardship.

6. **<u>Variation from Section 26-13-3.1 to eliminate the requirement for parking lot screening along the east side of the Truck Lot.</u>**

a. **<u>General Standard</u>. No variation shall be granted pursuant to this Section 16-8 unless the applicant shall establish that carrying out the strict letter of the provisions of this Code would create a particular hardship or a practical difficulty. Such a showing shall require proof that the variation being sought satisfies each of the standards set forth in this Section 16-8.7.**
<u>Response</u>: Carrying out the strict letter of the Zoning Code would create a practical difficulty for the Owner. There are no existing structures or uses located immediately to the east of the subject property, and the existing railroad is heavily screened on either side by dense vegetation serving as a substantial visual and auditory buffer to the east.

b. **<u>Unique Physical Condition</u>. The subject lot is exceptional as compared to other lots subject to the same provision by reason of a unique physical condition, including the presence of an existing use, structure, fence or sign, whether conforming or nonconforming; irregular or substandard shape or size; exceptional topographical features; or other extraordinary physical conditions peculiar to and inherent in the subject lot that amount to more than a mere inconvenience to the owner and that relate to or arise out of the lot or its existing development rather than the personal situation of the current owner of the lot.**
<u>Response</u>: The subject property is exceptional because it is bordered to the east, beyond the Truck Lot, by an existing railroad which lies between the subject property and the next improved lot and is heavily screened on both sides by existing vegetation.

c. **<u>Not Self-Created</u>. The aforesaid unique physical condition is not the result of any action or inaction of the owner or its predecessors in title, other than the construction of structures that were lawful at the time of such construction, and existed at the time of the enactment of the provisions from which a variation is sought or was created by as a result of natural forces or governmental action, other than the adoption of this Code.**
<u>Response</u>: The aforesaid conditions are not a result of the actions or inactions of the Owner or its predecessors in title. Instead, they are a result of existing natural features around the subject property and prior development in the surrounding area.

d. **<u>Denied Substantial Rights</u>. The carrying out of the strict letter of the provision from which a variation is sought would deprive the owner of the subject lot of substantial rights commonly enjoyed by owners of other lots subject to the same provision.**
<u>Response</u>: If the language of the Zoning Code was strictly enforced, it would require the Owner to plant new trees, shrubs, etc. along the entirety of Truck Lot which may later need to be removed to make room for an expansion of the Facility or for future construction of a new building on Lot 2 identified on the Plat of Subdivision included with the application submitted to staff. Furthermore, plantings are proposed along the south stormwater management facility and at the southeast corner of the Truck Lot to effectively screen it from Peterson Road.

e. **Not Merely Special Privilege. The alleged hardship or difficulty is neither merely the inability of the owner or occupant to enjoy some special privilege or additional right not available to owners or occupants of other lots subject to the same provision, nor merely the inability of the owner to make more money from the use of the subject lot; provided, however, that where the standards set out in this Section 16-8.7 are met, the existence of an economic hardship shall not be a prerequisite to the grant of a variation.**
Response: The requested variation will not provide the Owner with any special right or privilege not available to other owners of property in the I-1 District or monetary gain. It is requested only to eliminate new plantings which are not necessary to adequately screen the Truck Lot and which may need to be removed in the future to make way for further development in the future.

f. **Code and Plan Purposes. The variation would not result in a use or development of the subject lot that would be not in harmony with the general and specific purposes for which this Code and the provision from which a variation is sought were enacted or the general purpose and intent of the Official Comprehensive Plan.**
Response: The proposed use is permitted in the I-1 District and development of the site is designed to be in harmony with purposes of the Zoning Code and the Village's Comprehensive Plan. The proposed landscape improvements include new plantings around the stormwater management facility on the south of the site, as well as new plantings at the southeast corner of the Truck Lot. These plantings are intended to screen the Truck Lot from Peterson Road, minimizing the visibility of the Truck Lot to the public.

g. **Essential Elements of the Area. The variation would not result in a use or development on the subject lot that:**

1) **Would be materially detrimental to the public welfare or materially injurious to the enjoyment, use, development, or value of property or improvements permitted in the vicinity; or**
Response: The requested variation will not be detrimental to the public welfare or materially injurious to the development, enjoyment, use, or value of nearby properties or improvements.

2) **Would materially impair an adequate supply of light and air to the properties and improvements in the vicinity; or**
Response: The requested variation will not materially impair the supply of light and air to nearby properties.

3) **Would substantially increase congestion in the public streets due to traffic or parking; or**
Response: The requested variation will not substantially increase congestion in nearby public streets due to traffic or parking.

4) **Would unduly increase the danger of flood or fire; or**

Response: The requested variation will not unduly increase the danger of flood or fire.

5) Would unduly tax public utilities and facilities in the area; or
Response: The requested variation will not unduly tax existing public utilities and facilities in the area.

6) Would endanger the public health or safety.
Response: The requested variation will not endanger public health or safety for the reasons set forth above.

h. No Other Remedy. There is no means other than the requested variation by which the alleged hardship or difficulty can be avoided or remedied to a degree sufficient to permit a reasonable use of the subject lot.
Response: There are no means other than the requested variation to avoid or remedy the alleged difficulty.

7. **Variation from Section 26-13-3.2 to eliminate the interior landscape requirements for the Truck Lot.**

a. **General Standard. No variation shall be granted pursuant to this Section 16-8 unless the applicant shall establish that carrying out the strict letter of the provisions of this Code would create a particular hardship or a practical difficulty. Such a showing shall require proof that the variation being sought satisfies each of the standards set forth in this Section 16-8.7.**
Response: Carrying out the strict letter of the Zoning Code would create a practical difficulty for the Owner. There is virtually no visibility to the Truck Lot because there are no adjacent buildings or roadways to the east and the nearest improvement, the existing railroad, is heavily screened on either side by dense vegetation. Additionally, the Truck Lot will be screened from Peterson Road by new plantings at its southeast corner and around the stormwater management facility along south property line

b. **Unique Physical Condition. The subject lot is exceptional as compared to other lots subject to the same provision by reason of a unique physical condition, including the presence of an existing use, structure, fence or sign, whether conforming or nonconforming; irregular or substandard shape or size; exceptional topographical features; or other extraordinary physical conditions peculiar to and inherent in the subject lot that amount to more than a mere inconvenience to the owner and that relate to or arise out of the lot or its existing development rather than the personal situation of the current owner of the lot.**
Response: The subject property is exceptional compared to other properties because it is bordered to the east by railroad track which lies between the subject property and the next improved lot to the east and is heavily screened on both sides.

c. **Not Self-Created. The aforesaid unique physical condition is not the result of any action or inaction of the owner or its predecessors in title, other than the construction of structures that were lawful at the time of such construction, and existed at the time of the enactment of the provisions from which a variation is sought or was created by as a result of natural forces or governmental action, other than the adoption of this Code.**
Response: The site conditions are not a result of the actions or inactions of the Owner or its predecessors in title but are a result of natural features and prior development surrounding the subject property.

d. **Denied Substantial Rights. The carrying out of the strict letter of the provision from which a variation is sought would deprive the owner of the subject lot of substantial rights commonly enjoyed by owners of other lots subject to the same provision.**
Response: If the Zoning Code was strictly enforced, it would require the Owner to plant internal landscaping within the Truck Lot that is essentially invisible to the public, reduces available truck spaces, and interferes with internal truck circulation on the site.

e. **<u>Not Merely Special Privilege</u>. The alleged hardship or difficulty is neither merely the inability of the owner or occupant to enjoy some special privilege or additional right not available to owners or occupants of other lots subject to the same provision, nor merely the inability of the owner to make more money from the use of the subject lot; provided, however, that where the standards set out in this Section 16-8.7 are met, the existence of an economic hardship shall not be a prerequisite to the grant of a variation.**
<u>Response</u>: The requested variation will not provide the Owner with any special right or privilege not available to other owners of property in the I-1 District or result in monetary gain. It is requested only to eliminate the need for internal landscape plantings which are not visible to the public and would negatively impact the Truck Lot in terms of available truck spaces and internal circulation.

f. **<u>Code and Plan Purposes</u>. The variation would not result in a use or development of the subject lot that would be not in harmony with the general and specific purposes for which this Code and the provision from which a variation is sought were enacted or the general purpose and intent of the Official Comprehensive Plan.**
<u>Response</u>: The requested variation will allow for cohesive development of the site for the proposed use, which is permitted in the I-1 District.

g. **<u>Essential Elements of the Area</u>. The variation would not result in a use or development on the subject lot that:**

1) **Would be materially detrimental to the public welfare or materially injurious to the enjoyment, use, development, or value of property or improvements permitted in the vicinity; or**
<u>Response</u>: The requested variation will not be detrimental to the public welfare or materially injurious to the development, enjoyment, use, or value of nearby properties or improvements.

2) **Would materially impair an adequate supply of light and air to the properties and improvements in the vicinity; or**
<u>Response</u>: The requested variation will not materially impair the supply of light and air to nearby properties.

3) **Would substantially increase congestion in the public streets due to traffic or parking; or**
<u>Response</u>: The requested variation will not substantially increase congestion in nearby public streets due to traffic or parking.

4) **Would unduly increase the danger of flood or fire; or**
<u>Response</u>: The requested variation will not unduly increase the danger of flood or fire.

5) **Would unduly tax public utilities and facilities in the area; or**

Response: The requested variation will not unduly tax existing public utilities and facilities in the area.

6) Would endanger the public health or safety.
Response: The proposed variation will not endanger public health or safety for the reasons set forth above.

h. No Other Remedy. There is no means other than the requested variation by which the alleged hardship or difficulty can be avoided or remedied to a degree sufficient to permit a reasonable use of the subject lot.
Response: There are no means other than the requested variation to avoid or remedy the alleged difficulty. The Truck Lot has been carefully designed to adequately accommodate the anticipated current and future needs of Bath Concepts and promote internal circulation of truck traffic to avoid any negative impacts on Harris or Peterson Roads as a result of this development.

MELTZER, PURTILL & STELLE LLC

MPSLAW

ATTORNEYS AT LAW
File Number: 36446-002
Direct Dial: (312) 461-4336
Email: bpenny@mpslaw.com

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SCHAUMBURG, IL 60173
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125 SOUTH WACKER DRIVE
SUITE 2900
CHICAGO, IL 60606
TELEPHONE (312) 987-9900

www.mpslaw.com

January 9, 2026

Tony Repp, Deputy Director
Community Development Department
Village of Libertyville
325 N. Milwaukee Avenue, Ste. 203
Libertyville, Illinois 60048

RE: 30532-30568 N. Harris Rd., Libertyville, IL – Request for Waiver of Water and Sewer Recapture Fee Interest

Dear Mr. Repp,

We are submitting this letter on behalf of Aston Villa Land Partners LLC, the owner ("Owner") of the captioned property (the "Property") requesting a waiver of the interest portion of the Village Water and Sewer Recapture Fees applicable to the Property pursuant to Ordinance 91-O-56, effective as of December 1, 1991 ("Recapture Fees"). This request will follow and accompany an application ("Application") that was submitted to staff requesting approval from the Village of Libertyville (the "Village") for a new approximately 600,000-square-foot manufacturing warehouse and office facility on the Property (the "Facility"). The Property has historically been used as farmland and has otherwise remained largely unimproved. Pursuant to the Application, the Facility will serve as the new home of Bath Concepts Industries, LLC ("Bath Concepts"), which is a company that has operated in the Village for more than a decade with great success.

This project will also benefit the Village of Libertyville by substantially improving the Property with a new industrial building. Moreover, the new owner has plans for additional future development thereby creating substantial additional property tax revenue for the Village. Bath Concepts will bring with it more than 400 employees who will reside in the Village or travel to the Property from nearby municipalities, patronizing convenience stores, gas stations, restaurant and other commercial enterprises in the Village. Following relocation, it plans to hire upwards of 100 additional employees in the first five years of its operation. Finally, it will contribute substantially to the Village's tax base with approximately $250,000,000 in gross sales in 2024 and projected again in 2025.

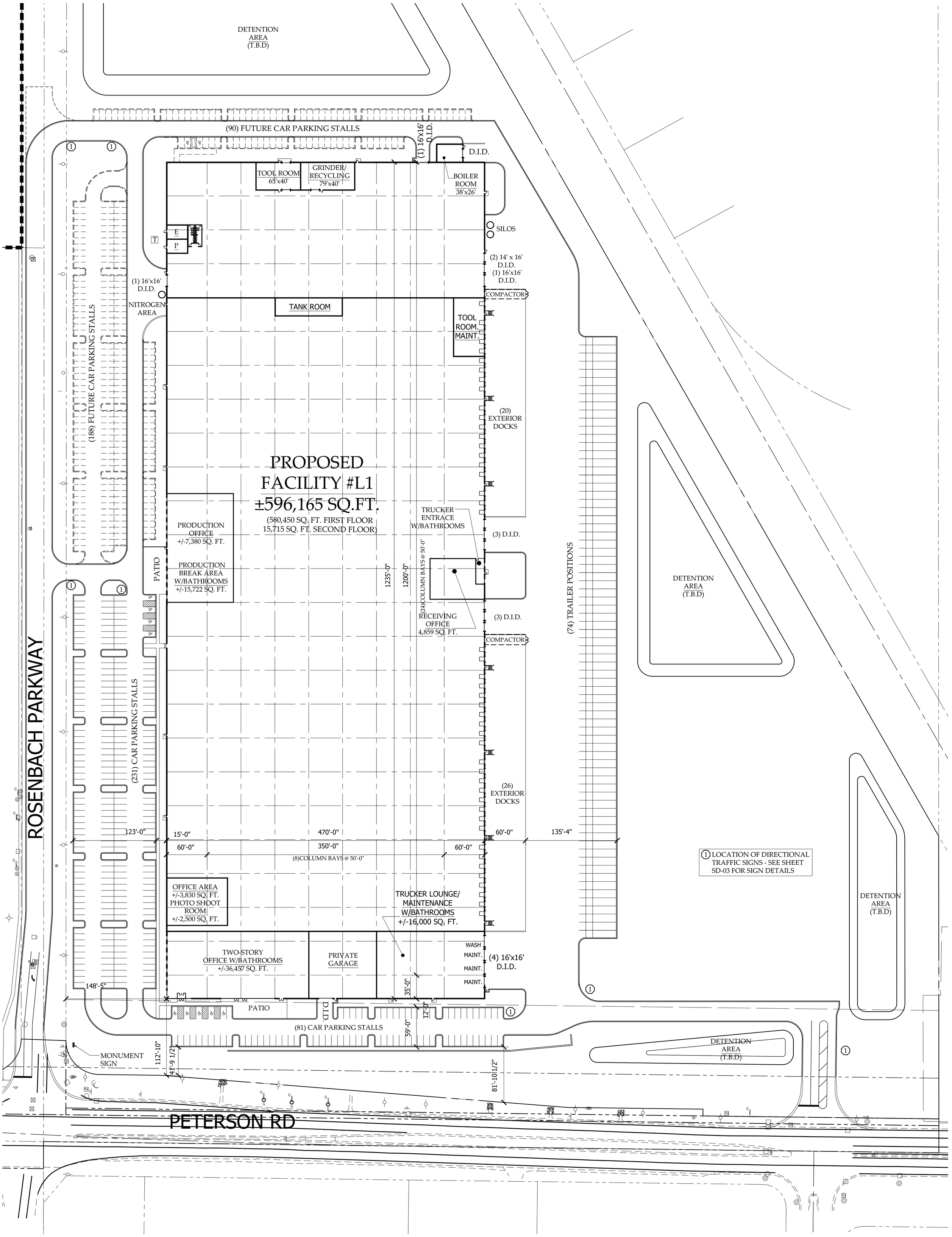
However, the substantial amount of Recapture Fees is proving to be an obstacle to feasible development of the site. As such, we respectfully request that the Village Board consider waiving the interest portion of the Water and Sewer Recapture Fees through June 1, 2026 as part of its review of the Application. The base amount of these Recapture Fees is $203,433.30. Since 1991, the interest portion of the Recapture Fees has accrued interest at a rate of 4% per anum and will total $280,927.45 as of June 1, 2026. This represents more than a 38% increase over the base fee and brings the total amount of the Recapture Fee to $484,360.75. This total fee is substantial and could impair the ultimate realization of the entire project. Therefore, considering the scale of the proposed project and its potential benefit to Bath Concepts and the Village alike, we respectfully request that the interest portion of the Recapture Fee be waived.

Thank you for your attention to this request and please feel free to contact me if you have any questions.

Sincerely,
MELTZER, PURTILL & STELLE LLC

Brendan G. Penny

CC: *Scott Rosenbach, via email*
Scott Hargadon, via email



1 LOCATION OF DIRECTIONAL TRAFFIC SIGNS - SEE SHEET SD-03 FOR SIGN DETAILS

1 SITE PLAN
SCALE: 1" = 60'-0"

NELSON
NELSONWW.com

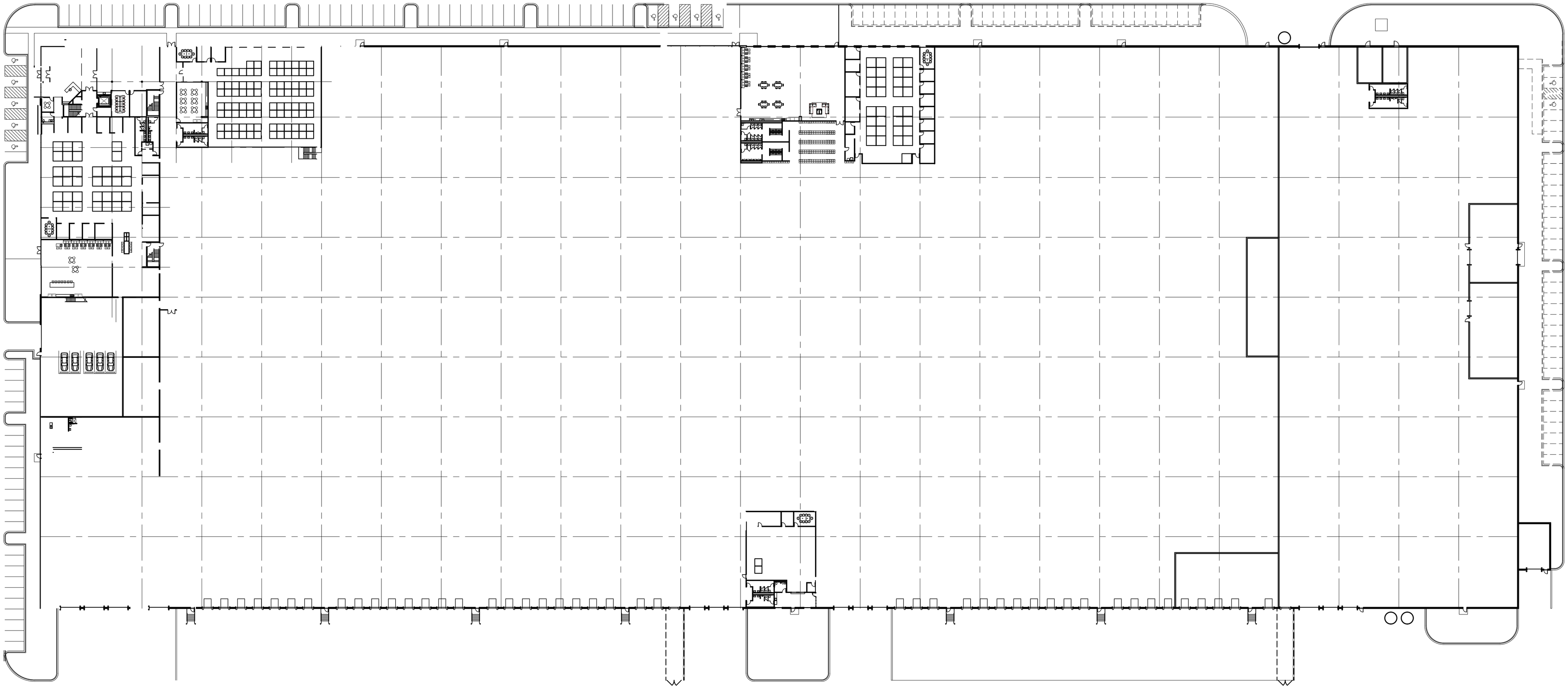
Principle CONSTRUCTION
9450 West Bryn Mawr Ave. Suite #120
Rosemont, IL 60018
PHONE (847)615-1515
pccdb.com

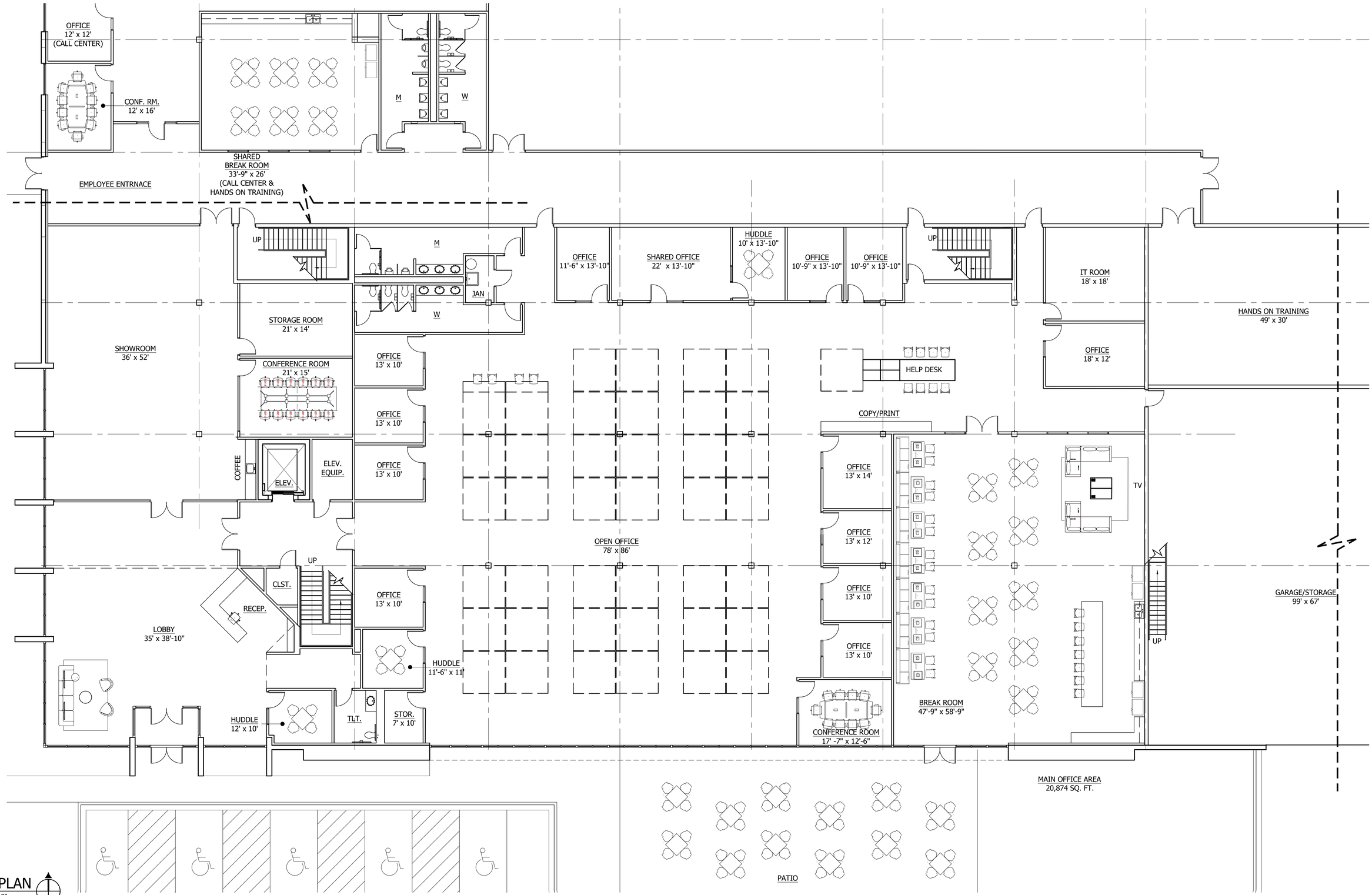
PROJECT: BATH CONCEPTS INC
100 ROSENBACH PARKWAY
LIBERTYVILLE, ILLINOIS

SHEET: SITE PLAN

DATE: 12/02/2025
PROJECT #24.0003194.000

SP-01
1 of 4





1 FLOOR PLAN
SCALE: 1/8" = 1'-0"

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9450 West Bryn Mawr Ave. Suite #120
Rosemont, IL 60018
PHONE (847)615-1515
pccdb.com

PROJECT:

BATH CONCEPTS

PROPOSED FACILITY

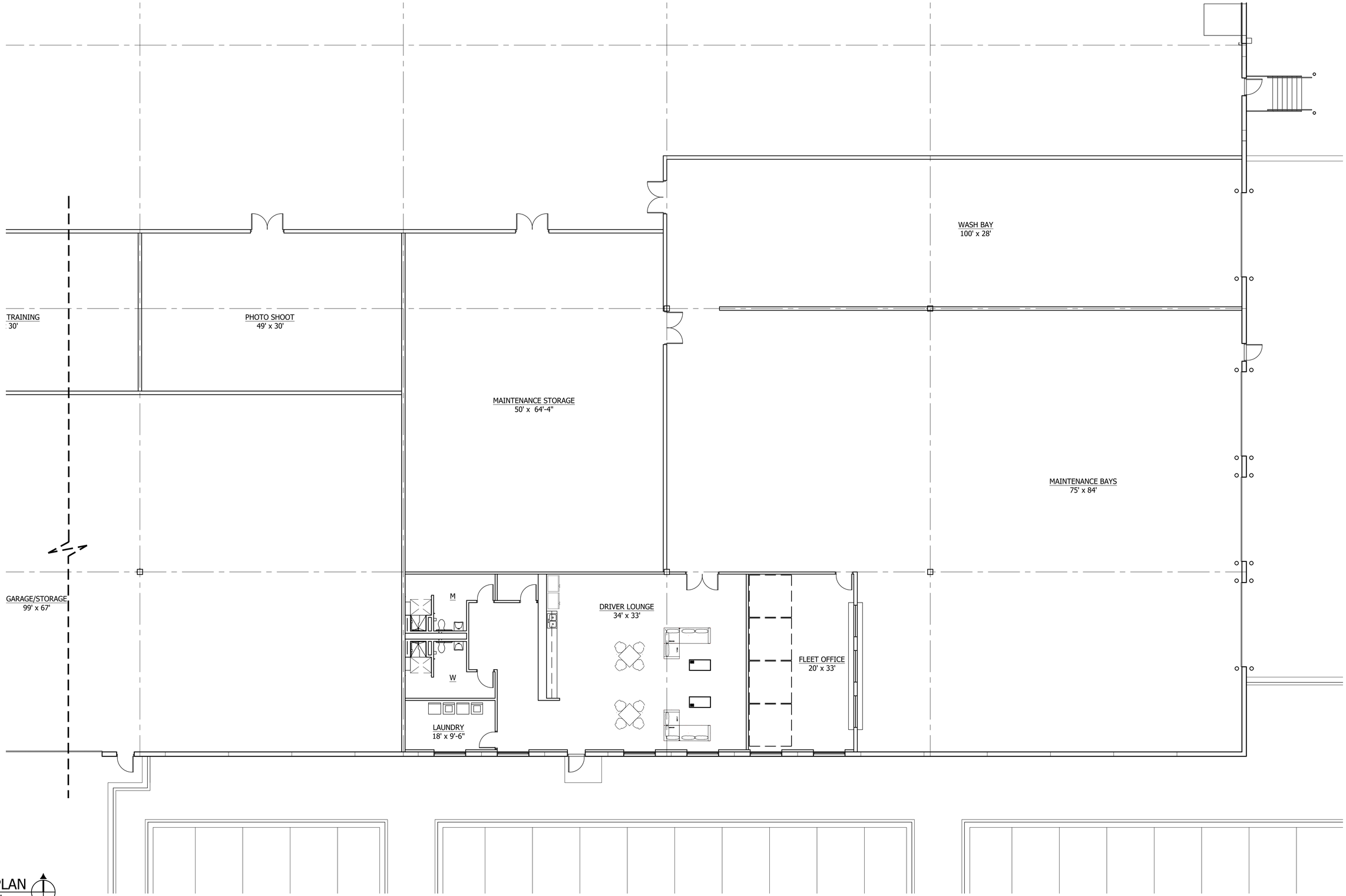
100 ROSENBACH PARKWAY
LIBERTYVILLE, ILLINOIS

DATE: 01/05/2026
PROJECT #24.0003194.000

SHEET:

PARTIAL FIRST FLOOR PLAN

SD-02



1 FLOOR PLAN
SCALE: 1/8" = 1'-0"

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Principle CONSTRUCTION
9450 West Bryn Mawr Ave. Suite #120
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PHONE (847)615-1515
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PROJECT:

BATH CONCEPTS

PROPOSED FACILITY

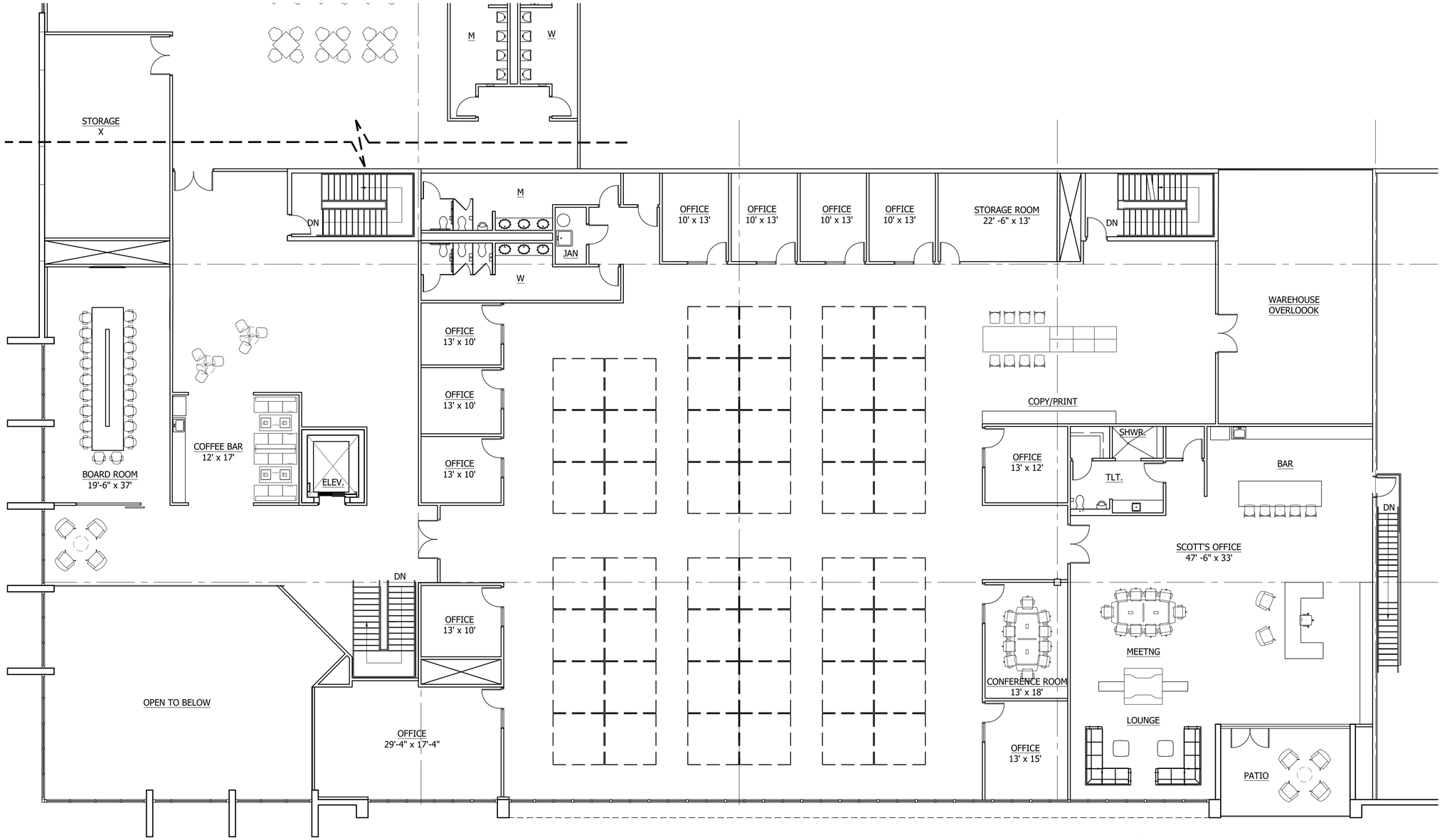
100 ROSENBACH PARKWAY
LIBERTYVILLE, ILLINOIS

DATE: 01/05/2026
PROJECT #24.0003194.000

SHEET:

PARTIAL FIRST FLOOR PLAN

SD-02
3 of 6



2ND FLOOR
MAIN OFFICE AREA
16,309 SQ. FT.

1 FLOOR PLAN
SCALE: 1/8" = 1'-0"

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PROJECT:
BATH CONCEPTS

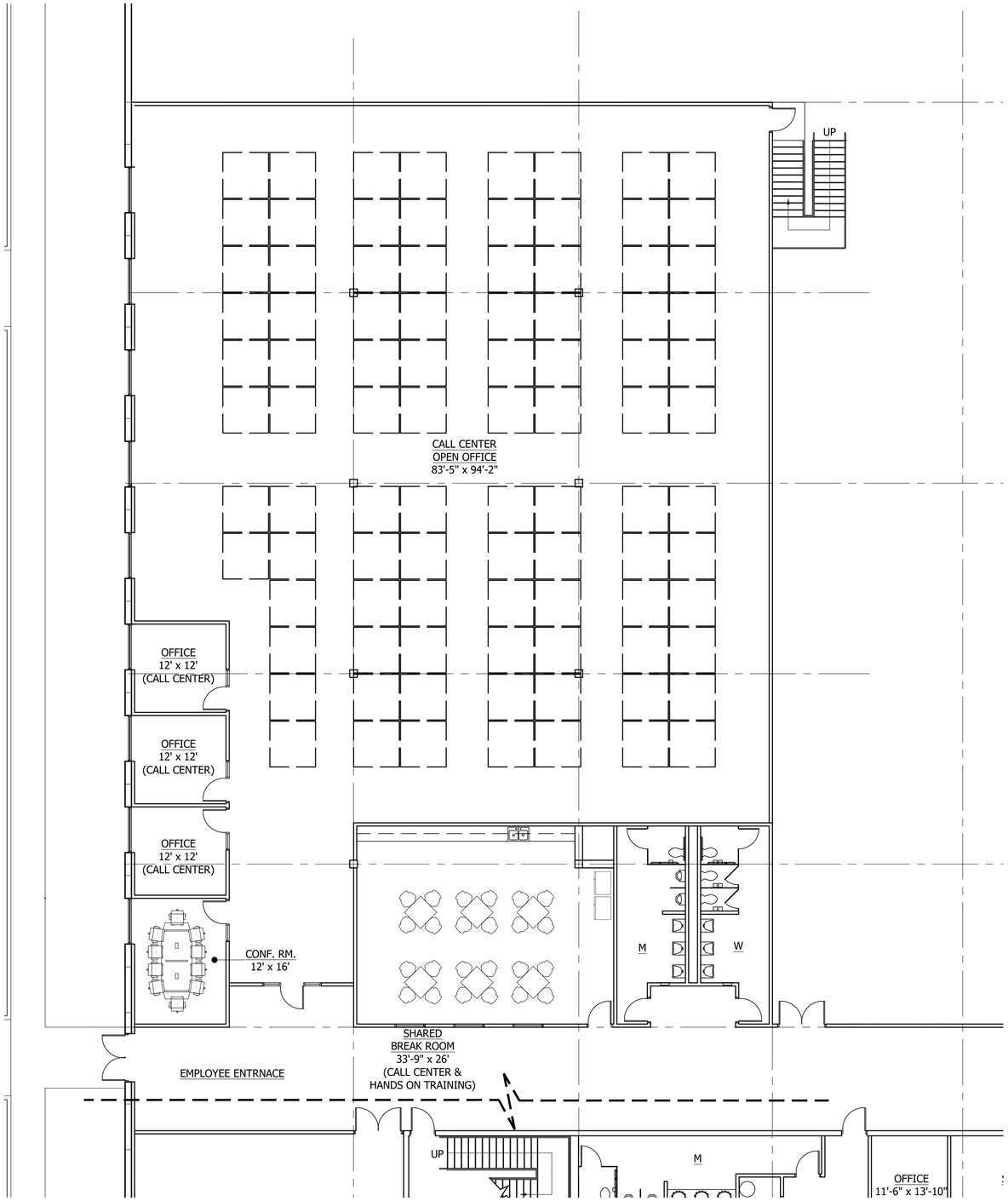
PROPOSED FACILITY

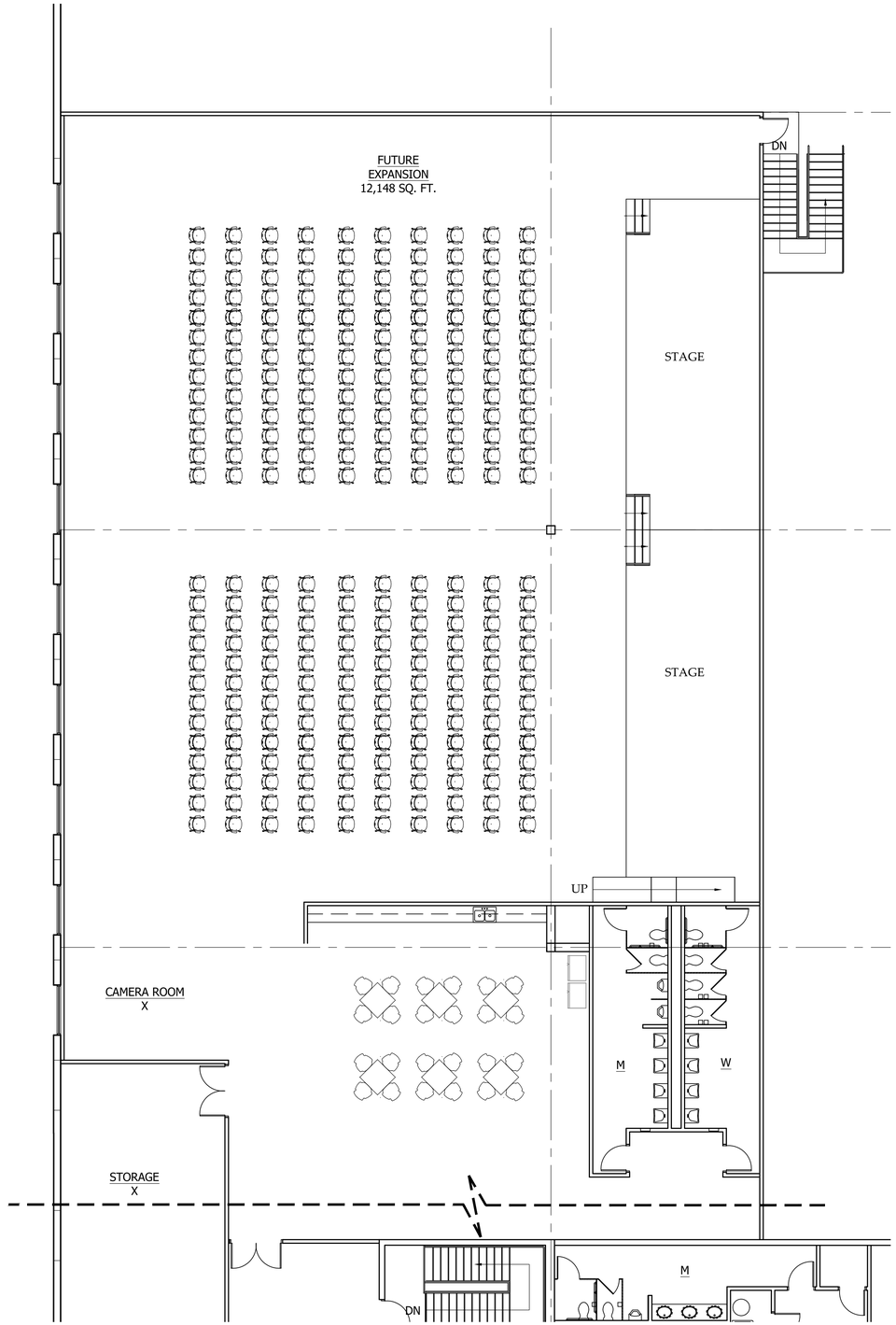
100 ROSENBACH PARKWAY
LIBERTYVILLE, ILLINOIS

DATE: 01/05/2026
PROJECT #24.0003194.000

SHEET:
SECOND FLOOR PLAN

SD-02





1 FLOOR PLAN
SCALE: 1/8" = 1'-0"

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PROJECT:
BATH CONCEPTS

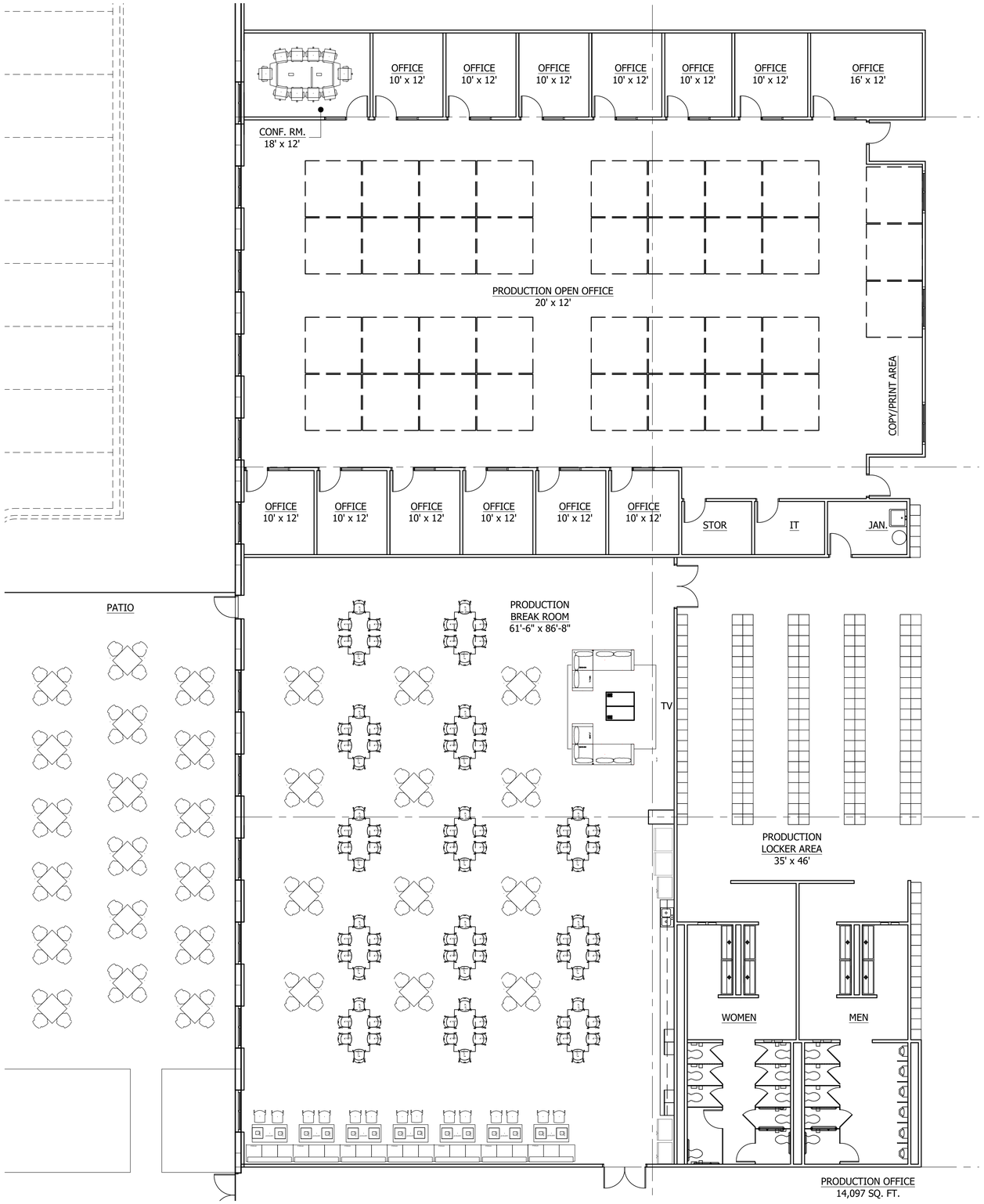
PROPOSED FACILITY

100 ROSENBACH PARKWAY
LIBERTYVILLE, ILLINOIS

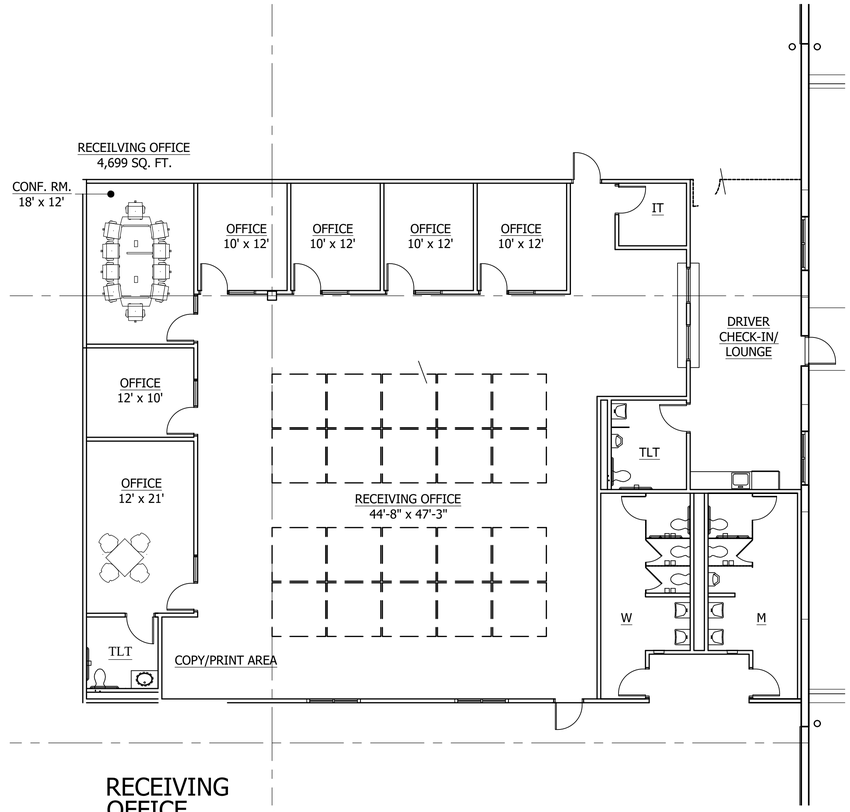
DATE: 01/05/2026
PROJECT #24.0003194.000

SHEET:
PARTIAL FIRST FLOOR PLAN

SD-02



1 PRODUCTION OFFICE FLOOR PLAN
SCALE: 1/8" = 1'-0"



2 RECEIVING OFFICE FLOOR PLAN
SCALE: 1/8" = 1'-0"

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9450 West Bryn Mawr Ave. Suite #120
Rosemont, IL 60018
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PROJECT: BATH CONCEPTS

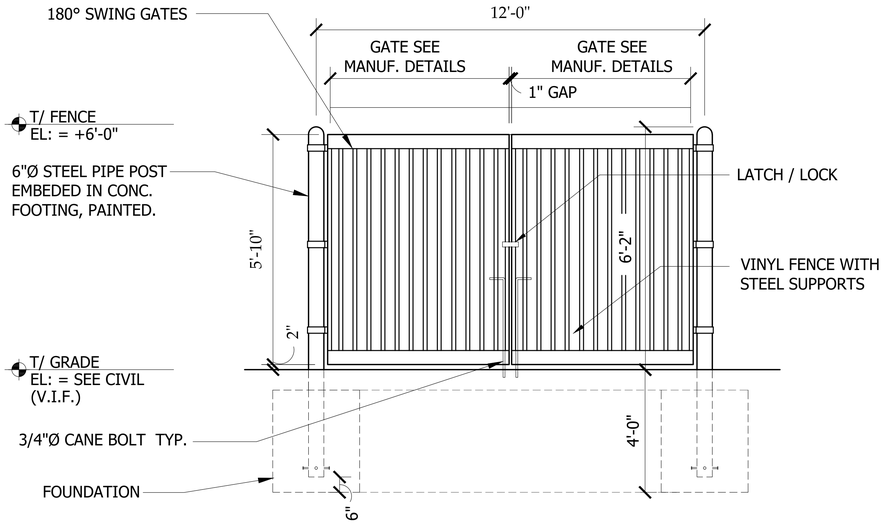
PROPOSED FACILITY

100 ROSENBACH PARKWAY
LIBERTYVILLE, ILLINOIS

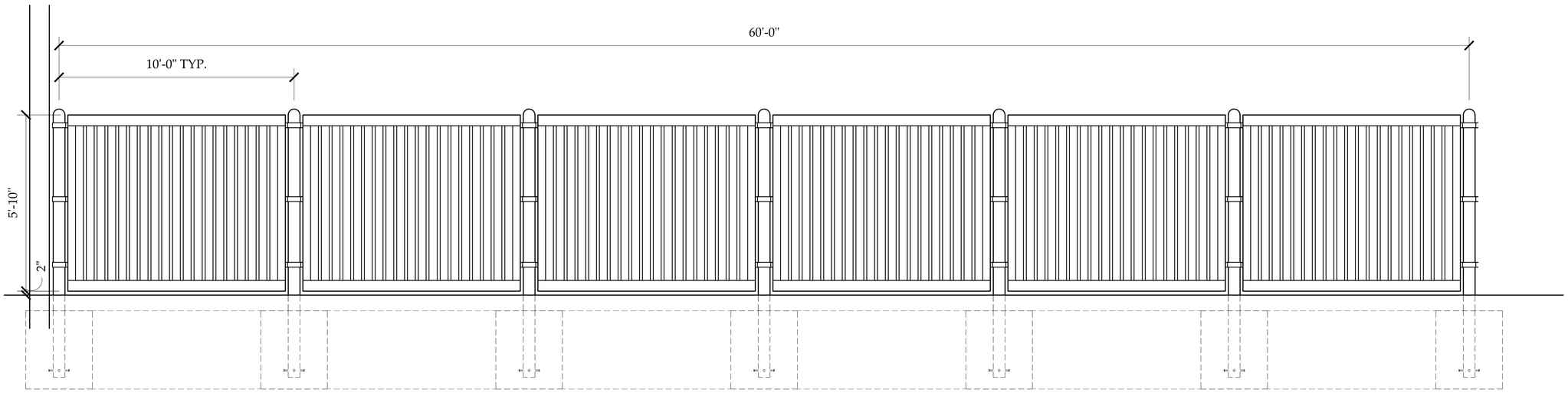
DATE: 01/05/2026
PROJECT #24.0003194.000

SHEET: PARTIAL FIRST FLOOR PLAN

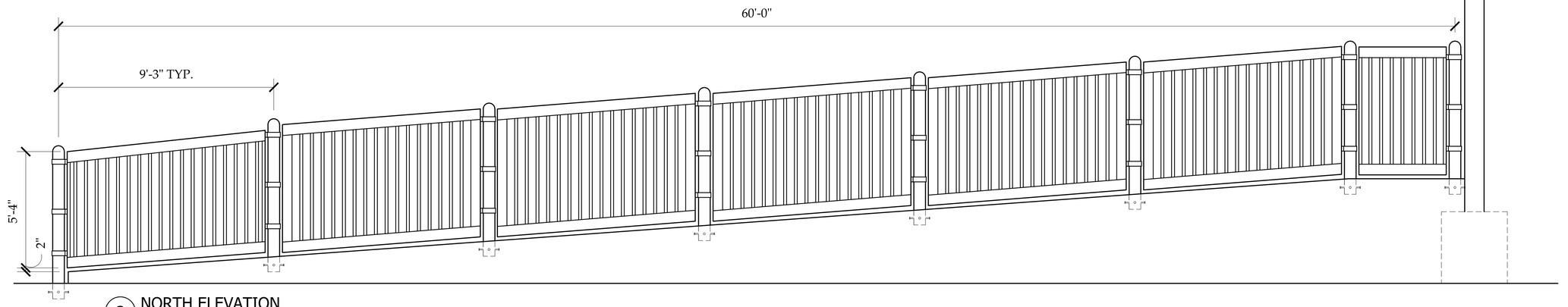
SD-02
6 of 6



1 EAST ELEVATION
SCALE: 1/2" = 1'-0"



2 SOUTH ELEVATION
SCALE: 1/2" = 1'-0"



3 NORTH ELEVATION
SCALE: 1/2" = 1'-0"

NELSON
NELSONWW.com

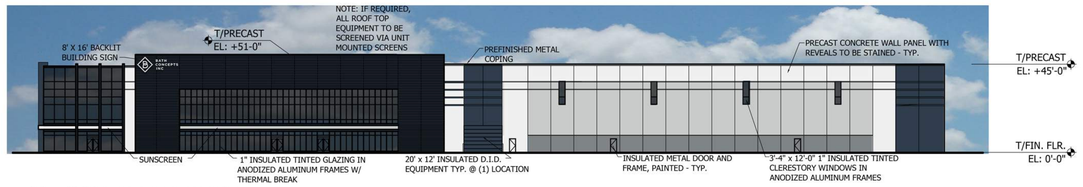
CLIENT:
Principle CONSTRUCTION
9450 West Bryn Mawr Ave. Suite #120
Rosemont, IL 60018
PHONE (847)615-1515
pccdb.com

PROJECT:
BATH CONCEPTS INC
PROPOSED FACILITY
100 ROSENBACH PARKWAY
LIBERTYVILLE, ILLINOIS

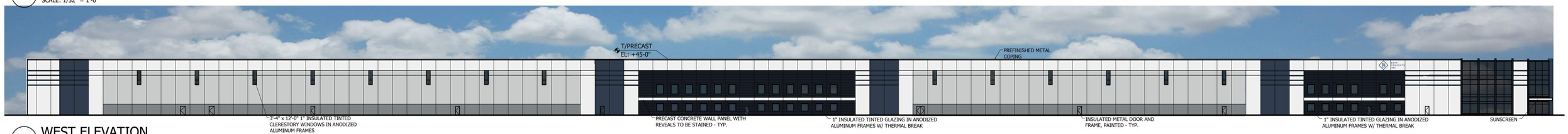
DATE: 12/02/2025
PROJECT #24.0003194.000

SHEET:
TRASH COMPACTOR ELEVATIONS

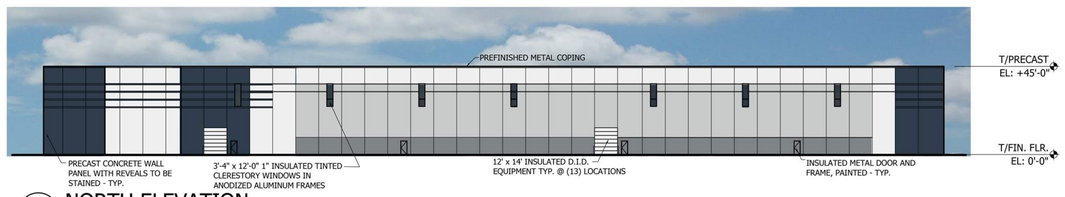
SD-04
4 of 4



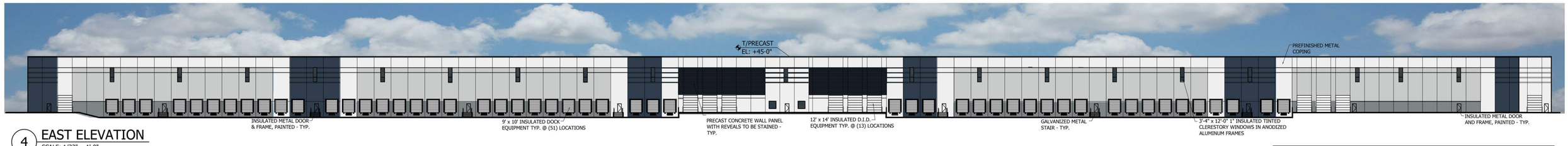
1 SOUTH ELEVATION
SCALE: 1/32" = 1'-0"



2 WEST ELEVATION
SCALE: 1/32" = 1'-0"



3 NORTH ELEVATION
SCALE: 1/32" = 1'-0"



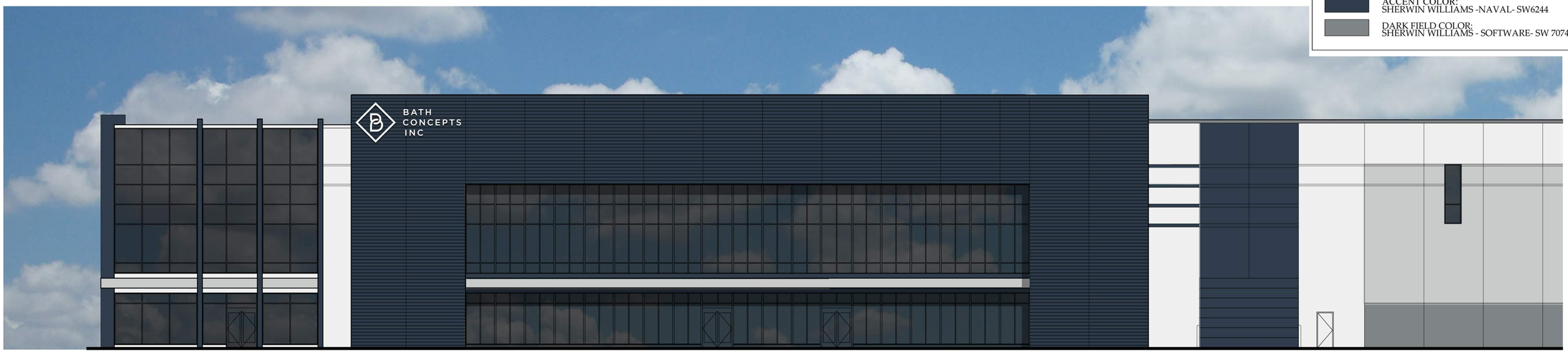
4 EAST ELEVATION
SCALE: 1/32" = 1'-0"

WHITE FIELD COLOR:
SHERWIN WILLIAMS -NEBULOUS WHITE SW7063

LIGHT FIELD COLOR:
SHERWIN WILLIAMS -PASSIVE -SW7064

ACCENT COLOR:
SHERWIN WILLIAMS -NAVAL- SW6244

DARK FIELD COLOR:
SHERWIN WILLIAMS - SOFTWARE- SW 7074



5 ENTRY BLOW-UP
SCALE: 1/8" = 1'-0"

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CLIENT:
Principle CONSTRUCTION
9450 West Bryn Mawr Ave. Suite #120
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PHONE (847)615-1515
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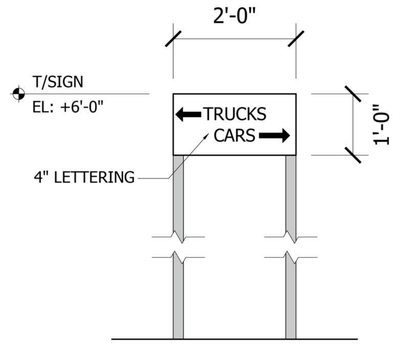
PROJECT:
BATH CONCEPTS INC
PROPOSED FACILITY
100 ROSENBACH PARKWAY
LIBERTYVILLE, ILLINOIS

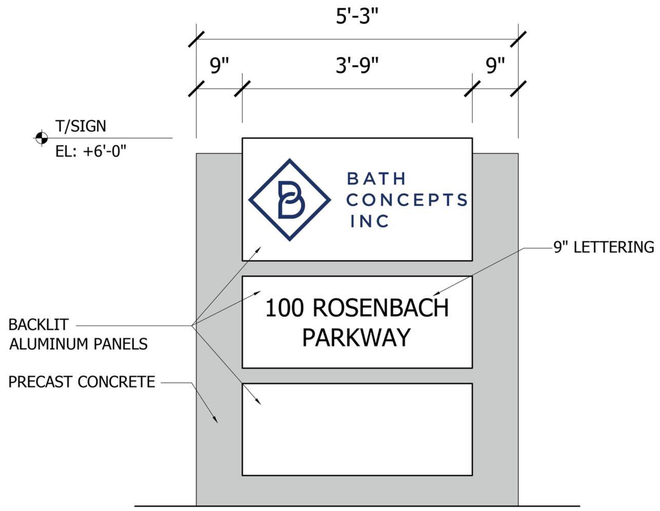
DATE: 12/02/2025
PROJECT #24.0003194.000

SHEET:
PROPOSED ELEVATIONS

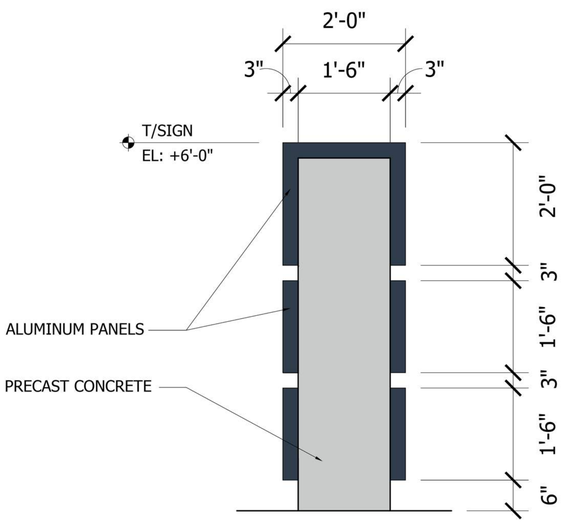
SD-02
1 of 4



1 DIRECTIONAL TRAFFIC SIGN
SCALE: 1" = 1'-0"



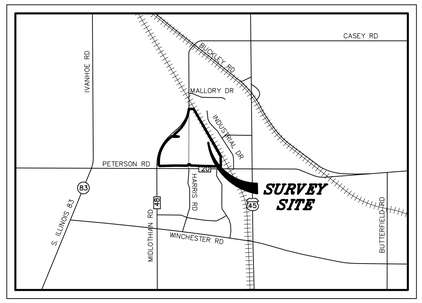
2 GROUND MONUMENT SIGN
SCALE: 1" = 1'-0"



3 GROUND MONUMENT SIGN
SCALE: 1" = 1'-0"

4 WALL SIGN
SCALE: 1/4" = 1'-0"

ALTA/NSPS LAND TITLE SURVEY



LOCATION MAP

NOT TO SCALE

INDEX TO SCHEDULE B

EXCEPTION	DOCUMENT NUMBER	DESCRIPTION	PLOTTABLE	NOTATION
1	N/A	RIGHTS OR CLAIMS NOT SHOWN BY PUBLIC RECORDS	UNKNOWN	NOT ADDRESSED BY SURVEY
2	N/A	MATTERS DISCLOSED BY AN ACCURATE AND COMPLETE LAND SURVEY	YES	IMPROVEMENTS SHOWN HEREON
2	N/A	EASEMENTS NOT SHOWN BY PUBLIC RECORDS	UNKNOWN	IMPROVEMENTS SHOWN HEREON
4	N/A	ANY LIEN NOT SHOWN BY PUBLIC RECORDS	UNKNOWN	NOT ADDRESSED BY SURVEY
5	N/A	TAXES OR SPECIAL ASSESSMENTS NOT SHOWN BY PUBLIC RECORD	UNKNOWN	NOT ADDRESSED BY SURVEY
6	N/A	REQUEST FOR PROPERLY EXECUTED ALTA STATEMENT	UNKNOWN	NOT ADDRESSED BY SURVEY
7	N/A	NOTE REGARDING MATTERS THAT MAY APPEAR FOR THE FIRST TIME IN PUBLIC RECORDS AFTER THE COMMITMENT DATE	UNKNOWN	NOT ADDRESSED BY SURVEY
G	N/A	PROPERTY TAXES FOR THE YEARS 2022 AND 2023 (10-12-100-016)(10-12-101-001)(10-12-200-013)(10-12-100-020)(10-12-100-022)	UNKNOWN	NOT ADDRESSED BY SURVEY
F	N/A	NOTE REGARDING NO OPEN MORTGAGES OF RECORD	UNKNOWN	NOT ADDRESSED BY SURVEY
B	N/A	EXISTING UNRECORDED LEASES, IF ANY	UNKNOWN	NOT ADDRESSED BY SURVEY
A	N/A	REQUEST FOR PROPERTY MANAGERS STATEMENT	UNKNOWN	NOT ADDRESSED BY SURVEY
D	N/A	ANY RIGHT, INTEREST OR CLAIM AGAINST THE TITLE UNDER OR PURSUANT TO THE PERISHABLE AGRICULTURAL COMMODITIES ACT OF 1930, THE PACKERS AND STOCKYARD ACT OF 1921, OR ANY SIMILAR STATE LAWS	UNKNOWN	NOT ADDRESSED BY SURVEY
C	N/A	NOTE REGARDING REQUIREMENTS OF NORTHBROOK PROPERTIES, INC. AN ILLINOIS CORPORATION	UNKNOWN	NOT ADDRESSED BY SURVEY
AK	N/A	NOTE REGARDING REQUIREMENTS OF ASTON VILLA LAND PARTNERS, LLC	UNKNOWN	NOT ADDRESSED BY SURVEY
X	N/A	NOTE REGARDING THE PLAT ACT AND ANY CONVEYANCE TO BE RECORDED	UNKNOWN	NOT ADDRESSED BY SURVEY
H	N/A	RIGHTS OF WAY FOR DRAINAGE TILES, DITCHES, FEEDERS, LATERALS AND UNDERGROUND PIPES, IF ANY	UNKNOWN	IMPROVEMENTS SHOWN HEREON
I	N/A	RIGHTS OF THE PUBLIC AND THE OWNER(S) OF ADJOINING PROPERTY IN AND TO THE FREE AND UNINTERRUPTED FLOW OF ANY STREAMS WHICH TRAVERSE THE LAND	UNKNOWN	IMPROVEMENTS SHOWN HEREON
J	N/A	RIGHTS OF THE PUBLIC, THE STATE OF ILLINOIS AND THE MUNICIPALITY IN AND TO THAT PART OF THE LAND, IF ANY, TAKEN OR USED FOR ROAD PURPOSES	YES	IMPROVEMENTS SHOWN HEREON
K	373732	AGREEMENT RELATING TO THE ANNEXATION AND DEVELOPMENT OF THE 133 ACRE MEYER FARM	YES	NOTED ON SURVEY
K	4415350	FIRST AMENDMENT TO AGREEMENT	NO	NOT ADDRESSED BY SURVEY
K	6188966	SECOND AMENDMENT TO AGREEMENT	NO	NOT ADDRESSED BY SURVEY
L	2563341	MORAINE PIPELINE EASEMENT	YES	SHOWN ON SURVEY
L	3414077	INSTRUMENT ASSIGNING INTEREST TO NATURAL GAS PIPELINE COMPANY OF AMERICA	NO	NOT ADDRESSED BY SURVEY
M	2744896	NORTHSHORE GAS COMPANY EASEMENT	YES	SHOWN ON SURVEY
N	2925984	ORDINANCE NO. 90-0-28	YES	NOTED ON SURVEY
O	1397940	NATURAL GAS PIPELINE COMPANY OF AMERICA EASEMENT	YES	NOTED ON SURVEY
O	4236890	AMENDMENT TO RIGHT-OF-WAY	YES	SHOWN ON SURVEY
P	589500	RIGHT-OF-WAY AND OPTION IN FAVOR OF NATURAL GAS PIPELINE OF AMERICA	NO	NOTED ON SURVEY
P	595404	RIGHT-OF-WAY AND OPTION IN FAVOR OF NATURAL GAS PIPELINE OF AMERICA	NO	NOTED ON SURVEY
P	589499	RIGHT-OF-WAY AND OPTION IN FAVOR OF NATURAL GAS PIPELINE OF AMERICA	NO	NOTED ON SURVEY
P	595403	RIGHT-OF-WAY AND OPTION IN FAVOR OF NATURAL GAS PIPELINE OF AMERICA	NO	NOTED ON SURVEY
P	4236890	AMENDMENT TO RIGHT-OF-WAY	YES	SHOWN ON SURVEY
Q	3038750	PLAT OF SURVEY OF THE EXTENSION OF COUNTY HIGHWAY 48 BY LAKE COUNTY DEPARTMENT OF HIGHWAYS	YES	NOTED ON SURVEY
R	154252	RIGHT OF CHICAGO TELEPHONE COMPANY TO OPERATE AND MAINTAIN POLES/WIRES ALONG NORTH SIDE OF PUBLIC HIGHWAYS CONTAINED IN GRANT	NO	NOTED ON SURVEY
S	768745	GRANT AND DEDICATION OF RIGHT-OF-WAY FOR PUBLIC HIGHWAY	YES	SHOWN ON SURVEY
T	4131569	GRANT OF SURFACE EASEMENT TO NATURAL GAS PIPELINE COMPANY OF AMERICA	YES	SHOWN ON SURVEY
T	7566124	PARTIAL ASSIGNMENT OF SURFACE EASEMENT	NO	NOT ADDRESSED BY SURVEY
T	7877349	TERMS CONDITIONS OF THE NINETEENTH SUPPLEMENTAL INDENTURE MADE BY NORTH SHORE GAS COMPANY TO US BANK NATIONAL ASSOCIATION	NO	NOT ADDRESSED BY SURVEY
U	4445127	NORTH SHORE GAS COMPANY EASEMENT	YES	SHOWN ON SURVEY
V	6224348	NORTH SHORE GAS COMPANY EASEMENT	YES	SHOWN ON SURVEY
W	6763775	NATURAL GAS PIPELINE COMPANY EASEMENT AS CONTAINED IN CATHODIC PROTECTION AGREEMENT	YES	SHOWN ON SURVEY
Z	6888943 7105804	PUBLIC UTILITY EASEMENTS	YES	NOTED ON SURVEY
AA	4431563	NORH SHORE GAS COMPANY EASEMENT	YES	SHOWN ON SURVEY
AB	1302811	NORH SHORE GAS COMPANY EASEMENT	YES	NOTED ON SURVEY
AC	6234102	VILLAGE OF GRAYSLAKE ORDINANCE NO. 2006-0-32	YES	NOTED ON SURVEY
AD	N/A	RIGHTS-OF-WAY FOR RAILROAD SWITCH AND SPUR TRACKS IF ANY	NO	IMPROVEMENTS SHOWN HEREON
AE	6274023	VILLAGE OF GRAYSLAKE ORDINANCE NO. 2007-0-25	YES	NOTED ON SURVEY
AF	6274024	VILLAGE OF GRAYSLAKE ORDINANCE NO. 2007-0-27	YES	NOTED ON SURVEY
AG	6428096	PLAT OF DEDICATION FOR MIDLOTHIAN ROAD	YES	NOTED ON SURVEY
AH	6596933	VILLAGE OF GRAYSLAKE ORDINANCE NO. 2007-0-08	NO	NOT ADDRESSED BY SURVEY
AI	N/A	NOTE FOR INFORMATION: ENDORSEMENT REQUESTS	NO	NOT ADDRESSED BY SURVEY
AJ	N/A	INFORMATIONAL NOTE: SCHEDULE OF ANY CLOSINGS	NO	NOT ADDRESSED BY SURVEY

PROPERTY AREA

3,595,876 SQUARE FEET (82.550 ACRES)

PIN'S

10-12-100-016
10-12-101-001
10-12-200-013
10-12-100-020
10-12-100-022

PROPERTY ADDRESS

THE BELOW ADDRESSES HAVE BEEN SHOWN PER THE LAKE COUNTY GIS WEBSITE DATABASE

30568 N HARRIS RD
30532 N HARRIS RD
30837 N HARRIS RD
19680 W PETERSON RD

TITLE NOTES

CHICAGO TITLE INSURANCE COMPANY COMMITMENT NO. CCHI2208139LD WITH AN EFFECTIVE DATE OF DECEMBER 8, 2022 HAS BEEN REVIEWED IN CONJUNCTION WITH THE PREPARATION OF THIS SURVEY. THIS SURVEY MAY NOT REFLECT MATTERS OF TITLE THAT MAY BENEFIT OR BURDEN THE PROPERTY UNLESS THEY ARE EVIDENT FROM THE FIELD SURVEY OR THEY ARE CONTAINED IN THE ABOVE TITLE COMMITMENT. THE FOLLOWING NOTES ARE RELATED TO CERTAIN TITLE EXCEPTIONS CONTAINED IN THE ABOVE COMMITMENT.

(EXCEPTION K) TRACT 1, PARCEL 2 OF THE SURVEYED PROPERTY HAS BEEN ANNEXED TO THE VILLAGE OF LIBERTYVILLE BY ANNEXATION AGREEMENT RECORDED AS DOCUMENT 373732. THE CORPORATE LIMITS HAVE BEEN SHOWN HEREON. SEE DOCUMENT FOR PARTICULARS.

(EXCEPTION N) TRACT 1, PARCEL 2 OF THE SURVEYED PROPERTY IS INCLUDED IN A RECAPTURE AREA SHOWN ON VILLAGE OF LIBERTYVILLE ORDINANCE NO. 90-0-28 FOR THE RECAPTURE OF PAYMENTS FOR THE CONSTRUCTION OF A RESERVOIR IN LIBERTYVILLE CENTER FOR INDUSTRY. THE RECAPTURE AREA HAS NOT BEEN SHOWN HEREON. SEE DOCUMENT FOR PARTICULARS.

(EXCEPTION O AND P) THE SURVEYED PROPERTY IS SUBJECT TO AN EASEMENT TO NATURAL GAS PIPELINE COMPANY OF AMERICA PER DOCUMENTS 1397940, 589499, AND 595403. THE EASEMENT LOCATION CONTAINED IN THESE DOCUMENTS HAS BEEN FURTHER DEFINED IN AMENDMENT TO RIGHT OF WAY RECORDED AS DOCUMENT 4236890, AND HAS BEEN SHOWN HEREON.

(EXCEPTION P) THE SURVEYED PROPERTY IS SUBJECT TO A RIGHT-OF-WAY OPTION TO NATURAL GAS PIPELINE COMPANY OF AMERICA PER DOCUMENTS 589500 AND 595404, WHICH IS BLANKET IN NATURE OVER TRACT 1, PARCEL 1 AND TRACT 1, PARCEL 3 AND HAS NOT BEEN SHOWN HEREON.

(EXCEPTION Q) A PLAT OF SURVEY OF THE EXTENSION OF COUNTY HIGHWAY 48 (MIDLOTHIAN ROAD) RECORDED AS DOCUMENT 3038750 DEPICTS THE EXTENSION OF COUNTY HIGHWAY 48 ALONG THE WEST LINE OF THE SURVEYED PROPERTY. THE RIGHT-OF-WAY FOR COUNTY HIGHWAY 48 HAS BEEN SHOWN HEREON PER PLAT OF DEDICATION RECORDED AS DOCUMENT 6253287. ANY PORTION OF THE PROPOSED RIGHT-OF-WAY SHOWN ON THE PLAT OF SURVEY AND NOT SHOWN ON THE PLAT OF DEDICATION HAS NOT BEEN SHOWN HEREON.

(EXCEPTION R) TRACT 1, PARCELS 1 AND 2 OF THE SURVEYED PROPERTY IS SUBJECT TO RIGHTS OF CHICAGO TELEPHONE COMPANY, ITS SUCCESSORS AND ASSIGNS, TO MAINTAIN POLES AND WIRES ALONG THE NORTH SIDE OF THE PETERSON ROAD RIGHT OF WAY. THE EASEMENT IS BLANKET IN NATURE AND HAS NOT BEEN SHOWN HEREON.

(EXCEPTION Z) THE SURVEYED PROPERTY IS NOT SUBJECT TO EASEMENTS FOR PUBLIC UTILITIES RECORDED AS DOCUMENTS 6888943 AND 7105804. THE EASEMENTS GRANTED IN THESE DOCUMENTS ARE OFFSITE TO THE WEST OF THE SURVEYED PROPERTY AND HAVE NOT BEEN SHOWN HEREON.

(EXCEPTION AB) THE SURVEYED PROPERTY IS NOT SUBJECT TO A NORTH SHORE GAS COMPANY EASEMENT RECORDED AS DOCUMENT 1302811. THE EASEMENT FALLS IN THE PETERSON ROAD RIGHT OF WAY SOUTH OF TRACT 2, PARCEL 2.

(EXCEPTION AC) TRACT 2, PARCEL 1 AND 2 OF THE SURVEYED PROPERTY FALL WITHIN THE RECAPTURE OF COSTS AREA FOR INSTALLATION OF PUBLIC IMPROVEMENTS INSTALLED AT COUNTRYSIDE LANDFILL PER VILLAGE OF GRAYSLAKE ORDINANCE NO. 2006-0-32 RECORDED AS DOCUMENT 6234102. LIMITS OF THE RECAPTURE AREA HAVE NOT BEEN SHOWN HEREON. SEE DOCUMENT FOR PARTICULARS.

(EXCEPTION AE) TRACT 2, PARCEL 1 AND 2 OF THE SURVEYED PROPERTY HAS BEEN ANNEXED TO THE VILLAGE OF GRAYSLAKE BY VILLAGE OF GRAYSLAKE ORDINANCE NO. 2007-0-25 RECORDED AS DOCUMENT 6274023. THE CORPORATE LIMITS HAVE BEEN SHOWN HEREON. SEE DOCUMENT FOR PARTICULARS.

(EXCEPTION AF) TRACT 2, PARCEL 1 AND 2 OF THE SURVEYED PROPERTY IS SUBJECT TO VILLAGE OF GRAYSLAKE ORDINANCE 2007-0-27 GRANTING A SPECIAL USE PERMIT FOR LAKE COUNTY FAIRGROUNDS.

(EXCEPTION AG) THE SURVEYED PROPERTY IS NOT SUBJECT TO A PLAT OF DEDICATION RECORDED AS DOCUMENT 6596933. THE DEDICATION IS NORTH OF THE SURVEYED PROPERTY AND HAS NOT BEEN SHOWN HEREON.

FLOOD HAZARD NOTE

THE FEDERAL EMERGENCY MANAGEMENT AGENCY FIRM COMMUNITY PANEL NUMBER 17097C0142K WITH AN EFFECTIVE DATE OF SEPTEMBER 18, 2013 INDICATES THAT THE ABOVE DESCRIBED PROPERTY LIES WITHIN AREAS DESIGNATED AS ZONE X (UNSHADED). ZONE X (UNSHADED) IS DEFINED AS AREAS TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN PER THE FLOOD INSURANCE RATE MAPS. THIS MAP DOES NOT NECESSARILY SHOW ALL AREAS SUBJECT TO FLOODING IN THE COMMUNITY OR ALL PLANIMETRIC FEATURES OUTSIDE SPECIAL FLOOD HAZARD AREAS. THIS DOES NOT GUARANTEE THAT THE SURVEYED PROPERTY WILL OR WILL NOT FLOOD.

SHEET INDEX

SHEET 1:	LEGAL, SITE DETAILS, FEMA, TITLE INDEX AND NOTES, SURVEYORS NOTES AND CERTIFICATION
SHEET 2:	EXISTING LOT AND EASEMENT DETAILS
SHEET 3:	EXISTING IMPROVEMENTS AND TIES

LEGAL DESCRIPTION

TRACT 1:

PARCEL 1: THE EAST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 12, EXCEPT LOT 1 IN ROBERT J. MEYER'S ACRE BEING A SUBDIVISION OF PART OF EAST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 12, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED OCTOBER 27, 1956 AS DOCUMENT NUMBER 928535, EXCEPT THAT PART GRANTED FOR HIGHWAY PURPOSES BY INSTRUMENT RECORDED AS DOCUMENT NUMBER 768745 AND EXCEPT THAT PART GRANTED FOR HIGHWAY PURPOSES BY INSTRUMENT RECORDED AS DOCUMENT NUMBER 6221896; IN LAKE COUNTY, ILLINOIS.

PARCEL 2:
ALL THAT PART OF THE NORTHEAST 1/4 OF SECTION 12 LYING WESTERLY OF THE RIGHT OF WAY OF THE CHICAGO AND WISCONSIN RAILROAD COMPANY, NOW KNOWN AS THE MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE RAILWAY COMPANY, EXCEPT THE NORTH 185 FEET MEASURED PERPENDICULARLY, EXCEPT THAT PART DESCRIBED AS FOLLOWS: BEGINNING AT A POINT ON THE SOUTH LINE OF THE NORTHEAST 1/4, SAID POINT BEING 1050.7 FEET WEST OF THE SOUTHEAST CORNER OF SAID QUARTER SECTION; THENCE NORTHWESTERLY ALONG SAID RIGHT OF WAY LINE 535.1 FEET, MORE OR LESS, TO THE WEST LINE OF THE EAST 1/2 OF THE NORTHEAST 1/4 OF SAID SECTION 12; THENCE SOUTH ALONG SAID HALF QUARTER SECTION LINE 460.5 FEET, MORE OR LESS TO THE SOUTH LINE OF SAID QUARTER SECTION; THENCE EAST ALONG SAID SOUTH LINE 272.5 FEET TO THE POINT OF BEGINNING; AND EXCEPT THAT PART GRANTED FOR HIGHWAY PURPOSES BY INSTRUMENT RECORDED AS DOCUMENT 768745, AND FURTHER EXCEPTING THAT PART ACQUIRED FOR ROAD PURPOSES BY THE DEPARTMENT OF TRANSPORTATION, STATE OF ILLINOIS, IN CONDEMNATION CASE 00 ED 02, ALL IN TOWNSHIP 44 NORTH, RANGE 10, EAST OF THE THIRD PRINCIPAL MERIDIAN; IN LAKE COUNTY, ILLINOIS;

FURTHER EXCEPTING FROM PARCELS 1 AND 2 AFORESAID THAT PART OF THE NORTH 1/2 OF SECTION 12, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOW:

COMMENCING AT THE SOUTHEAST CORNER OF THE NORTHWEST QUARTER OF SAID SECTION 12; THENCE NORTHERLY ALONG THE EAST LINE OF SAID NORTHWEST QUARTER HAVING AN ILLINOIS COORDINATE SYSTEM (EAST ZONE) GRID BEARING OF NORTH 00 DEGREES 39 MINUTES 58 SECONDS WEST, A DISTANCE OF 40.00 FEET TO A POINT ON THE NORTH RIGHT-OF-WAY LINE OF PETERSON ROAD (A.K.A. COUNTY HIGHWAY 20) AS DEDICATED PER DOCUMENT NO. 768745 AND RECORDED SEPTEMBER 11, 1952, SAID POINT BEING THE POINT OF BEGINNING; THENCE NORTH 89 DEGREES 59 MINUTES 10 SECONDS WEST, 660.28 FEET ALONG SAID NORTH RIGHT-OF-WAY LINE TO A POINT ON THE WEST LINE OF THE EAST HALF OF THE SOUTHEAST QUARTER OF SAID NORTHWEST QUARTER; THENCE NORTH 00 DEGREES 39 MINUTES 40 SECONDS WEST, 70.00 FEET ALONG SAID WEST LINE; THENCE SOUTH 89 DEGREES 59 MINUTES 10 SECONDS EAST, 103.70 FEET ALONG A LINE 70.00 FEET NORTH OF AND PARALLEL WITH SAID NORTH RIGHT-OF-WAY LINE OF PETERSON ROAD TO A POINT ON A 11546.16 FOOT RADIUS CURVE, CONCAVE SOUTHERLY; THENCE EASTERLY ALONG SAID CURVE 471.18 FEET (THE CHORD BEARS SOUTH 88 DEGREES 49 MINUTES 01 SECONDS EAST, 471.15 FEET) TO A POINT ON A 50.00 FOOT RADIUS CURVE, CONCAVE NORTHWESTERLY; THENCE NORTHEASTERLY ALONG SAID CURVE 81.17 FEET (THE CHORD BEARS NORTH 45 DEGREES 50 MINUTES 35 SECONDS EAST 72.55 FEET) TO A POINT ON THE WEST RIGHT-OF-WAY LINE OF HARRIS ROAD AS DEDICATED PER ORDER OF THE FREMONT TOWNSHIP HIGHWAY COMMISSIONER ON MARCH 28, 1865; THENCE SOUTH 88 DEGREES 39 MINUTES 23 SECONDS EAST, 66.04 FEET TO A POINT ON THE EAST RIGHT-OF-WAY LINE OF SAID HARRIS ROAD, SAID POINT BEING ON A 50.00 FOOT RADIUS CURVE, CONCAVE NORTHEASTERLY; THENCE SOUTHEASTERLY ALONG SAID CURVE 77.95 FEET (THE CHORD BEARS SOUTH 45 DEGREES 19 MINUTES 34 SECONDS EAST, 70.29 FEET) TO A POINT ON A LINE 100.00 FEET NORTH OF AND PARALLEL WITH THE SOUTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 12; THENCE SOUTH 89 DEGREES, 59 MINUTES 10 SECONDS EAST, 91.61 FEET ALONG SAID PARALLEL LINE; THENCE SOUTH 86 DEGREES 10 MINUTES 20 SECONDS EAST, 601.36 FEET TO A POINT ON A LINE 60.00 FEET NORTH OF AND PARALLEL WITH SAID SOUTH LINE OF THE NORTHEAST QUARTER; THENCE SOUTH 89 DEGREES 59 MINUTES 10 SECONDS EAST, 200.01 FEET ALONG SAID PARALLEL LINE; THENCE SOUTH 00 DEGREES 00 MINUTES 50 SECONDS WEST, 10.00 FEET TO THE NORTH RIGHT-OF-WAY LINE OF SAID PETERSON ROAD AS PER DOCUMENT NO. 4586501 RECORDED SEPTEMBER 26, 2000; THENCE NORTH 89 DEGREES 59 MINUTES 10 SECONDS WEST, 940.47 FEET ALONG SAID NORTH RIGHT- OF-WAY LINE TO A POINT ON SAID EAST RIGHT-OF-WAY LINE OF HARRIS ROAD; THENCE SOUTH 00 DEGREES 39 MINUTES 58 SECONDS EAST, 10.00 FEET ALONG SAID EAST RIGHT-OF-WAY LINE TO A POINT ON SAID NORTH RIGHT-OF-WAY LINE OF PETERSON ROAD DEDICATED BY SAID DOCUMENT NO. 768745; THENCE NORTH 89 DEGREES 59 MINUTES 10 SECONDS WEST, 33.00 FEET ALONG SAID NORTH RIGHT-OF-WAY LINE TO THE POINT OF BEGINNING.

PARCEL 3:
LOT 1 IN ROBERT J. MEYER'S ACRE BEING A SUBDIVISION OF PART OF EAST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 12, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED OCTOBER 27, 1956 AS DOCUMENT NO. 928535, IN LAKE COUNTY, ILLINOIS.

TRACT 2:

PARCEL 1:
THAT PART OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 12, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN LYING EASTERLY OF THE CENTERLINE OF MIDLOTHIAN ROAD ACCORDING TO THE PLAT OF DEDICATION RECORDED OCTOBER 9, 2007 AS DOCUMENT NO. 6253287, (EXCEPT THAT PART THEREOF DEDICATED BY SAID DOCUMENT NO. 6253287) IN LAKE COUNTY, ILLINOIS.

PARCEL 2:
THAT PART OF THE WEST HALF OF THE **SOUTHEAST** QUARTER OF THE NORTHWEST QUARTER OF SECTION 12, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN LYING NORTH OF THE NORTH LINE OF PETERSON ROAD AND EAST LINE OF MIDLOTHIAN ROAD ACCORDING TO THE PLAT OF DEDICATION RECORDED OCTOBER 9, 2007 AS DOCUMENT NUMBER 6253287, IN LAKE COUNTY, ILLINOIS.

***NOTE: WORDS IN BOLD HAVE BEEN CHANGED FROM THE LEGAL DESCRIPTION CONTAINED IN THE TITLE COMMITMENT IN ORDER TO DESCRIBE THE SURVEYED PROPERTY CORRECTLY.**

SURVEY PREPARED FOR

BCI ACRYLIC BATH SYSTEMS
1800 INDUSTRIAL DR.
LIBERTYVILLE, IL 60048

BASIS OF BEARINGS

COORDINATES AND BEARINGS ARE BASED UPON THE ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE (NAD 83), ADJUSTED TO GROUND VALUES, AS ESTABLISHED BY A REAL-TIME KINEMATIC (RTK) GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) UTILIZING THE TRIMBLE VRS NOW NETWORK.

SURVEYOR'S NOTES

1. DISTANCES ARE MARKED IN FEET AND DECIMAL PLACES THEREOF. NO DIMENSION SHALL BE ASSUMED BY SCALE MEASUREMENT HEREON. DISTANCES AND/OR BEARINGS SHOWN IN PARENTHESIS (456.67') ARE RECORD OR DEED VALUES, NOT FIELD MEASURED.

2. COMPARE THIS PLAT, LEGAL DESCRIPTION AND ALL SURVEY MONUMENTS BEFORE BUILDING, AND IMMEDIATELY REPORT ANY DISCREPANCIES TO THE SURVEYOR.

3. THE LOCATION OF THE PROPERTY LINES SHOWN ON THE FACE OF THIS PLAT ARE BASED ON THE LEGAL DESCRIPTION CONTAINED IN THE TITLE COMMITMENT AND SHOWN HEREON. THIS INFORMATION HAS BEEN FURNISHED BY THE CLIENT AND COMPARED TO RECORD DEEDS TO CHECK FOR GAPS AND/OR OVERLAPS. HOWEVER, THIS SURVEY MAY NOT REFLECT HISTORICAL MATTERS OF TITLE AND OWNERSHIP THAT HAVE NOT BEEN DISCLOSED BY THE TITLE COMMITMENT.

4. UNLESS OTHERWISE NOTED, ONLY THE IMPROVEMENTS WHICH WERE VISIBLE FROM ABOVE GROUND AT TIME OF SURVEY AND THROUGH A NORMAL SEARCH AND WALK THROUGH OF THE SITE ARE SHOWN ON THE FACE OF THIS PLAT. LAWN SPRINKLER SYSTEMS, IF ANY, ARE NOT SHOWN ON THIS SURVEY.

5. MANHOLES, INLETS AND OTHER UTILITY RIMS OR GRATES SHOWN HEREON ARE FROM FIELD LOCATION OF SUCH, AND ONLY REPRESENT SUCH UTILITY IMPROVEMENTS WHICH ARE VISIBLE FROM ABOVE GROUND AT TIME OF SURVEY, THROUGH A NORMAL SEARCH AND WALK THROUGH OF THE SITE. THE LABELING OF THESE MANHOLES (SANITARY, WATER, ETC.) IS BASED SOLELY ON THE "STAMPED" MARKINGS ON THE RIM. NO UNDERGROUND OBSERVATIONS HAVE BEEN MADE TO VERIFY THE ACTUAL USE OR EXISTENCE OF UNDERGROUND UTILITIES.

6. SURFACE INDICATIONS OF UTILITIES ON THE SURVEYED PARCEL HAVE BEEN SHOWN. UNDERGROUND AND OFFSITE OBSERVATIONS HAVE NOT BEEN MADE TO DETERMINE THE EXTENT OF UTILITIES SERVING OR EXISTING ON THE PROPERTY. PUBLIC AND/OR PRIVATE RECORDS HAVE NOT BEEN SEARCHED TO PROVIDE ADDITIONAL INFORMATION. OVERHEAD WIRES AND POLES (IF ANY) HAVE BEEN SHOWN, HOWEVER THEIR FUNCTION AND DIMENSIONS HAVE NOT BEEN SHOWN.

7. THIS SURVEY MAY NOT REFLECT ALL UTILITIES, OR IMPROVEMENTS, IF SUCH ITEMS ARE HIDDEN BY LANDSCAPING, OR ARE COVERED BY SUCH ITEMS AS DUMPSTERS OR TRAILERS, OR WHEN THE SITE WAS COVERED WITH SNOW. AT THE TIME OF SURVEY, THE SITE WAS NOT COVERED BY SNOW. OVERHEAD WIRES AND POLES (IF ANY) HAVE BEEN SHOWN, HOWEVER THEIR FUNCTION AND DIMENSIONS HAVE NOT BEEN SHOWN.

8. OTHER THAN VISIBLE OBSERVATIONS NOTED HEREON, THIS SURVEY MAKES NO STATEMENT REGARDING THE ACTUAL PRESENCE OR ABSENCE OF ANY SERVICE OR UTILITY LINE. CONTROLLED UNDERGROUND EXPLORATORY EFFORT TOGETHER WITH "JULIE" MARKINGS IS RECOMMENDED TO DETERMINE THE FULL EXTENT OF UNDERGROUND SERVICE AND UTILITY LINES. CONTACT J.U.L.I.E. AT 1-800-892-0123.

9. THE SURVEYED PROPERTY MAY HAVE A DRAINTILE SYSTEM, WHICH HAS NOT BEEN SURVEYED OR SHOWN HEREON. IN ORDER TO DETERMINE IF A DRAINTILE SYSTEM DOES EXIST ON THE SUBJECT PROPERTY, AND TO WHAT EXTENT, A DETAILED DRAINTILE STUDY MUST BE COMPLETED BY THE APPROPRIATE PROFESSIONAL.

10. RESTRICTIONS THAT MAY BE FOUND IN LOCAL BUILDING AND/OR ZONING CODES HAVE NOT BEEN SHOWN. HEIGHT AND BULK RESTRICTIONS (IF ANY) HAVE NOT BEEN SHOWN. ONLY THOSE SETBACK RESTRICTIONS SHOWN ON THE RECORDED SUBDIVISION PLAT OR IN THE TITLE COMMITMENT HAVE BEEN SHOWN.

SURVEYOR CERTIFICATE:

STATE OF ILLINOIS)
) SS
COUNTY OF LAKE)

CERTIFIED TO: CHICAGO TITLE INSURANCE COMPANY
AND: ASTON VILLA LAND PARTNERS, LLC
AND: NORTHBROOK PROPERTIES, INC. AN ILLINOIS CORPORATION

THIS IS TO CERTIFY THAT THIS MAP OR PLAT 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 2, 3, 4, 8, 14 AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON DECEMBER 16, 2022.

DATED THIS 23RD DAY OF DECEMBER, A.D., 2022.

Jacob A. Dunham

ILLINOIS PROFESSIONAL LAND SURVEYOR NO. 3966
EMAIL ADDRESS: JDUNHAM@MANHARD.COM
LICENSE EXPIRES NOVEMBER 30, 2024

JACOB A. DUNHAM
ILLINOIS PROFESSIONAL LAND SURVEYOR NO. 3966
LINCOLNSHIRE, ILLINOIS

DESIGN FIRM PROFESSIONAL LICENSE NO. 184003350
LICENSE EXPIRES APRIL 30, 2023.

REVISIONS			DRAWN BY
DATE			
12/23/22	REVISED LEGAL DESCRIPTION		JD

Manhard CONSULTING
One Overlook Point, Suite 250 Lincolnshire, IL 60069 p:847.634.0200 f:847.634.0066 manhard.com
Civil Engineers • Land Surveyors • Water Resource Engineers • Municipal Advisors • Water Resource Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

NORTHEAST CORNER OF PETERSON ROAD AND MIDLOTHIAN ROAD
GRAYSLAKE AND LIBERTYVILLE, ILLINOIS
ALTA/NSPS LAND TITLE SURVEY

PROJ. MGR.:	JF
PROJ. ASSOC.:	JJD
DRAWN BY:	AAS
DATE:	12/16/22
SCALE:	N/A

SHEET 1 OF 3

BCALYIL01

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December 23, 2022 - 14:17 Dwg Name: \\nic-sh-nas\Projects-WI\Beloit\03\data\Surv\Final Drawings\Misc Survey\03-BCALYIL01-SA.dwg Updated By: rbohlman

ALTA/NSPS LAND TITLE SURVEY

GRAPHIC SCALE
120 0 60 120 240 480
(IN FEET)
1 inch = 120 ft.

SECTION CORNER 2 1 11 12 T.44 N. R.10 E. — FOUND 5/8" IRON ROD AT CORNER

SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 1-44-10
S89°55'56"E 2640.33'
NORTH LINE OF THE NORTHWEST QUARTER OF SECTION 12-44-10
ALSO BEING NORTH LINE OF COMMON WEALTH EDISON RIGHT-OF-WAY

FOUND BRONZE LCDOT MONUMENT AT CORNER
QUARTER CORNER 1 12 T.44 N. R.10 E.
FOUND BRONZE LCDOT MONUMENT ON LINE AND 22.74' S
FOUND 3/4" IRON PIPE WITH CAP ON LINE AND 7.15' W
FOUND 3/4" IRON PIPE WITH CAP AT CORNER
EXCEPTION TO TRACT 1, PARCEL 2
FOUND 1/2" IRON PIPE WITH CAP AT CORNER

SECTION CORNER 1 6 12 7 T.44 N. R.10 E. R.11 E. — FOUND 1/2" IRON PIPE AT CORNER PER MONUMENT RECORD RECORDED AS DOCUMENT 3834538

SOUTH LINE OF THE SOUTHEAST QUARTER OF SECTION 1-44-10
N89°58'17"E 2636.85'
NORTH LINE OF THE NORTHEAST QUARTER OF SECTION 12-44-10
ALSO BEING NORTH LINE OF COMMON WEALTH EDISON RIGHT-OF-WAY

185.00'

COMMONWEALTH EDISON RIGHT-OF-WAY

N89°58'17"E 173.93'
FOUND 3/4" IRON PIPE ON LINE AND 2.82' SE

N00°39'58"W (244.32') 244.30'

100.00'
50.00'

APPROXIMATE LOCATION OF NORTHSHORE GAS EASEMENT PER DOCUMENT 2744896 (EXCEPTION M)

HERETOFORE DEDICATED PER ORDER OF THE FREMONT TOWNSHIP HIGHWAY COMMISSIONER, MARCH 28, 1865

CENTERLINE OF HARRIS ROAD

120.00'
60.00' 60.00'
HERETOFORE DEDICATED PER DOCUMENT NUMBER 6253287
CH=N33°43'45"E N.M.M. R=1408.13' L=862.62'
(COUNTY HIGHWAY 48)

21.00'
5.00'
33.00'
66.00'

NORTH SHORE GAS COMPANY EASEMENT PER DOCUMENT 1999-4431563 (EXCEPTION AA)

EXCEPTION TO TRACT 2, PARCEL 1

N51°13'10"E 112.47' (112.41')
FOUND 3/4" IRON PIPE 0.24' NE AND ON LINE

PART OF TRACT 2, PARCEL 1
PIN: PART OF 10-12-100-022

R=35.00' L=50.79'
CH=S87°12'26"E 46.45'

EXCEPTION TO TRACT 2, PARCEL 1
FOUND 3/4" IRON PIPE 0.08' NE AND 0.20' NW
N51°13'10"E 119.55'

PART OF TRACT 2, PARCEL 1
UNSUBDIVIDED LAND
PIN: 10-12-100-020

R=35.00' L=62.02'
CH=N20°27'08"E 54.22'
EXCEPTION TO TRACT 2, PARCEL 1

R=257.00' L=177.76'
CH=N70°07'49"W 174.24'

SOUTH LINE OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 12-44-10
FOUND PK NAIL ON LINE AND 0.16' E
N00°39'58"W 2639.31'

S89°56'40"E 217.99'

R=337.00' L=23.56'
CH=S47°38'12"E 23.55'

FOUND 3/4" IRON PIPE AT CORNER
FOUND 3/4" IRON PIPE 0.09' SE AND 0.11' NW

NORTH LINE OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 12-44-10

SOUTH LINE OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 12-44-10
NORTH LINE OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 12-44-10

EAST LINE OF THE NORTHEAST QUARTER OF SECTION 11-44-10
N00°39'01"W 2644.76'
WEST LINE OF THE NORTHWEST QUARTER OF SECTION 12-44-10

EAST LINE OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 12-44-10
WEST LINE OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 12-44-10

MIDLOTHIAN ROAD
WESTERLY RIGHT-OF-WAY LINE OF MIDLOTHIAN ROAD PER DOCUMENT NUMBER 6253287
HERETOFORE DEDICATED PER DOCUMENT NUMBER 6253287
CENTERLINE OF MIDLOTHIAN ROAD PER DOCUMENT NUMBER 6253287
EASTERLY RIGHT-OF-WAY LINE OF MIDLOTHIAN ROAD PER DOCUMENT NUMBER 6253287
60.00' 60.00'
120.00'
CH=S03°07'25"E R=1288.14' L=1150.53'
TRUE

FOUND 5/8" IRON ROD AT CORNER

HARRIS ROAD
EAST LINE OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 12-44-10
WEST LINE OF THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 12-44-10
N00°39'58"W 2639.31'

EAST LINE OF THE WEST HALF OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 12-44-10
WEST LINE OF THE EAST HALF OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 12-44-10

NORTH SHORE GAS COMPANY EASEMENT PER DOCUMENT 1999-4445127 (EXCEPTION U)

TRACT 1, PARCEL 2
UNSUBDIVIDED LAND
PIN: 10-12-200-013

TRACT 1 , PARCEL 1
UNSUBDIVIDED LAND
PIN: 10-12-100-016

TRACT 2, PARCEL 2
UNSUBDIVIDED LAND
PIN: PART OF 10-12-100-022

TRACT 1, PARCEL 3
EXCEPTION TO TRACT 1, PARCEL 1
LOT 1
ROBERT J. MEYER'S ACRE SUBDIVISION
RECORDED OCTOBER 27, 1956 AS DOCUMENT NUMBER 928535
PIN: 10-12-101-001

WINNEAPOLIS ST. PAUL AND SAULT STE. MARIE RAILWAY COMPANY (F.K.A. CHICAGO AND WISCONSIN RAILROAD COMPANY)
S30°29'50"E 2306.25'
PIPELINE EASEMENT PER DOCUMENT NUMBERS 2563344 AND 3477 (EXCEPTION L)

30.00'
21.00'
5.00'
10.00'
66.00'
33.00'

APPROXIMATE LOCATION OF NORTHSHORE GAS EASEMENT PER DOCUMENT 2744896 (EXCEPTION M)

NORTH SHORE GAS COMPANY EASEMENT PER DOCUMENT 2007-6224348 (EXCEPTION V)

HERETOFORE DEDICATED PER ORDER OF THE FREMONT TOWNSHIP HIGHWAY COMMISSIONER, MARCH 28, 1865

FOUND 3/4" IRON PIPE AT CORNER
N00°02'40"E 99.17'
FOUND 3/4" IRON PIPE AT CORNER
60.00' 60.00'
120.00'
R=50.00' L=78.57'
CH=N44°58'14"W 70.73'
FOUND 3/4" IRON PIPE 0.52' S AND ON LINE
FOUND 5/8" IRON ROD ON LINE AND 0.14' W

FOUND LCDOT BRONZE SURVEY MARKER AT CORNER PER MONUMENT RECORD RECORDED AS DOCUMENT 7258861

N89°59'08"W 669.34'
565.64'
NORTHERLY RIGHT-OF-WAY LINE OF PETERSON ROAD PER DOCUMENT NUMBER 6253287
HERETOFORE DEDICATED PER DOCUMENT NUMBER 6253287
SOUTH LINE OF THE NORTHWEST QUARTER OF SECTION 12-44-10
NORTH SHORE GAS EASEMENT PER DOCUMENT 1302811 (EXCEPTION AB)
NORTH LINE OF THE SOUTHWEST QUARTER OF SECTION 12-44-10
CENTERLINE OF PETERSON ROAD
HERETOFORE DEDICATED PER DOCUMENT NUMBER 768745
HERETOFORE DEDICATED PER DOCUMENT NUMBER 6188973
SOUTHERLY RIGHT-OF-WAY LINE OF PETERSON ROAD PER DOCUMENT NUMBER 6188973
87.00' 160.00' 50.00' 23.00' 20.00'
N89°59'08"W 2640.83'

PETERSON ROAD

FOUND 3/4" IRON PIPE AT CORNER
FOUND 5/8" IRON ROD WITH CAP ON LINE AND 0.18' W
FOUND 5/8" IRON ROD WITH CAP 0.14' S AND 0.11' W
NORTHERLY RIGHT-OF-WAY LINE OF PETERSON ROAD PER DOCUMENT NUMBER 6715543
CH=N88°49'00"W 471.09' (471.15')
R=11546.16' L=471.13' (L=471.18')
FOUND 5/8" IRON ROD WITH CAP 0.24' S AND ON LINE
103.70' 70.00' 70.00'
HERETOFORE DEDICATED PER DOCUMENT NUMBER 6715543
EXCEPTION TO TRACT 1, PARCEL 1
N89°59'08"W 660.23' (660.28')
POINT OF COMMENCEMENT EXCEPTION TO TRACT 1, PARCEL 1 AND PARCEL 2
FOUND 5/8" IRON ROD WITH CAP ON LINE AND 0.18' W
HERETOFORE DEDICATED PER DOCUMENT NUMBER 6188973
SOUTHERLY RIGHT-OF-WAY LINE OF PETERSON ROAD PER DOCUMENT NUMBER 6188973

FOUND LCDOT BRONZE SURVEY MARKER 1.39' S AND 0.14' E PER MONUMENT RECORD RECORDED AS DOCUMENT 7258862
NOTE: THE LCDOT MONUMENT WAS NOT HELD ON THE PLAT OF DEDICATION FOR PETERSON ROAD

HARRIS ROAD
N00°39'58"W 262.22'

FOUND 5/8" IRON ROD WITH CAP AT CORNER
POINT OF BEGINNING EXCEPTION TO TRACT 1, PARCEL 1 AND PARCEL 2
NORTH LINE OF THE SOUTHEAST QUARTER OF SECTION 12-44-10
SOUTHERLY RIGHT-OF-WAY LINE OF PETERSON ROAD PER DOCUMENT NUMBER 4474263
HERETOFORE DEDICATED PER DOCUMENT NUMBER 4474263

FOUND 5/8" IRON ROD WITH CAP 0.08' S AND ON LINE
R=50.00' L=81.17'
CH=S45°50'35"W 72.55'
FOUND 5/8" IRON ROD WITH CAP 0.24' S AND ON LINE
N89°59'08"W 91.64' (91.61')
HERETOFORE DEDICATED PER DOCUMENT NUMBER 6221896
EXCEPTION TO TRACT 1, PARCEL 1
N89°59'08"W 940.49' (940.47')
SOUTH LINE OF THE NORTHEAST QUARTER OF SECTION 12-44-10
HERETOFORE DEDICATED PER DOCUMENT NUMBER 4590501
EXCEPTION TO TRACT 1, PARCEL 2
HERETOFORE DEDICATED PER DOCUMENT NUMBER 768745
EXCEPTION TO TRACT 1, PARCEL 2
HERETOFORE DEDICATED PER DOCUMENT NUMBER 4474263

FOUND 5/8" IRON ROD WITH CAP 0.14' S AND ON LINE
N86°10'18"W 601.36'
FOUND 5/8" IRON ROD WITH CAP 0.10' S AND ON LINE
FOUND 5/8" IRON ROD 0.15' S AND 0.18' W
S89°59'08"E 2643.28'
FOUND 1/2" IRON PIPE 0.67' S AND 0.22' E
FOUND 1/2" IRON 0.98' S AND ON LINE

NATURAL GAS PIPE LINE COMPANY OF AMERICA EASEMENT PER DOCUMENT NUMBER 1998-4236890 (EXCEPTION O AND P)

CATHODIC PROTECTION AREA PER DOCUMENT NUMBER 2011-6763775 (EXCEPTION W)
APPROXIMATE LOCATION OF CATHODIC PROTECTION GROUNDBED PER DOCUMENT NUMBER 2011-6763775 (EXCEPTION W)

FOUND 5/8" IRON ROD WITH CAP 1.12' SW AND 1.75' W
PIPELINE EASEMENT PER DOCUMENT NUMBERS 2563341 AND 3414077 (EXCEPTION L)
SURFACE EASEMENT PER DOCUMENT 1998-4131569 (EXCEPTION T)
40.00'
25.00'
S00°44'24"E 417.40'
(416.40') (416.51')
S30°29'50"E 524.48' (524.1')
260.00'
N00°00'52"E 10.00'
N89°59'08"W 348.29'
POINT OF BEGINNING EXCEPTION TO TRACT 1, PARCEL 2
180.00'
CENTERLINE OF PETERSON ROAD
HERETOFORE DEDICATED PER DOCUMENT NUMBER 5978424
FOUND 3/4" BENT IRON PIPE 0.82' S AND 0.71' E

FOUND 3/4" IRON PIPE 0.16' NE
FOUND 5/8" IRON ROD ON LINE
UNSUBDIVIDED LAND
EXCEPTION TO TRACT 1, PARCEL 2
PIN: 10-12-200-009
FOUND 3/4" IRON PIPE ON LINE
FOUND 3/4" IRON PIPE ON LINE
FOUND CUT CROSS AT CORNER PER MONUMENT RECORD RECORDED AS DOCUMENT 6616044
ROADWAY EASEMENT PER DOCUMENT NUMBER 4522254
269.27' (272.5')
1062.16' (1050.7')
44.00'
254.56'
110.00'

SECTION CORNER 11 12 14 13 T.44 N. R.10 E. — FOUND 1" REBAR AT CORNER PER MONUMENT RECORD RECORDED AS DOCUMENT 7832848

SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 12-44-10
N89°56'28"W 2645.98'
NORTH LINE OF THE NORTHWEST QUARTER OF SECTION 13-44-10

EAST LINE OF THE SOUTHEAST QUARTER OF SECTION 11-44-10
WEST LINE OF THE SOUTHEAST QUARTER OF SECTION 12-44-10
QUARTER CORNER 12 13 T.44 N. R.10 E.
FOUND BRONZE LCDOT MONUMENT AT CORNER PER MONUMENT RECORD RECORDED AS DOCUMENT 6616044

SOUTH LINE OF THE SOUTHEAST QUARTER OF SECTION 12-44-10
S89°50'55"W 2633.38'
NORTH LINE OF THE NORTHEAST QUARTER OF SECTION 13-44-10

SECTION CORNER 12 7 13 18 T.44 N. R.10 E. R.11 E. — FOUND HOLE IN CONCRETE MONUMENT AT CORNER PER MONUMENT RECORD RECORDED AS DOCUMENT 4561343

EAST LINE OF THE NORTHEAST QUARTER OF SECTION 12-44-10
N00°46'10"W 2641.57'
WEST LINE OF THE NORTHWEST QUARTER OF SECTION 7-44-11
N00°27'53"W 2645.61'

EAST LINE OF THE SOUTHWEST QUARTER OF SECTION 11-44-10
N00°33'20"W 2654.17'
WEST LINE OF THE NORTHWEST QUARTER OF SECTION 12-44-10

EAST LINE OF THE NORTHEAST QUARTER OF SECTION 11-44-10
N00°39'01"W 2644.76'
WEST LINE OF THE NORTHWEST QUARTER OF SECTION 12-44-10

N

REVISIONS | DRAWN BY | DATE

Manhard CONSULTING
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Construction Managers • Environmental Scientists • Landscape Architects • Planners

NORTHEAST CORNER OF PETERSON ROAD AND MIDLOTHIAN ROAD
GRAYSLAKE AND LIBERTYVILLE, ILLINOIS
ALTA/NSPS LAND TITLE SURVEY

PROJ. MGR.: JF
PROJ. ASSOC.: JJD
DRAWN BY: AAS
DATE: 12/16/22
SCALE: 1"=120'

SHEET 2 OF 3
BCALYIL01

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December 22, 2022 - 14:32 Dwg Name: P:\Bcal\yil01\dwg\Survey\Final Drawings\Alta Survey\02-BCALYIL01-54.dwg Unsaved By: jjohnson

ALTA/NSPS LAND TITLE SURVEY

LEGEND

- = EX. PROPERTY LINE
- = EX. EASEMENT LINE
- = EX. SECTION LINE
- = EX. CONCRETE CURB & GUTTER
- = EX. DEPRESSED CURB
- = EX. CHAIN-LINK FENCE
- = EX. OVERHEAD WIRES
- = EX. TREE/BRUSH LINE
- = EX. MISCELLANEOUS MANHOLE (MH)
- = EX. STORM MANHOLE (MH)
- = EX. STORM CATCH BASIN (CB)
- = EX. STORM INLET (INL)
- = EX. FLARED END SECTION (FES)
- = EX. RIP-RAP
- = EX. FIRE HYDRANT/AUX. VALVE
- = EX. VALVE BOX
- = EX. VALVE VAULT (V.V.)
- = EX. WATER VENT
- = EX. WATER MARKER
- = EX. WATER MARKER POST
- = EX. GAS VALVE
- = EX. GAS VENT
- = EX. GAS MANHOLE
- = EX. JULIE GAS MARKER
- = EX. GAS MARKER POST
- = EX. ELECTRICAL MANHOLE
- = EX. ELECTRIC HANDHOLE
- = EX. ELECTRIC PEDESTAL/BOX
- = EX. JULIE ELECTRIC MARKER
- = EX. ELECTRIC MARKER POST
- = EX. TRAFFIC SIGNAL MANHOLE
- = EX. TRAFFIC SIGNAL HANDHOLE
- = EX. TRAFFIC SIGNAL CONTROL BOX
- = EX. TRAFFIC SIGNAL
- = EX. TRAFFIC SIGNAL WITH ARM
- = EX. HANDHOLE
- = EX. TELEPHONE MANHOLE
- = EX. TELEPHONE HANDHOLE
- = EX. TELEPHONE PEDESTAL
- = EX. TELEPHONE MARKER POST
- = EX. UTILITY POLE
- = EX. UTILITY POLE WITH LIGHT
- = EX. GUY WIRE
- = EX. LIGHT STANDARD
- = EX. STREET LIGHT
- = EX. SIGN
- = EX. POST
- = EX. BITUMINOUS PAVEMENT
- = EX. CONCRETE
- = EX. AGGREGATE
- = EX. BRICK

N

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

MIDLOTHIAN ROAD

PETERSON ROAD

TRACT 1 PARCEL 1

TRACT 1 PARCEL 2

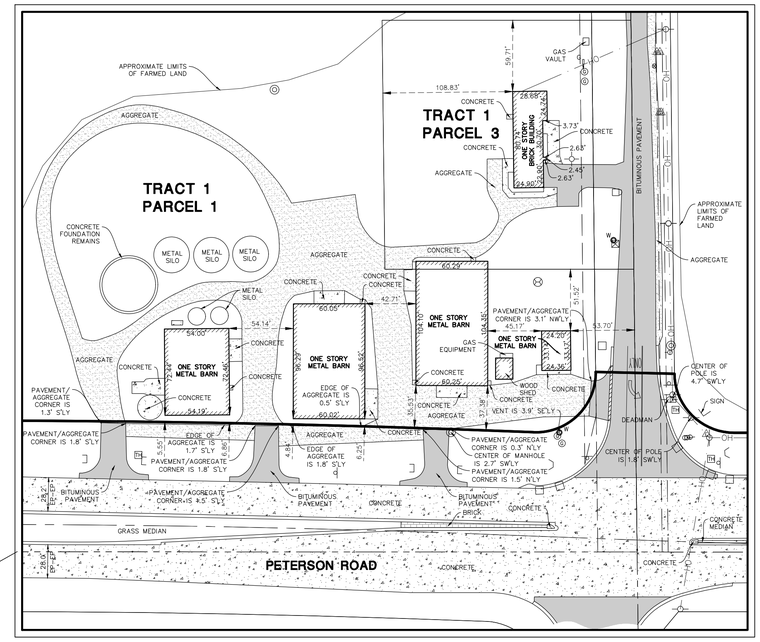
TRACT 1 PARCEL 3

TRACT 2 PARCEL 1

TRACT 2 PARCEL 2

MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE RAILWAY COMPANY (F.K.A. CHICAGO AND WISCONSIN RAILROAD COMPANY)

SEE DETAIL



DETAIL

SCALE 1"=60'

DRAWN BY

REVISIONS

DATE

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Structural Engineers • Mechanical, Electrical & Plumbing Engineers • Fire Protection Engineers
Environmental Scientists • Landscape Architects • Planners
Construction Managers • Environmental Consultants

NORTHEAST CORNER OF PETERSON ROAD AND MIDLOTHIAN ROAD

GRAYSLAKE AND LIBERTYVILLE, ILLINOIS

ALTA/NSPS LAND TITLE SURVEY

PROJ. MGR.: JF
PROJ. ASSOC.: JID
DRAWN BY: AAS
DATE: 12/16/22
SCALE: 1"=100'

SHEET 3 OF 3

BCALYIL01

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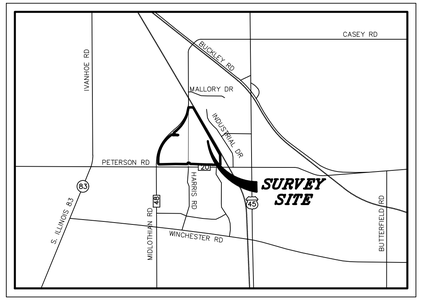
December 21, 2022 – 10:43 Data Name: P:\Bcal\01\Data\Survey\Final Drawings\Alta_Survey\V01-BCALYIL01-SA.dwg Updated By: ASlover

PRELIMINARY PLAT
OF
BCI INDUSTRIAL SUBDIVISION

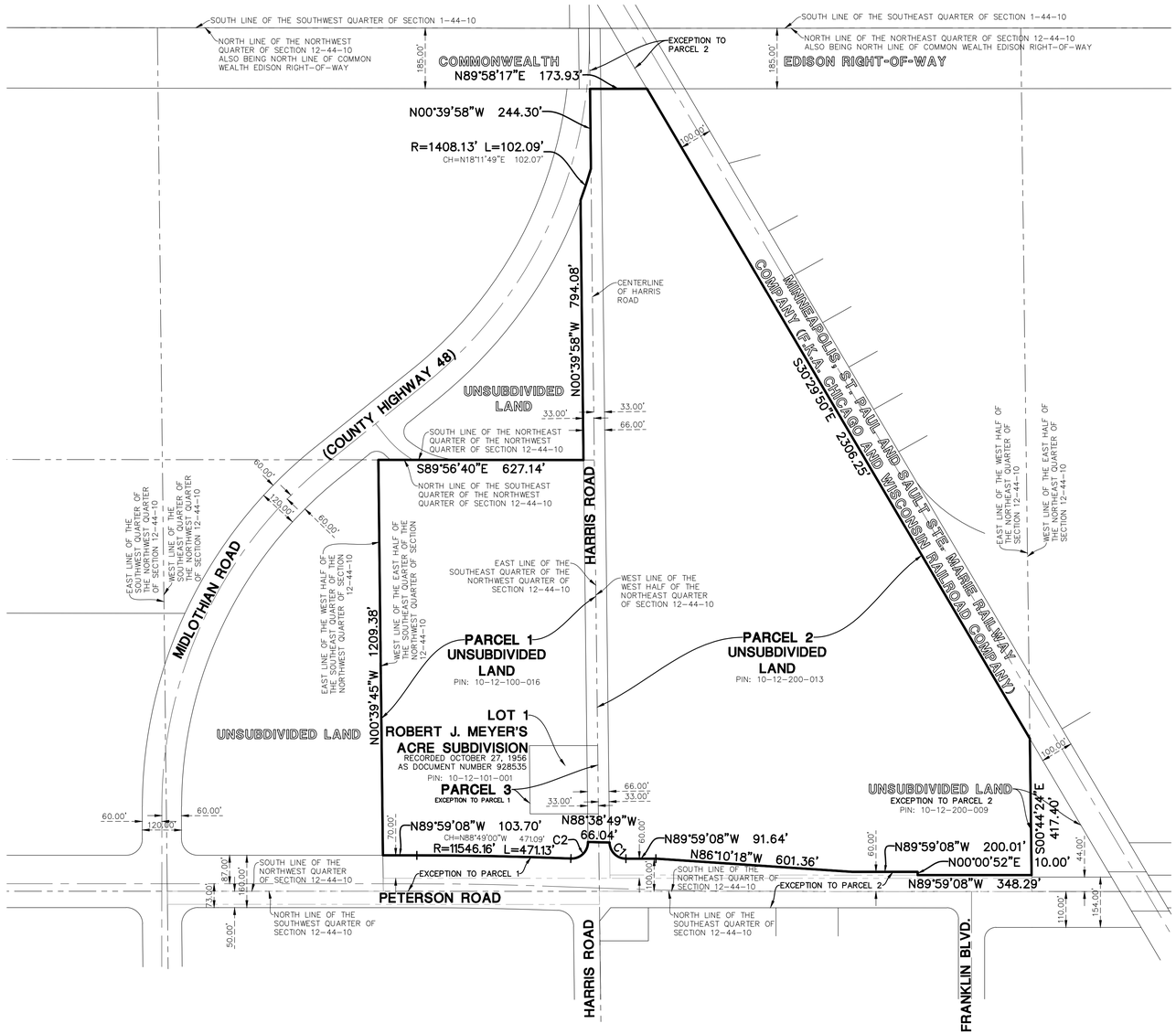
BEING A SUBDIVISION OF PART OF THE NORTHWEST QUARTER AND THE NORTHEAST QUARTER OF SECTION 12, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN LAKE COUNTY, ILLINOIS.



LOCATION MAP

NOT TO SCALE

CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD
C1	89°19'10"	50.00'	77.95'	N45°19'33"W	70.29'
C2	93°01'06"	50.00'	81.17'	S45°50'35"W	72.55'



SHEET INDEX

SHEET 1 OF 5:	EXISTING BOUNDARY
SHEETS 2-3 OF 5:	PROPOSED LOT AND EASEMENT DETAILS
SHEET 4 OF 5:	HARRIS ROAD RIGHT-OF-WAY VACATION
SHEET 5 OF 5:	PROVISIONS AND CERTIFICATES

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

BASIS OF BEARINGS

COORDINATES AND BEARINGS ARE BASED UPON THE ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE (NAD 83), ADJUSTED TO GROUND VALUES, AS ESTABLISHED BY A REAL-TIME KINEMATIC (RTK) GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) UTILIZING THE TRIMBLE VRS NOW NETWORK.

SURVEY PREPARED FOR

BCI ACRYLIC BATH SYSTEMS
1800 INDUSTRIAL DR.
LIBERTYVILLE, IL 60048

SUBMITTED BY/RETURN TO:

VILLAGE OF LIBERTYVILLE
118 W COOK AVENUE
LIBERTYVILLE, IL 60048

ABBREVIATIONS

P.U.E. = PUBLIC UTILITY EASEMENT

PROPERTY AREA

LOT AREA = 2,282,313 SQ. FT. (52.395 ACRES)
OUTLOT AREA = 498,102 SQ. FT. (11.435 ACRES)
PETERSON ROAD RIGHT-OF-WAY AREA = 51,717 SQ. FT. (1.187 ACRES)
TOTAL AREA = 2,832,132 SQ. FT. (65.017 ACRES)

PIN'S

10-12-101-001
10-12-100-016
10-12-200-013

SURVEYOR'S NOTES

1. THIS SUBDIVISION CONSISTS OF 3 LOTS AND 2 OUTLOTS AND ARE PART OF AN INTEGRAL NUMBERING SYSTEM TO EMBRACE ALL OF BCI INDUSTRIAL SUBDIVISION.

2. DISTANCES ARE MARKED IN FEET AND DECIMAL PLACES THEREOF. NO DIMENSION SHALL BE ASSUMED BY SCALE MEASUREMENT HEREON. DISTANCES AND/OR BEARINGS SHOWN IN PARENTHESIS (456.67') ARE RECORD OR DEED VALUES.)

3. THIS SUBDIVISION MAY BE SUBJECT TO MATTERS OF TITLE, WHICH MAY BE REVEALED BY A CURRENT TITLE REPORT. PRE-EXISTING EASEMENTS, SETBACKS AND OTHER RESTRICTIONS WHICH MAY BE FOUND IN A CURRENT TITLE REPORT, LOCAL ORDINANCES, DEEDS OR OTHER INSTRUMENTS OF RECORD MAY NOT BE SHOWN.

4. THIS PROFESSIONAL SERVICE CONFORMS TO THE CURRENT ILLINOIS MINIMUM STANDARDS FOR A BOUNDARY SURVEY. MANHARD CONSULTING, LTD. IS A PROFESSIONAL DESIGN FIRM, REGISTRATION NUMBER 184003350, EXPIRES APRIL 30, 2027.

DATE	REVISIONS	DRAWN BY
12/1/25	REVISED PER VILLAGE COMMENTS	PGA

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Civil Engineers • Water Resource Engineers • Water & Wastewater Engineers
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BCI INDUSTRIAL SUBDIVISION
LIBERTYVILLE, ILLINOIS
PRELIMINARY PLAT OF SUBDIVISION

PROJ. MGR.:	JP
PROJ. ASSOC.:	JID
DRAWN BY:	PGA
DATE:	10/09/25
SCALE:	1"=200'

SHEET
1 OF 5
BCALYIL01

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December 1, 2025 - 09:11 Dwg Name: P:\Bcalyil01\Data\Survey\Final Drawings\Plat of Subdivision\Preliminary Plat\Liberty\yil01-01-17-PR.dwg Updated By: pjanderson

PRELIMINARY PLAT
OF
BCI INDUSTRIAL SUBDIVISION

BEING A SUBDIVISION OF PART OF THE NORTHWEST QUARTER AND THE NORTHEAST QUARTER OF SECTION 12, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN LAKE COUNTY, ILLINOIS.

GRAPHIC SCALE
80 0 40 80 160 320
(IN FEET)
1 inch = 80 ft.

SEE SHEET 3

CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD
C1	89°19'10"	50.00'	77.95'	N45°19'33"W	70.29'
C2	93°01'06"	50.00'	81.17'	S45°50'35"W	72.55'

ABBREVIATIONS

P.U.E. = PUBLIC UTILITY EASEMENT
= PRIVATE WATERMAIN EASEMENT HEREBY GRANTED
= VILLAGE WATERMAIN EASEMENT HEREBY GRANTED
= SANITARY EASEMENT HEREBY GRANTED
= STORMWATER MANAGEMENT EASEMENT HEREBY GRANTED
= CROSS ACCESS EASEMENT HEREBY GRANTED

REVISIONS			DRAWN BY
DATE			
12/1/25	REVISED PER VILLAGE COMMENTS		PGA

Manhard CONSULTING
One Overlook Point, Suite 250, Lincolnshire, IL 60069 p:847.634.5500 f:847.634.0066
Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners
manhard.com

BCI INDUSTRIAL SUBDIVISION
LIBERTYVILLE, ILLINOIS
PRELIMINARY PLAT OF SUBDIVISION

PROJ. MGR.:	JP
PROJ. ASSOC.:	JID
DRAWN BY:	PGA
DATE:	10/09/25
SCALE:	1"=80'

SHEET 2 OF 5
BCALYIL01

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December 1, 2025 - 10:53 Dwg Name: P:\Eng\001\Civil\Survey\Final (Drawings)\Plat of Subdivision\Preliminary Plat\LibertyVille\YOS-05-BCALYIL01-LY-PRE.dwg Updated By: pjanderson

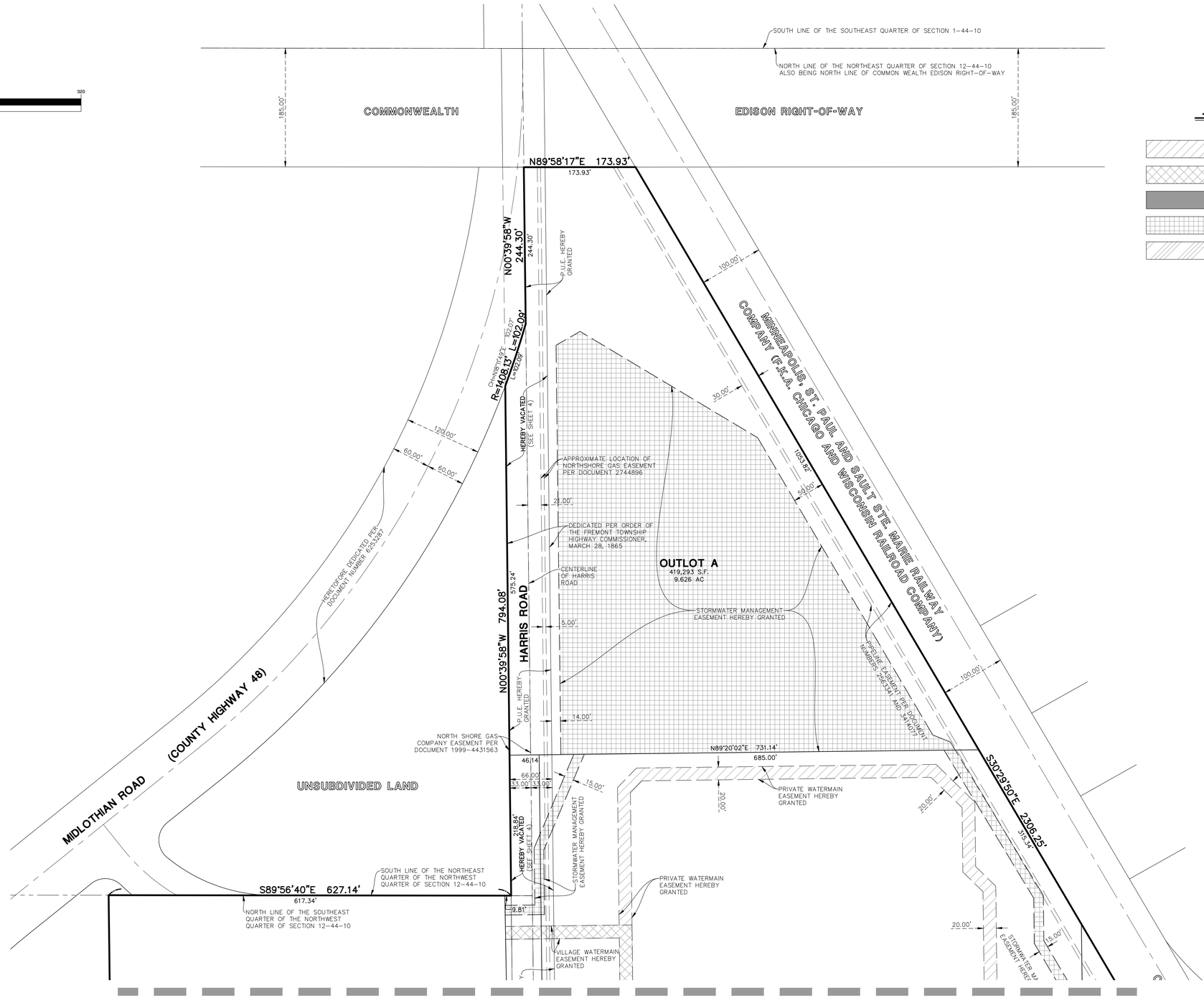
PRELIMINARY PLAT
OF
BCI INDUSTRIAL SUBDIVISION

BEING A SUBDIVISION OF PART OF THE NORTHWEST QUARTER AND THE NORTHEAST QUARTER OF SECTION 12, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN LAKE COUNTY, ILLINOIS.

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.



SEE SHEET 2

ABBREVIATIONS

P.U.E. = PUBLIC UTILITY EASEMENT

= PRIVATE WATERMAIN EASEMENT HEREBY GRANTED

= VILLAGE WATERMAIN EASEMENT HEREBY GRANTED

= SANITARY EASEMENT HEREBY GRANTED

= STORMWATER MANAGEMENT EASEMENT HEREBY GRANTED

= CROSS ACCESS EASEMENT HEREBY GRANTED

DRAWN BY	REVISIONS	DATE
PGA	REVISED PER VILLAGE COMMENTS	12/1/25

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Civil Engineers • Water Resource Engineers • Structural Engineers • Surveyors
Construction Managers • Environmental Scientists • Landscape Architects • Planners

BCI INDUSTRIAL SUBDIVISION

LIBERTYVILLE, ILLINOIS

PRELIMINARY PLAT OF SUBDIVISION

PROJ MGR.: JP
PROJ ASSOC.: JID
DRAWN BY: PGA
DATE: 10/09/25
SCALE: 1"=80'

SHEET 3 OF 5

BCALYIL01

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December 1, 2025 - 10:53 Data Name: P:\Bcal\01\Data\Survey\Field Drawings\Plat of Subdivision\Preliminary Plat\1\Sheet\Xref\V02-05-BCALYIL01-LY-PR.dwg Updated By: jsanderson

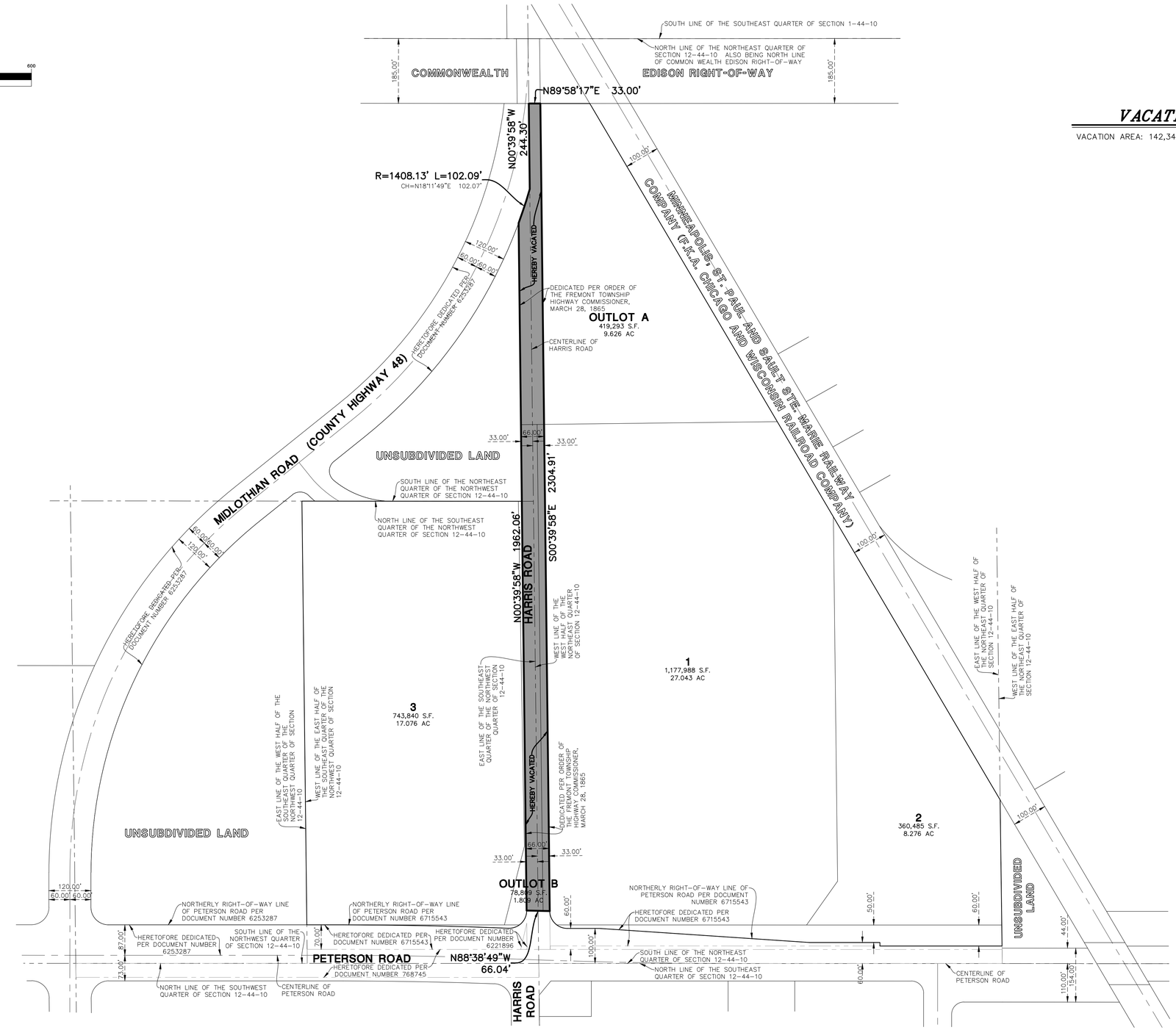
PRELIMINARY PLAT
OF
BCI INDUSTRIAL SUBDIVISION

BEING A SUBDIVISION OF PART OF THE NORTHWEST QUARTER AND THE NORTHEAST QUARTER OF SECTION 12, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN LAKE COUNTY, ILLINOIS.

GRAPHIC SCALE

150 0 75 150 300 600

(IN FEET)
1 inch = 150 ft.



VACATION AREA

VACATION AREA: 142,347 SQUARE FEET (3.268 ACRES)

DRAWN BY	REVISIONS	DATE
PGA	REVISED PER VILLAGE COMMENTS	12/1/25

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BCI INDUSTRIAL SUBDIVISION

LIBERTYVILLE, ILLINOIS

PRELIMINARY PLAT OF SUBDIVISION

PROJ. MGR.:	JP
PROJ. ASSOC.:	JID
DRAWN BY:	PGA
DATE:	10/09/25
SCALE:	1"=150'

SHEET
4 OF 5
BCALYIL01

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December 1, 2025 - 09:44 Dwg Name: P:\Engr\ID\Data\Surv\Final Drawings\Plat of Subdivision\Preliminary Plat\Libertyville\04-BCALYIL01-1Y-PP.dwg Updated By: panderson

PRELIMINARY PLAT
OF
BCI INDUSTRIAL SUBDIVISION

BEING A SUBDIVISION OF PART OF THE NORTHWEST QUARTER AND THE NORTHEAST QUARTER OF SECTION 12, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN LAKE COUNTY, ILLINOIS.

OWNER'S CERTIFICATE

THIS IS TO CERTIFY THAT _____ IS THE LEGAL OWNER OF THE LAND DESCRIBED ON THE ATTACHED PLAT, AND HAS CAUSED THE SAME TO BE SURVEYED, SUBDIVIDED AND THE PLATTED AS SHOWN BY THE PLAT FOR THE USES AND PURPOSES INDICATED THEREON AND DOES HEREBY ACKNOWLEDGE AND ADOPT THE SAME UNDER THE STYLE AND TITLE THEREON INDICATED.

THIS IS TO ALSO CERTIFY THAT THE UNDERSIGNED, AS OWNER OF THE PROPERTY DESCRIBED AS THE

_____ AND LEGALLY DESCRIBED ON THE PLAT OF THE SAME NAME, HAVE DETERMINED TO THE BEST OF OUR KNOWLEDGE THE SCHOOL DISTRICT IN WHICH EACH OF THE FOLLOWING LOTS LIE.

LOT NUMBER(S)	SCHOOL DISTRICT
ALL	GRADE SCHOOL DISTRICT NO. 79 HIGH SCHOOL DISTRICT NO. 120 JUNIOR COLLEGE DISTRICT NO. 532

DATED THIS _____ DAY OF _____, A.D., 20__.

BY: _____

PRINTED NAME AND TITLE

OWNER'S NAME AND ADDRESS

_____

_____

_____

_____

NOTARY PUBLIC

STATE OF _____)
) SS
COUNTY OF _____)

I, _____, A NOTARY PUBLIC IN AND FOR THE COUNTY AND STATE

AFORESAID, DO HEREBY CERTIFY THAT _____ WHO IS PERSONALLY KNOWN TO ME TO BE THE SAME WHOSE NAME IS SUBSCRIBED TO THE FOREGOING CERTIFICATE, APPEARED BEFORE ME THIS DAY IN PERSON AND ACKNOWLEDGED THAT THEY DID SIGN AND DELIVER THIS ANNEXED PLAT AS A FREE AND VOLUNTARY ACT FOR THE PURPOSES THEREIN SET FORTH.

GIVEN UNDER MY HAND AND NOTORIAL SEAL THIS _____ DAY OF _____, A.D., 20__.

_____
NOTARY PUBLIC

MORTGAGEE CONSENT

THE UNDERSIGNED, AS MORTGAGEE, UNDER THE PROVISIONS OF CERTAIN MORTGAGE DATED _____ AND RECORDED IN THE RECORDER'S OFFICE OF XXXXXXXX, COUNTY, ILLINOIS, ON THIS ___ DAY OF _____, A.D., _____, AS DOCUMENT NUMBER _____, HEREBY CONSENTS TO THE SUBDIVISION STATED HEREIN.

DATED: _____, A.D., 20__.

BY: _____

PRINTED NAME AND TITLE

MORTGAGEE'S NAME AND ADDRESS

_____

_____

_____

_____

ATTEST: _____

PRINTED NAME AND TITLE

MORTGAGEE NOTARY PUBLIC

STATE OF _____)
) SS
COUNTY OF _____)

I, _____, A NOTARY PUBLIC IN AND FOR THE COUNTY AND STATE AFORESAID, DO HEREBY CERTIFY THAT _____ AND _____ OF _____ WHO ARE PERSONALLY KNOWN TO ME TO BE THE SAME WHOSE NAMES ARE SUBSCRIBED TO THE FOREGOING CERTIFICATE, APPEARED BEFORE ME THIS DAY IN PERSON AND ACKNOWLEDGED THAT THEY DID SIGN AND DELIVER THIS INSTRUMENT AS A FREE AND VOLUNTARY ACT FOR THE USES AND PURPOSES HEREIN SET FORTH.

GIVEN UNDER MY HAND AND NOTORIAL SEAL THIS ___ DAY OF _____, A.D. 20__.

_____
NOTARY PUBLIC

PUBLIC WATERMAIN EASEMENT PROVISIONS

A PERMANENT AND PERPETUAL EASEMENT IS HEREBY GRANTED TO THE VILLAGE OF LIBERTYVILLE, LAKE COUNTY, ILLINOIS ("VILLAGE"), ITS SUCCESSORS AND ASSIGNS, TO SURVEY, CONSTRUCT, RECONSTRUCT, USE, OPERATE, MAINTAIN, TEST, INSPECT, REPAIR, REPLACE, ALTER, REMOVE OR ABANDON IN PLACE WATERMAINS, TOGETHER WITH RELATED ATTACHMENTS, EQUIPMENT AND APPURTENANCES THERETO, IN, UPON, UNDER, ALONG AND ACROSS THE AREAS DESIGNATED ON THE PLAN AND MARKED "PUBLIC WATERMAIN EASEMENT," TOGETHER WITH THE RIGHT OF ACCESS THERETO FOR THE PERSONNEL AND EQUIPMENT NECESSARY AND REQUIRED FOR SUCH USES AND PURPOSES.

THE OWNERS OF THE PROPERTY SHOWN ON THIS PLAT OR ANY PART THEREOF HEREBY RESERVE THE RIGHT TO USE THE AREAS DESIGNATED "PUBLIC WATERMAIN EASEMENT" AND ADJACENT PROPERTY IN ANY MANNER THAT WILL NOT PREVENT OR INTERFERE WITH THE EXERCISE BY THE VILLAGE OF THE RIGHTS HEREBY GRANTED; PROVIDED, HOWEVER, THAT THE OWNERS SHALL NOT IN ANY MANNER DISTURB, DAMAGE, DESTROY, INJURE, OBSTRUCT OR PERMIT TO BE OBSTRUCTED THE "PUBLIC WATERMAIN EASEMENT" AT ANY TIME WHATSOEVER WITHOUT THE EXPRESS PRIOR WRITTEN CONSENT OF THE VILLAGE OF LIBERTYVILLE.

PRIVATE WATER MAIN EASEMENT PROVISIONS

A PERMANENT AND PERPETUAL EASEMENT IS HEREBY GRANTED ON, UNDER AND ABOVE THOSE AREAS HEREON PLATTED AND DESIGNATED AS "PRIVATE WATER MAIN EASEMENT" TO, AND FOR THE USE AND BENEFIT OF THE OWNER OF THE LOT WITHIN WHICH THE PRIVATE WATER MAIN EASEMENT IS LOCATED, THEIR SUCCESSORS AND ASSIGNS, TO SURVEY, CONSTRUCT, RECONSTRUCT, USE, OPERATE, MAINTAIN, TEST, INSPECT, REPAIR, REPLACE, ALTER, REMOVE OR ABANDON IN PLACE PRIVATE WATER MAINS TOGETHER WITH RELATED ATTACHMENTS, EQUIPMENT AND APPURTENANCES THERETO, IN, UPON, UNDER, ALONG AND ACROSS THE AREAS. FURTHER, A NON-EXCLUSIVE EASEMENT OVER THESE AREAS IS HEREBY RESERVED FOR AND GRANTED TO THE VILLAGE OF LIBERTYVILLE, LAKE COUNTY, ILLINOIS ("VILLAGE"), ITS SUCCESSORS AND ASSIGNS.

ALL PRIVATE WATER MAINS AND RELATED ATTACHMENTS, EQUIPMENT AND APPURTENANCES THERETO, IN, UPON, UNDER, ALONG AND ACROSS THE "PRIVATE WATER MAIN EASEMENT" AREAS SHALL BE MAINTAINED IN A FIRST RATE MANNER BY THE OWNER OF THE LOT WITHIN WHICH THE PRIVATE WATER MAIN IS LOCATED, IN ACCORDANCE WITH THE PRIVATE WATER MAIN MAINTENANCE AGREEMENT (THE "AGREEMENT") BETWEEN THE VILLAGE AND THE OWNER OF THE PROPERTY SHOWN ON THIS PLAT, WHICH AGREEMENT SHALL BE RECORDED WITH THE LAKE COUNTY RECORDER OF DEEDS.

THE VILLAGE SHALL HAVE THE RIGHT, BUT NOT THE OBLIGATION, TO ENTER UPON THE PRIVATE WATER MAIN EASEMENT TO INSPECT, MAINTAIN, REPAIR, OR REPLACE THE PRIVATE WATER MAIN, ALL IN ACCORDANCE WITH THE AGREEMENT, TOGETHER WITH THE RIGHT TO ACCESS SAID EASEMENT WITH THE PERSONNEL AND EQUIPMENT NECESSARY AND REQUIRED FOR SUCH USES AND PURPOSES. IN THE EVENT OF THE PERFORMANCE BY THE VILLAGE OR ITS AGENTS OF ANY MAINTENANCE, REPAIR, OR REPLACEMENT WORK, THE COSTS OF SUCH WORK SHALL BE THE RESPONSIBILITY OF THE OWNER, IN ACCORDANCE WITH THE AGREEMENT.

THE OWNER(S) OF THE LOTS SHOWN ON THIS PLAT HEREBY RESERVE THE RIGHT TO USE THE AREAS DESIGNATED "PRIVATE WATER MAIN EASEMENT" IN ANY MANNER THAT WILL NOT PREVENT OR INTERFERE WITH ITS PURPOSE, OR THE EXERCISE BY THE VILLAGE OF THE RIGHTS HEREBY GRANTED; PROVIDED, HOWEVER, THAT SAID OWNER(S) SHALL NOT IN ANY MANNER DISTURB, DAMAGE, DESTROY, INJURE, OBSTRUCT OR PERMIT TO BE OBSTRUCTED THE "PRIVATE WATER MAIN EASEMENT" AT ANY TIME WHATSOEVER WITHOUT THE EXPRESS PRIOR WRITTEN CONSENT OF THE VILLAGE.

RESTRICTIVE COVENANTS & EASEMENT FOR STORMWATER MANAGEMENT

THE AREAS DESIGNATED ON THIS PLAT AS "STORMWATER MANAGEMENT EASEMENT" SHALL BE

CONTINUOUSLY MAINTAINED IN A FIRST RATE MANNER BY _____PROPERTY OWNERS' ASSOCIATION (THE "ASSOCIATION") IN ACCORDANCE WITH THE APPROVED MAINTENANCE PLAN THEREFOR, WHICH IS ON FILE WITH THE VILLAGE OF LIBERTYVILLE, LAKE COUNTY, ILLINOIS (THE "VILLAGE"), AND WHICH SHALL BE AN EXHIBIT TO THE DECLARATION OF COVENANTS, CONDITIONS, AND RESTRICTIONS FOR THE SUBDIVISION. AN EASEMENT ON, UNDER AND ABOVE THE STORMWATER MANAGEMENT EASEMENT IS HEREBY GRANTED TO, AND FOR THE USE AND BENEFIT OF, ALL OF THE LOTS IN THIS SUBDIVISION AND THE ASSOCIATION, FOR THE SOLE PURPOSE OF STORMWATER STORAGE AND CONVEYANCE. FURTHER, THE OWNERS OF PROPERTY WITHIN THE SUBDIVISION AT ANY GIVEN TIME SHALL BE JOINTLY AND SEVERALLY RESPONSIBLE FOR THE ASSOCIATION'S OBLIGATIONS STATED IN THESE PROVISIONS.

NO CHANGE SHALL BE MADE IN THE FINISHED GRADE OF THE LAND WITHIN THE STORMWATER MANAGEMENT EASEMENT, NOR SHALL ANY CONSTRUCTION OF ANY KIND WHATSOEVER BE ERECTED OR PERMITTED TO EXIST WITHIN THE STORMWATER MANAGEMENT EASEMENT THAT MIGHT MATERIALLY IMPEDE STORMWATER DRAINAGE THEREIN OR MATERIALLY REDUCE THE STORMWATER STORAGE CAPACITY THEREOF. TREES, SHRUBS, FENCES, LANDSCAPE PLANTING, AND ANY OTHER INSTALLATIONS SHALL BE PERMITTED WITHIN THE STORMWATER MANAGEMENT EASEMENT ONLY WITH THE PRIOR WRITTEN APPROVAL OF THE VILLAGE ENGINEER. THE ASSOCIATION SHALL MAINTAIN A PROPER VEGETATIVE COVER ON THE SURFACE OF THE STORMWATER MANAGEMENT EASEMENT, IN ACCORDANCE WITH THE APPROVED DESIGN PLANS, AND SHALL BE RESPONSIBLE FOR MAINTENANCE OF SAID VEGETATIVE COVER.

IN THE EVENT THE VILLAGE DETERMINES, IN ITS SOLE AND ABSOLUTE DISCRETION, THAT PRIOR MAINTENANCE OF THE STORMWATER MANAGEMENT EASEMENT IS NOT PERFORMED AT ANY TIME, THE VILLAGE, AFTER TEN (10) DAYS PRIOR WRITTEN NOTICE TO THE ASSOCIATION, MAY, BUT SHALL NOT BE OBLIGATED TO, ENTER UPON THE STORMWATER MANAGEMENT EASEMENT FOR THE PURPOSE OF PERFORMING MAINTENANCE WORK ON AND TO THE STORMWATER MANAGEMENT EASEMENT.

IN THE EVENT THAT THE VILLAGE SHALL CAUSE TO BE PERFORMED ANY WORK PURSUANT TO THESE PARAGRAPHS, THE VILLAGE SHALL HAVE THE RIGHT TO CHARGE THE ASSOCIATION AN AMOUNT SUFFICIENT TO DEFRAY THE ENTIRE COST OF SUCH WORK OR ACTION, INCLUDING ADMINISTRATIVE COSTS, EITHER BEFORE OR AFTER SUCH COST IS INCURRED. IF THE AMOUNT SO CHARGED IS NOT PAID BY THE ASSOCIATION WITHIN THIRTY (30) DAYS FOLLOWING A DEMAND IN WRITING BY THE VILLAGE FOR SUCH PAYMENT, SUCH CHARGE, TOGETHER WITH INTEREST AND COSTS OF COLLECTION, SHALL BECOME A LIEN UPON THE STORMWATER MANAGEMENT EASEMENT AND ALL LOTS WITHIN THIS SUBDIVISION AND THE VILLAGE SHALL HAVE THE RIGHT TO COLLECT SUCH CHARGE, WITH INTEREST AND COSTS, AND TO ENFORCE SUCH LIEN AS IN FORECLOSURE PROCEEDINGS AS PERMITTED BY LAW.

NOTHING IN THESE PARAGRAPHS SHALL BE CONSTRUED TO CONSTITUTE A DEDICATION OF ANY PORTION OF THE STORMWATER MANAGEMENT EASEMENT TO, OR AN ACCEPTANCE THEREOF BY, THE VILLAGE.

THE VILLAGE SHALL BE UNDER NO OBLIGATION TO EXERCISE THE RIGHTS GRANTED IN THESE PARAGRAPHS EXCEPT AS IT SHALL DETERMINE TO BE IN ITS BEST INTEREST. NO FAILURE TO EXERCISE AT ANY TIME ANY RIGHT HEREIN GRANTED TO THE VILLAGE SHALL BE CONSTRUED AS A WAIVER OF THAT OR ANY OTHER RIGHTS.

THESE COVENANTS SHALL RUN WITH THE LAND IN THE SUBDIVISION SHOWN ON THIS PLAT, AND SHALL BE BINDING UPON AND INURE TO THE BENEFIT OF THE OWNERS OF ALL LOTS OF RECORD THEREIN, THEIR RESPECTIVE SUCCESSORS, ASSIGNS AND GRANTEES AND ALL PARTIES CLAIMING BY, THROUGH AND UNDER THEM. ENFORCEMENT OF THESE COVENANTS MAY BE SOUGHT BY THE OWNERS OF ANY LOTS OF RECORD IN THIS SUBDIVISION, ANY PERSON WITH AN INTEREST IN ANY OF SAID LOTS OF RECORD, OR THE VILLAGE OF LIBERTYVILLE BY ANY PROCEEDING AT LAW OR IN EQUITY AGAINST ANY PERSON OR PERSONS VIOLATING OR ATTEMPTING TO VIOLATE ANY COVENANT, EITHER TO RESTRAIN VIOLATION, TO COMPEL AFFIRMATIVE ACTION, OR TO RECOVER DAMAGES, AND AGAINST THE LAND TO ENFORCE ANY LIEN CREATED BY THESE COVENANTS.

CROSS ACCESS EASEMENT PROVISIONS

A NON-EXCLUSIVE EASEMENT IS HEREBY RESERVED FOR AND GRANTED TO THE OWNERS OF ALL LOTS WITHIN THIS SUBDIVISION AND TO THE OWNERS OF THE LAND WEST OF AND NORTH OF AND ADJOINING LOT 3 AND THE LAND EAST OF AND ADJOINING LOT 2, TOGETHER WITH THEIR RESPECTIVE SUCCESSORS AND ASSIGNS, TO PROVIDE CROSS ACCESS, INGRESS AND EGRESS TO AND FROM THE SUBDIVIDED PROPERTY, OVER AND ACROSS THAT PART OF THE PROPERTY SHOWN AND LABELED AS "CROSS ACCESS EASEMENT." THIS EASEMENT MAY BE FURTHER GOVERNED BY A DECLARATION OF EASEMENTS, COVENANTS AND RESTRICTIONS RECORDED SEPARATE FROM THIS PLAT.

SANITARY SEWER EASEMENT PROVISIONS

A PERMANENT AND PERPETUAL EASEMENT IS HEREBY GRANTED TO THE VILLAGE OF LIBERTYVILLE, LAKE COUNTY, ILLINOIS ("VILLAGE"), ITS SUCCESSORS AND ASSIGNS, TO SURVEY, CONSTRUCT, RECONSTRUCT, USE, OPERATE, MAINTAIN, TEST, INSPECT, REPAIR, REPLACE, ALTER, REMOVE OR ABANDON IN PLACE WATER, SANITARY SEWER, AND STORM SEWER MAINS TOGETHER WITH RELATED ATTACHMENTS, EQUIPMENT AND APPURTENANCES THERETO, IN, UPON, UNDER, ALONG AND ACROSS THE AREAS DESIGNATED ON THE PLAN AND MARKED "SANITARY SEWER EASEMENT," TOGETHER WITH THE RIGHT OF ACCESS THERETO FOR THE PERSONNEL AND EQUIPMENT NECESSARY AND REQUIRED FOR SUCH USES AND PURPOSES.

THE OWNERS OF THE PROPERTY SHOWN ON THIS PLAT OR ANY PART THEREOF HEREBY RESERVE THE RIGHT TO USE THE AREAS DESIGNATED "SANITARY SEWER EASEMENT" AND ADJACENT PROPERTY IN ANY MANNER THAT WILL NOT PREVENT OR INTERFERE WITH THE EXERCISE BY THE VILLAGE OF THE RIGHTS HEREBY GRANTED; PROVIDED, HOWEVER, THAT THE OWNERS SHALL NOT IN ANY MANNER DISTURB, DAMAGE, DESTROY, INJURE, OBSTRUCT OR PERMIT TO BE OBSTRUCTED THE "SANITARY SEWER EASEMENT" AT ANY TIME WHATSOEVER WITHOUT THE EXPRESS PRIOR WRITTEN CONSENT OF THE VILLAGE OF LIBERTYVILLE.

NICOR GAS EASEMENT PROVISIONS

AN EASEMENT FOR SERVING THE PARCEL WITH NATURAL GAS SERVICE IS HEREBY RESERVED FOR AND GRANTED TO

NICOR GAS COMPANY

ITS RESPECTIVE SUCCESSORS AND ASSIGNS, TO INSTALL, OPERATE, MAINTAIN AND REMOVE, FROM TIME TO TIME, FACILITIES USED IN CONNECTION WITH THE TRANSMISSION AND DISTRIBUTION OF NATURAL GAS IN, OVER, UNDER, ACROSS, ALONG AND UPON THE SURFACE OF THE PARCEL SHOWN WITHIN THE DOTTED LINES ON THE PLAT AND MARKED "PUBLIC UTILITY EASEMENT", AND THE PARCEL DESIGNATED ON THE PLAT FOR STREETS AND ALLEYS, WHETHER PUBLIC OR PRIVATE, TOGETHER WITH THE RIGHT TO INSTALL REQUIRED SERVICE CONNECTIONS OVER OR UNDER THE SURFACE OF EACH LOT TO SERVE IMPROVEMENTS THEREON, OR ON ADJACENT LOTS TO SERVE IMPROVEMENTS THEREON, OR ON ADJACENT LOTS, THE RIGHT TO CUT, TRIM OR REMOVE TREES, BUSHES AND ROOTS AS MAY BE REASONABLY REQUIRED INCIDENT TO THE RIGHTS HEREIN GIVEN, AND THE RIGHT TO ENTER UPON THE PARCEL FOR ALL SUCH PURPOSES. NO PERMANENT STRUCTURES MAY BE PLACED OVER GRANTEES' FACILITIES OR IN, UPON OR OVER THE PARCEL SHOWN WITHIN THE DOTTED LINES MARKED "PUBLIC UTILITY EASEMENT" WITHOUT THE PRIOR WRITTEN CONSENT OF GRANTEES, BUT THE EASEMENT AREA MAY BE USED FOR PURPOSES NOT INCONSISTENT WITH THE RIGHTS GRANTED, INCLUDING WITHOUT LIMITATION, CONSTRUCTION OF PARKING AREAS, DRIVEWAYS, LANDSCAPE ISLANDS AND LANDSCAPING, INCLUDING SHALLOW ROOTED BUSHES AND SHRUBS, BUT EXCLUDING TREES. AFTER INSTALLATION OF ANY SUCH FACILITIES, THE GRADE OF THE PARCEL SHALL NOT BE ALTERED IN A MANNER SO AS TO INTERFERE WITH THE PROPER OPERATION AND MAINTENANCE THEREOF.

IF REQUESTED BY GRANTOR/LOT OWNER, RELOCATION OF FACILITIES WILL BE DONE BY GRANTEES AT COST OF GRANTOR/LOT OWNER TO A LOCATION MUTUALLY AGREEABLE TO THE PARTIES AND THIS EASEMENT AND/OR THE EASEMENT PREMISES SHALL BE AMENDED TO ACCOMMODATE THE NEW GAS MAIN ALIGNMENT.

EASEMENT PROVISIONS

AN EASEMENT FOR SERVING THE PARCEL AND OTHER PROPERTY WITH ELECTRIC AND COMMUNICATION SERVICE IS HEREBY RESERVED FOR AND GRANTED TO

COMMONWEALTH EDISON COMPANY
AND
SBC – AMERITECH ILLINOIS A.K.A. ILLINOIS BELL TELEPHONE COMPANY, GRANTEES,

THEIR RESPECTIVE LICENSEES, SUCCESSORS, AND ASSIGNS, JOINTLY AND SEVERALLY, TO CONSTRUCT, OPERATE, REPAIR, MAINTAIN, MODIFY, RECONSTRUCT, REPLACE, SUPPLEMENT, RELOCATE AND REMOVE, FROM TIME TO TIME, POLES, GUYS, ANCHORS, WIRES, CABLES, CONDUITS, MANHOLES, TRANSFORMERS, PEDESTALS, EQUIPMENT CABINETS OR OTHER FACILITIES IN CONNECTION WITH OVERHEAD AND UNDERGROUND TRANSMISSION AND DISTRIBUTION OF ELECTRICITY, COMMUNICATIONS, SOUNDS AND SIGNALS IN, OVER, UNDER, ACROSS, ALONG AND UPON THE SURFACE OF THE PARCEL SHOWN WITHIN THE DASHED OR DOTTED LINES (OR SIMILAR DESIGNATION) ON THE PLAT AND MARKED "PUBLIC UTILITY EASEMENT" (OR SIMILAR DESIGNATION), AND THE PROPERTY DESIGNATED ON THE PLAT FOR STREETS AND ALLEYS, WHETHER PUBLIC OR PRIVATE, TOGETHER WITH THE RIGHTS TO INSTALL REQUIRED SERVICE CONNECTIONS OVER OR UNDER THE SURFACE OF THE PARCEL OR AREAS TO SERVE IMPROVEMENTS THEREON, OR ON ADJACENT LOTS OR PARCELS, THE RIGHT TO CUT, TRIM OR REMOVE TREES, BUSHES, ROOTS AND SAPLINGS AND TO CLEAR OBSTRUCTIONS FROM THE SURFACE AND SUBSURFACE AS MAY BE REASONABLY REQUIRED INCIDENT TO THE RIGHTS HEREIN GIVEN, AND THE RIGHT TO ENTER UPON THE PARCEL FOR ALL SUCH PURPOSES. NO PERMANENT STRUCTURES MAY BE PLACED OVER GRANTEES' FACILITIES OR IN, UPON OR OVER THE PARCEL SHOWN WITHIN THE DOTTED LINES MARKED "PUBLIC UTILITY EASEMENT" WITHOUT THE PRIOR WRITTEN CONSENT OF GRANTEES, BUT SAID EASEMENT AREA MAY BE USED FOR PURPOSES NOT INCONSISTENT WITH THE RIGHTS GRANTED, INCLUDING WITHOUT LIMITATION, CONSTRUCTION OF PARKING AREAS, DRIVEWAYS, LANDSCAPE ISLANDS AND LANDSCAPING PROVIDED HOWEVER, FOLLOWING ANY WORK PERFORMED BY THE GRANTEES IN THE EXERCISE OF THE EASEMENT RIGHTS GRANTED HEREIN, THE GRANTEES SHALL HAVE NO OBLIGATION WITH RESPECT TO RESTORATION OTHER THAN TO BACKFILL AND MOUND, TO REMOVE ALL EXCESS DEBRIS AND SPOIL AND TO LEAVE THE MAINTENANCE AREA IN A GENERALLY CLEAN AND WORKMAN LIKE CONDITION. AFTER INSTALLATION OF ANY SUCH FACILITIES, THE GRADE OF THE PARCEL SHALL NOT BE ALTERED IN A MANNER SO AS TO INTERFERE WITH THE PROPER OPERATION AND MAINTENANCE THEREOF.

RELOCATION OF FACILITIES WILL BE DONE BY GRANTEES AT COST OF THE GRANTOR/LOT OWNER, UPON WRITTEN REQUEST.

PUBLIC UTILITY EASEMENT PROVISIONS

ALL EASEMENTS INDICATED AS PUBLIC UTILITY EASEMENTS ON THE PLAT ARE RESERVED FOR AND GRANTED TO THE VILLAGE OF LIBERTYVILLE, SBC – AMERITECH ILLINOIS, NICOR GAS COMPANY, COMMONWEALTH EDISON ELECTRIC COMPANY, COMCAST TELEVISION COMPANY AND THEIR SUCCESSORS AND ASSIGNS, FOR PERPETUAL RIGHT, PRIVILEGE AND AUTHORITY TO CONSTRUCT, RECONSTRUCT, REPAIR, INSPECT, MAINTAIN AND OPERATE VARIOUS UTILITIES, TRANSMISSION AND DISTRIBUTION SYSTEMS TOGETHER WITH ANY AND ALL NECESSARY MANHOLES, CONNECTIONS, APPLIANCES AND OTHER STRUCTURES AND APPURTENANCES AS MAY BE DEEMED NECESSARY, OVER, UPON, ALONG, UNDER, THROUGH SAID INDICATED EASEMENT, TOGETHER WITH RIGHT OF ACCESS ACROSS PROPERTY FOR NECESSARY MEN AND EQUIPMENT TO DO ANY OF THE ABOVE WORK; THE RIGHT IS ALSO GRANTED TO CUT DOWN, TRIM, OR REMOVE TREES, SHRUBS, OR OTHER PLANTS ON THE EASEMENT THAT INTERFERE WITH THE OPERATION OF THE UTILITIES. NO PERMANENT BUILDINGS, TREES OR OTHER STRUCTURES SHALL INTERFERE WITH THE AFORESAID USES OR RIGHTS BUT SAME MAY BE USED FOR ASPHALT AND IMPROVEMENTS NORMALLY FOUND IN A PARKING LOT SUCH AS LIGHT FIXTURES AND SIGNS, GARDENS, SHRUBS, LANDSCAPING AND OTHER PURPOSES THAT DO NOT THEN OR LATER INTERFERE WITH THE AFORESAID USES OR RIGHTS.

PERMISSION TO RECORD

STATE OF ILLINOIS)
)SS
COUNTY OF LAKE)

I, JACOB I. DUNHAM, AN ILLINOIS PROFESSIONAL LAND SURVEYOR, HEREBY GRANT PERMISSION TO THE OWNERS REPRESENTATIVE TO RECORD THIS PLAT ON OR BEFORE MAY 31, 2026. THE REPRESENTATIVE SHALL PROVIDE THIS SURVEYOR WITH A RECORDED COPY OF THIS PLAT.

DATED THIS 1ST DAY OF DECEMBER, A.D. 2025.

FOR REVIEW ONLY
ILLINOIS PROFESSIONAL LAND SURVEYOR NO. 3966
LICENSE EXPIRES NOVEMBER 30, 2024

JACOB I. DUNHAM
ILLINOIS PROFESSIONAL LAND SURVEYOR NO. 3966
LINCOLNSHIRE, ILLINOIS

SUBMITTED BY/RETURN TO:

VILLAGE OF LIBERTYVILLE
118 W COOK AVENUE
LIBERTYVILLE, IL 60048

PIN'S

10-12-101-001
10-12-100-016
10-12-200-013

SURVEYORS CERTIFICATE

STATE OF ILLINOIS)
)SS
COUNTY OF LAKE)

THIS IS TO DECLARE THAT THE PROPERTY DESCRIBED HEREON WAS SURVEYED AND SUBDIVIDED BY MANHARD CONSULTING, LTD., UNDER THE SUPERVISION OF AN ILLINOIS PROFESSIONAL LAND SURVEYOR AND THAT THE PLAT HEREON DRAWN IS A CORRECT REPRESENTATION OF SAID SURVEY AND SUBDIVISION:

PARCEL 1:
THE EAST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 12, EXCEPT LOT 1 IN ROBERT J. MEYER'S ACRE BEING A SUBDIVISION OF PART OF EAST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 12, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED OCTOBER 27, 1956 AS DOCUMENT NUMBER 928535, EXCEPT THAT PART GRANTED FOR HIGHWAY PURPOSES BY INSTRUMENT RECORDED AS DOCUMENT NUMBER 768745 AND EXCEPT THAT PART GRANTED FOR HIGHWAY PURPOSES BY INSTRUMENT RECORDED AS DOCUMENT NUMBER 6221896; IN LAKE COUNTY, ILLINOIS.

PARCEL 2:
ALL THAT PART OF THE NORTHEAST 1/4 OF SECTION 12 LYING WESTERLY OF THE RIGHT OF WAY OF THE CHICAGO AND WISCONSIN RAILROAD COMPANY, NOW KNOWN AS THE MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE RAILWAY COMPANY, EXCEPT THE NORTH 185 FEET MEASURED PERPENDICULARLY, EXCEPT THAT PART DESCRIBED AS FOLLOWS: BEGINNING AT A POINT ON THE SOUTH LINE OF THE NORTHEAST 1/4, SAID POINT BEING 1050.7 FEET WEST OF THE SOUTHEAST CORNER OF SAID QUARTER SECTION; THENCE NORTHWESTERLY ALONG SAID RIGHT OF WAY LINE 535.1 FEET, MORE OR LESS, TO THE WEST LINE OF THE EAST 1/2 OF THE NORTHEAST 1/4 OF SAID SECTION 12; THENCE SOUTH ALONG SAID HALF QUARTER SECTION LINE 460.5 FEET, MORE OR LESS TO THE SOUTH LINE OF SAID QUARTER SECTION; THENCE EAST ALONG SAID SOUTH LINE 272.5 FEET TO THE POINT OF BEGINNING; AND EXCEPT THAT PART GRANTED FOR HIGHWAY PURPOSES BY INSTRUMENT RECORDED AS DOCUMENT 768745, AND FURTHER EXCEPTING THAT PART ACQUIRED FOR ROAD PURPOSES BY THE DEPARTMENT OF TRANSPORTATION, STATE OF ILLINOIS, IN CONDEMNATION CASE 00 ED 02, ALL IN TOWNSHIP 44 NORTH, RANGE 10, EAST OF THE THIRD PRINCIPAL MERIDIAN; IN LAKE COUNTY, ILLINOIS;

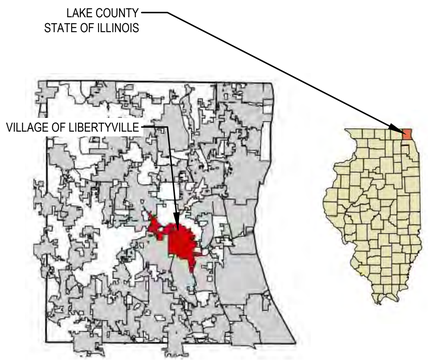
FURTHER EXCEPTING FROM PARCELS 1 AND 2 AFORESAID THAT PART OF THE NORTH 1/2 OF SECTION 12, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOW:

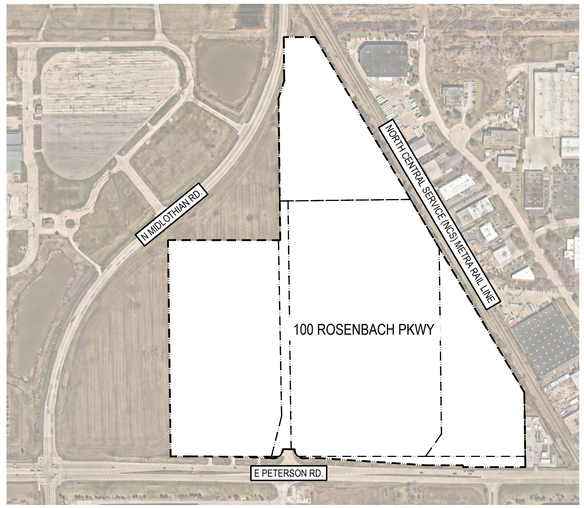
COMMENCING AT THE SOUTHEAST CORNER OF THE NORTHWEST QUARTER OF SAID SECTION 12; THENCE NORTHERLY ALONG THE EAST LINE OF SAID NORTHWEST QUARTER HAVING AN ILLINOIS COORDINATE SYSTEM (EAST ZONE) GRID BEARING OF NORTH 00 DEGREES 39 MINUTES 58 SECONDS WEST, A DISTANCE OF 60.00 FEET TO A POINT ON THE NORTH RIGHT-OF-WAY LINE OF PETERSON ROAD (A.K.A. COUNTY HIGHWAY 20) AS DEDICATED PER DOCUMENT NO. 768745 AND RECORDED SEPTEMBER 11, 1952, SAID POINT BEING THE POINT OF BEGINNING; THENCE NORTH 89 DEGREES 59 MINUTES 10 SECONDS WEST, 660.28 FEET ALONG SAID NORTH RIGHT-OF-WAY LINE TO A POINT ON THE WEST LINE OF THE EAST HALF OF THE SOUTHEAST QUARTER OF SAID NORTHWEST QUARTER; THENCE NORTH 00 DEGREES 39 MINUTES 40 SECONDS WEST, 70.00 FEET ALONG SAID WEST LINE; THENCE SOUTH 89 DEGREES 59 MINUTES 10 SECONDS EAST, 103.70 FEET ALONG A LINE 70.00 FEET NORTH OF AND PARALLEL WITH SAID NORTH RIGHT-OF-WAY LINE OF PETERSON ROAD TO A POINT ON A 11546.16 FOOT RADIUS CURVE, CONCAVE SOUTHERLY; THENCE EASTERLY ALONG SAID CURVE 471.18 FEET (THE CHORD BEARS SOUTH 88 DEGREES 49 MINUTES 01 SECONDS EAST, 471.15 FEET) TO A POINT ON A 50.00 FOOT RADIUS CURVE, CONCAVE NORTHWESTERLY; THENCE NORTHEASTERLY ALONG SAID CURVE 81.17 FEET (THE CHORD BEARS NORTH 45 DEGREES 50 MINUTES 35 SECONDS EAST 72.55 FEET) TO A POINT ON THE WEST RIGHT-OF-WAY LINE OF HARRIS ROAD AS DEDICATED PER ORDER OF THE FREMONT TOWNSHIP HIGHWAY COMMISSIONER ON MARCH 28, 1865; THENCE SOUTH 88 DEGREES 39 MINUTES 23 SECONDS EAST, 66.04 FEET TO A POINT ON THE EAST RIGHT-OF-WAY LINE OF SAID HARRIS ROAD, SAID POINT BEING ON A 50.00 FOOT RADIUS CURVE, CONCAVE NORTHEASTERLY; THENCE SOUTHEASTERLY ALONG SAID CURVE 77.95 FEET (THE CHORD BEARS SOUTH 45 DEGREES 19 MINUTES 34 SECONDS EAST, 70.29 FEET) TO A POINT ON A LINE 100.00 FEET NORTH OF AND PARALLEL WITH THE SOUTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 12; THENCE SOUTH 89 DEGREES, 59 MINUTES 10 SECONDS EAST, 91.61 FEET ALONG SAID PARALLEL LINE; THENCE SOUTH 86 DEGREES 10 MINUTES 20 SECONDS EAST, 601.36 FEET TO A POINT ON A LINE 60.00 FEET NORTH OF AND PARALLEL WITH SAID SOUTH LINE OF THE NORTHEAST QUARTER; THENCE SOUTH 89 DEGREES 59 MINUTES 10 SECONDS EAST, 200.01 FEET ALONG SAID PARALLEL LINE; THENCE SOUTH 00 DEGREES 00 MINUTES 50 SECONDS WEST, 10.00 FEET TO THE NORTH RIGHT-OF-WAY LINE OF SAID PETERSON ROAD AS PER DOCUMENT NO. 4586501 RECORDED SEPTEMBER 26, 2000; THENCE NORTH 89 DEGREES 59 MINUTES 10 SECONDS WEST, 940.47 FEET ALONG SAID NORTH RIGHT-OF-WAY LINE TO A POINT ON SAID EAST RIGHT-OF-WAY LINE OF HARRIS ROAD; THENCE SOUTH 00 DEGREES 39 MINUTES 58 SECONDS EAST, 10.00 FEET ALONG SAID EAST RIGHT-OF-WAY LINE TO A POINT ON SAID NORTH RIGHT-OF-WAY LINE OF PETERSON ROAD DEDICATED BY SAID DOCUMENT NO. 768745; THENCE NORTH 89 DEGREES 59 MINUTES 10 SECONDS WEST, 33.00 FEET ALONG SAID NORTH RIGHT-OF-WAY LINE TO THE POINT OF BEGINNING.

PARCEL 3:
LOT 1 IN ROBERT J. MEYER'S ACRE BEING A SUBDIVISION OF PART OF EAST 1/2 OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 12, TOWNSHIP 44 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED OCTOBER 27, 1956 AS DOCUMENT NO. 928535, IN LAKE COUNTY, ILLINOIS.

SUBDIVIDED PROPERTY CONTAINS 65.017 ACRES, MORE OR LESS A

PRELIMINARY LANDSCAPE PLAN SET
BATH CONCEPTS FACILITY
100 ROSENBACH PKWY, LIBERTYVILLE, IL 60048





PRELIMINARY LANDSCAPE PLAN SET
December 5, 2025

LANDSCAPE ARCHITECTS
TESKA ASSOCIATES, INC.
627 GROVE STREET
EVANSTON, IL 60201
P: 847-869-2015 F: 847-869-2059

OWNER
BATH CONCEPTS
1800 INDUSTRIAL DRIVE
LIBERTYVILLE, IL 60048

CIVIL ENGINEER'S OF RECORD
MANHARD CONSULTING
1 OVERLOOK POINT
LINCOLNSHIRE, IL 60069
P: 847-634-5550

GENERAL CONTRACTOR
PRINCIPLE CONSTRUCTION
9450 WEST BRYN MAWR, SUITE 120
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ARCHITECTS
NELSON WORLDWIDE

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L-1.1	TREE REMOVALS NORTH ENLARGEMENT
L-1.2	TREE REMOVALS SOUTH ENLARGEMENT
L-1.3	TREE REPLACEMENT REQUIREMENTS
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L-3.0	LANDSCAPE DETAILS
L-4.0	LANDSCAPE ORDINANCE SUMMARY

DRAWINGS PREPARED BY:

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Tel 847.869.2015 Fax 847.869.2059

CALL JULIE 1-800-892-0123
WITH THE FOLLOWING: COUNTY: LAKE COUNTY, IL
CITY-TOWNSHIP: LIBERTYVILLE
Two (2) working days before you dig
(Excluding Sat., Sun. & Holidays)

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project name
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LANDSCAPE GENERAL NOTES:

1. PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES, CONTRACTOR SHALL NOTIFY J.U.L.I.E. (811) OR (800) 892.0123 TO DETERMINE THE LOCATION OF ANY UNDERGROUND UTILITIES, WHICH MAY AFFECT PROPOSED SITE WORK. CONTRACTOR SHALL NOTIFY THE OWNER/LANDSCAPE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES, OBSTACLES AND/OR PROBLEMS.

2. VERIFICATION OF DIMENSIONS AND GRADES, BOTH EXISTING AND PROPOSED, SHALL BE THE CONTRACTOR'S RESPONSIBILITY PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL NOTIFY THE OWNER/LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.

3. ALL SURFACE DRAINAGE SHALL BE DIRECTED AWAY FROM STRUCTURES. SURFACE DRAINAGE SHALL BE DIRECTED TO EXISTING CATCH BASINS DESIGNATED FOR THE COLLECTION OF SURFACE RUN-OFF.

4. PLANT MATERIAL SIZES SHOWN ON PLANT SCHEDULE ARE MINIMUM ACCEPTABLE SIZES. ALL PLANT MATERIAL SHALL BE OF SPECIMEN QUALITY. NO 'PARK GRADE' MATERIAL WILL BE ACCEPTED.

5. ALL PLANT MATERIAL SHALL BE OBTAINED FROM AN APPROVED NORTHERN ILLINOIS NURSERY WITH HEAVY CLAY SOILS.

6. ALL PLANT MATERIAL SHALL CONFORM TO AMERICAN STANDARD FOR NURSERY STOCK AS SPONSORED BY THE AMERICAN ASSOCIATION OF NURSERYMEN AND APPROVED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE, INC. (ANSI)

7. IF SPECIFIED SPECIES AND/ OR QUALITY OF PLANTS ARE NOT AVAILABLE AT THE TIME OF ORDERING, THE LANDSCAPE ARCHITECT, AT HIS/HER DISCRETION, MAY SUBSTITUTE SIMILAR PLANTS WITH THE SAME WHOLESALE VALUE.

8. ALL PLANTS TO BE BALLED IN BURLAP (B&B) OR CONTAINER GROWN (CG) AS SPECIFIED IN PLANT SCHEDULE. ALL NYLON/PLASTIC/BURLAP ROOT WRAPPING MATERIAL AND METAL WIRE BASKETS SHALL BE REMOVED.

9. SOIL TO BE USED FOR THE PLANTING MEDIUM FOR THE PROJECT SHALL BE FERTILE, WELL-DRAINED, OF UNIFORM QUALITY, FREE OF STONES OVER 1" IN DIAMETER, STICKS, OILS, CHEMICALS, PLASTER, CONCRETE AND OTHER DELETERIOUS MATERIAL.

10. ALL LANDSCAPE MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES AND ORDINANCES.

11. ALL LANDSCAPE MATERIALS SHALL BE INSTALLED IN CONFORMANCE WITH THE ACCEPTED INDUSTRY'S STANDARD 'BEST MANAGEMENT PRACTICE' TECHNIQUES AS IDENTIFIED BY THE ILLINOIS LANDSCAPE CONTRACTORS ASSOCIATION (ILCA).

12. THE OWNER AND/OR LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANT MATERIAL IN POOR CONDITION/FORM OR NOT INSTALLED ACCORDING TO 'BEST MANAGEMENT PRACTICE' TECHNIQUES.

13. THE LANDSCAPE CONTRACTOR SHALL PREPARE PLANTING BEDS BY ADDING SOIL AMENDMENTS TO TOPSOIL MIX IN THE FOLLOWING QUANTITIES: TOPSOIL MIX FOR TREES & SHRUBS SHALL BE THREE (3) PARTS TOPSOIL, ONE (1) PART PEAT, AND ONE (1) PART SAND. TOPSOIL MIX FOR PERENNIALS & GROUNDCOVER SHALL BE THREE (3) PARTS TOPSOIL, ONE (1) PART SAND, AND TWO (2) PARTS COMPOST.

14. ALL WOODY PLANTINGS TO RECEIVE 3" OF SHREDDED HARDWOOD MULCH. ALL HERBACEOUS PLANTINGS TO RECEIVE 2" OF LEAF COMPOST.

15. CONTRACTOR SHALL WATER PLANTS IMMEDIATELY AFTER PLANTING. FLOODING PLANTS TWICE DURING FIRST TWENTY-FOUR HOURS AFTER PLANTING.

16. ALL ROAD AND WALK SURFACES SHALL BE KEPT CLEAR OF MUD AND DEBRIS AT ALL TIMES.

17. CONTRACTOR SHALL REPAIR IN KIND ANY AREAS DAMAGED AS A RESULT OF LANDSCAPE OPERATIONS.

18. GUARANTEE SPECIFICATIONS ARE AS FOLLOWS: THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A BONDED WRITTEN ONE-YEAR WARRANTY AGREEMENT BEGINNING ON THE FIRST DAY OF THE OWNER'S POSSESSION. THIS AGREEMENT SHALL PROVIDE FOR THE REPLACEMENT OF DEAD OR DYING PLANT MATERIAL. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A TYPEWRITTEN LIST OF SPECIFIC MAINTENANCE INSTRUCTIONS FOR EACH TYPE OF PLANT INSTALLED WITH THE WRITTEN AGREEMENT AND BOND.

19. EROSION CONTROL BLANKETS REQUIRED ON ALL SLOPES GREATER THAN 3:1.

CONSTRUCTION NOTES:

1. THE CONTRACT SHALL COORDINATE THE STORING OF MATERIALS, PARKING OF VEHICLES AND RESTRICTIONS OF WORK AND ACCESS WITH THE OWNER, UNDER NO CIRCUMSTANCES SHALL ANY CONTRACTOR STORE MATERIALS OR PARK VEHICLES UNDER THE CANOPY OF EXISTING TREES.

2. THE CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND SUPERVISION NECESSARY TO ACCOMPLISH THE WORK AS SHOWN AND NOTED ON THE DRAWINGS UNLESS OTHERWISE NOTES.

3. CONTRACTOR IS RESPONSIBLE FOR KEEPING SITE CLEAN, REMOVAL OF TRASH AND REPAIR OF HAZARDOUS CONDITIONS (I.E. TOOLS, OPEN EXCAVATIONS, ETC.) ON A DAILY BASIS BY THE END OF THE WORK DAY.

4. UPON COMPLETION OF CONSTRUCTION AND PRIOR TO FINAL APPROVAL, CONTRACTORS SHALL THOROUGHLY CLEAN-UP THE PROJECT SITE, PARKING LOTS, SIDEWALKS, ETC. AND REMOVE ALL TRASH, SCRAPS, ROCKS, DEBRIS, ETC. REPAIR ALL DAMAGE TO FINISH GRADE INCLUDING WHEEL RUTS OR ANY SETTLING OR EROSION OCCURRING PRIOR TO COMPLETE.

5. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGE TO EXISTING ELECTRICAL, WATER, STORM WATER LINES, ETC. ALL DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE GOVERNING AUTHORITY, AT NO COST TO THE OWNER.

6. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. THE DRAINAGE INCLUDES SURFACE AND GROUND WATER. ANY DRAINAGE DITCH, SWALES OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE OWNING AUTHORITY.

7. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF TREES TO REMAIN.

8. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE APPROVED WASTE AREAS OR DISPOSAL SITE FOR EXCESS MATERIALS WHICH IS NOT DESIRABLE TO BE INCORPORATED INTO THE WORK INVOLVED WITH THIS PROJECT. WASTE MATERIALS INCLUDING CONSTRUCTION DEBRIS AND EXCESS EXCAVATED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSE OF PROPERLY BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE TO ACQUIRE ANY PERMIT REQUIRED FOR SUCH DISPOSAL WASTE MATERIALS. WASTE MATERIALS MUST BE REMOVED FROM THE SITE PRIOR TO INITIAL INSPECTION AND ACCEPTANCE. BURNING ON THE SITE WILL NOT BE PERMITTED. NOT SOLID MATERIALS SHALL BE DISCHARGED INTO WATERS OF THE STATE.

9. SURFACE RESTORATION: AT THE END OF THE CONSTRUCTION, THE CONTRACTOR SHALL RESTORE THE EXISTING FACILITIES AND ALL SPOIL MATERIALS, VEGEATION AND DEBRIS SHALL BE HAULED AND DISPOSED OF OFF SITE. THE PROPERTY SHALL BE MADE EQUAL TO OR BETTER THAN THE EXISTING SITE CONDITION PRIOR TO CONSTRUCTION.

TREE PRESERVATION NOTES:

1. PROTECT EXISTING TREES IN ACCORDANCE WITH ARLINGTON HEIGHTS STANDARD.

2. CALL J.U.L.I.E. AT (800) 892-0123 FOR UTILITY LOCATIONS BEFORE DIGGING.

3. ALL WORK MUST BE PERFORMED ACCORDING TO THE APPROVED TREE PRESERVATION PLAN.

4. NO GRADING/FILLING IS ALLOWED WITHIN THE PROTECTED CRITICAL ROOT ZONE.

5. NO VEHICLES OR EQUIPMENT CAN BE DRIVEN OVER OR MATERIAL STORED ON THE CRITICAL ROOT ZONES OF PROTECTED TREES OR ON THE PUBLIC RIGHT-OF-WAY. TREE, SILT, AND PERIMETER FENCING MUST BE PROPERLY MAINTAINED THROUGHOUT CONSTRUCTION. TREE FENCE FOR UNPROTECTED TREES SHOULD REMAIN IN PLACE THROUGHOUT CONSTRUCTION EXCEPT WHEN DIRECT ACCESS IS NECESSARY. BEFORE ENTERING CRITICAL ROOT ZONE AREA, CHECK WITH FORESTRY CONSULTANT.

6. ALL REQUIRED TREE, SILT, AND PERIMETER FENCING MUST REMAIN IN PLACE UNTIL THE TIME OF FINAL GRADING AND LANDSCAPING AND CAN ONLY BE REMOVED UPON REVIEW AND APPROVAL BY THE FORESTRY CONSULTANT.

7. ATTACHMENTS (WIRES, FENCES, ETC.) OTHER THAN THOSE APPROVED FOR GUYING, BRACING OR WRAPPING MUST NOT BE ATTACHED TO PROTECTED TREES.

1 GENERAL NOTES
SCALE: NTS

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Nelson Worldwide

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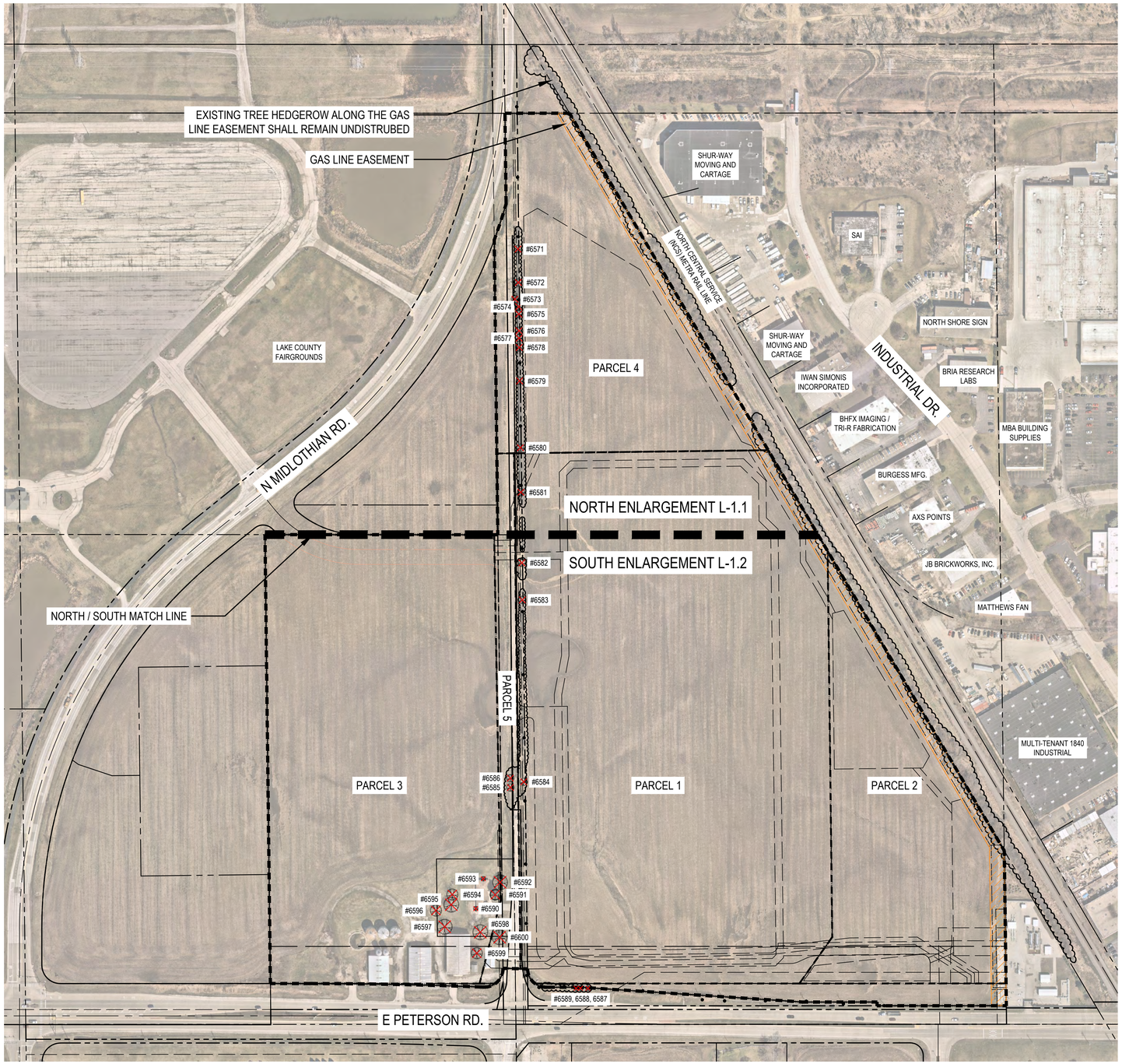

1 TREE REMOVALS KEY PLAN

SCALE: 1" = 150'

0 75' 150' 300'

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TREE REMOVALS KEY PLAN

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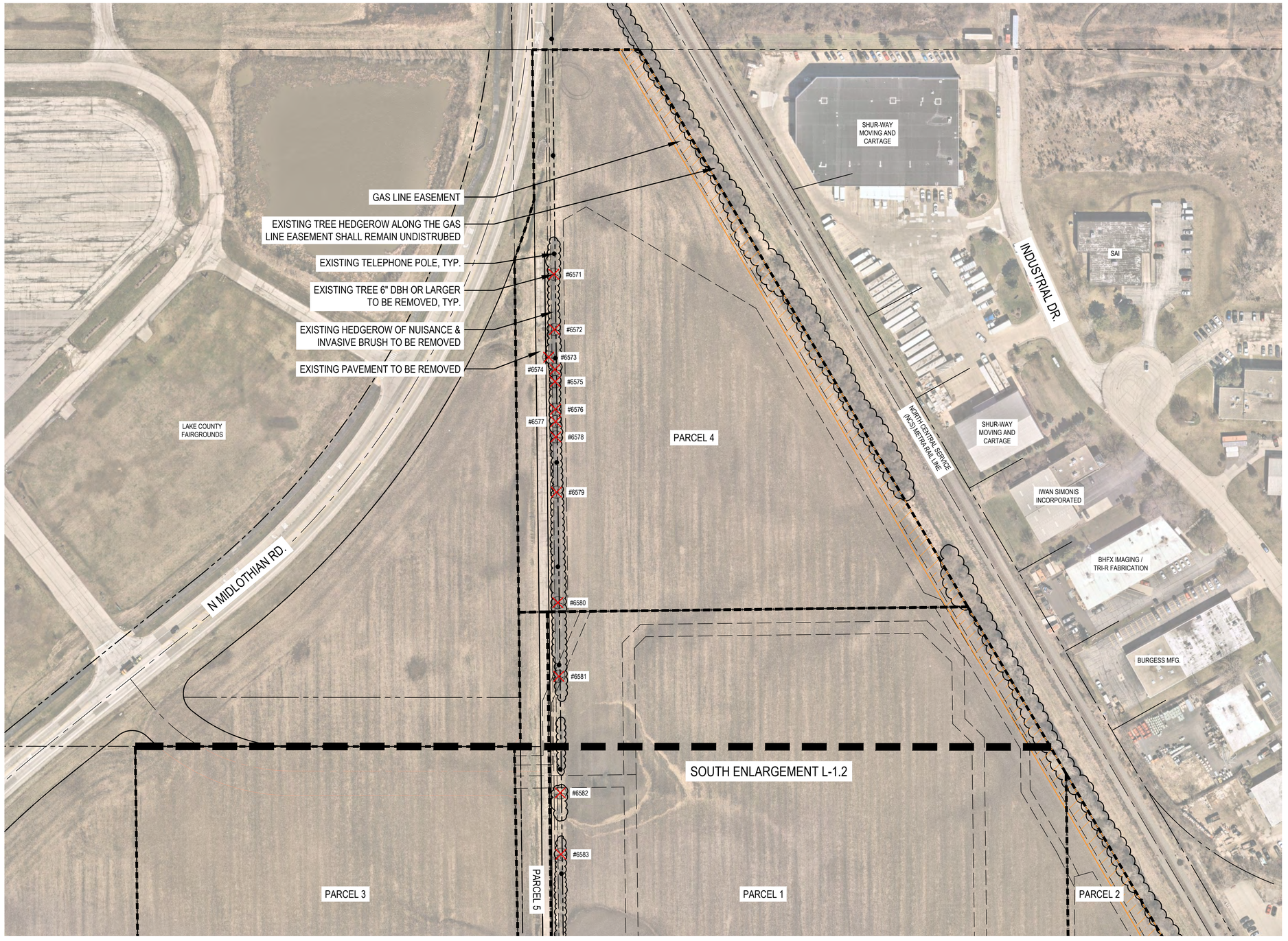

1 TREE REMOVALS NORTH ENLARGEMENT

SCALE: 1" = 80'

0 40' 80' 160'

teska

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TREE REMOVALS NORTH ENLARGEMENT

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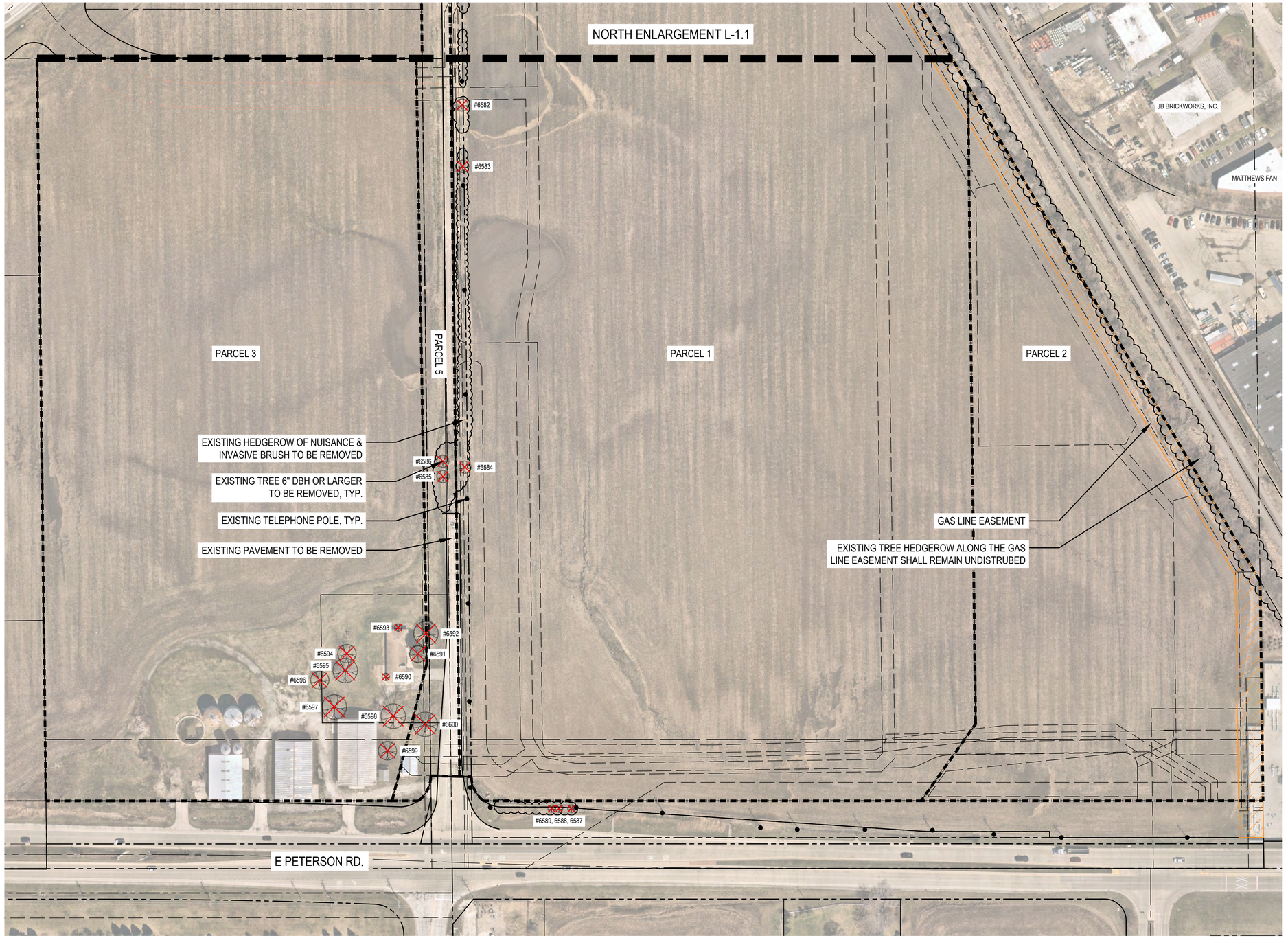

1 TREE REMOVALS SOUTH ENLARGEMENT

SCALE: 1" = 80'

0 40' 80' 160'

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issue / revision	date	description

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issue date December 5th, 2025

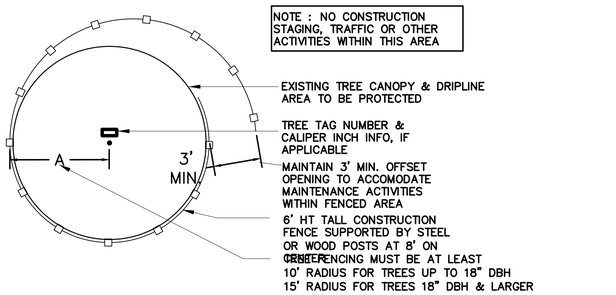
sheet name
TREE REMOVALS SOUTH ENLARGEMENT

sheet number
L-1.2

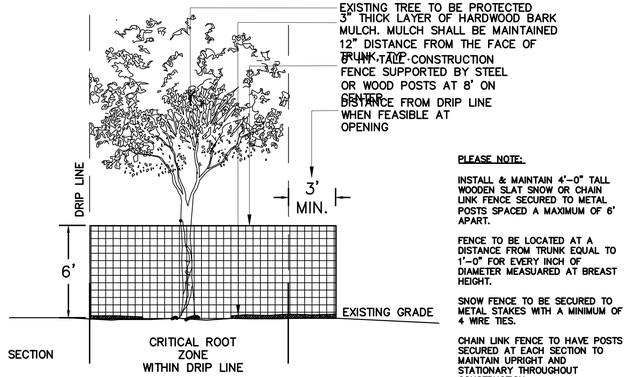
TREE INVENTORY TABLE						
TAG #	SPECIES	DBH	CONDITION, 1 = GOOD, 5 = DEAD	ACTION	SPECIES GROUP	REPLACEMENTS REQUIRED
6600	BLACK WALNUT	32”	3	REMOVE	B	2
6599	NORWAY MAPLE	22”	2	REMOVE	B	2
6598	SILVER MAPLE	38”	3	REMOVE	B	2
6597	SILVER MAPLE	36”	2	REMOVE	B	2
6596	RED MAPLE	14”	2	REMOVE	B	2
6595	NORWAY MAPLE	30”	3	REMOVE	B	2
6594	SILVER MAPLE	17”	4	REMOVE	B	2
6593	MULTI–STEM MULBERRY SPP.	6”	4	REMOVE	D	0
6592	NORWAY MAPLE	30”	3	REMOVE	B	2
6591	NORWAY SPRUCE	22”	3	REMOVE	B	2
6590	MULTI–STEM MULBERRY SPP.	4”	4	REMOVE	D	0
6589	MULTI–STEM WILLOW SPP.	24”	3	REMOVE	C	1
6588	WILLOW SPP.	8”	3	REMOVE	C	0
6587	MULTI–STEM WILLOW SPP.	28”	3	REMOVE	C	1
6586	HONEY LOCUST	6”	3	REMOVE	B	0
6585	MULTI–STEM MULBERRY SPP.	6”	4	REMOVE	D	0
6584	HONEY LOCUST	6”	3	REMOVE	B	0
6583	MULTI–STEM COTTONWOOD	6”	3	REMOVE	C	0
6582	MULTI–STEM PEAR SPP.	12”	3	REMOVE	B	2
6581	MULTI–STEM BUCKTHORN	12”	3	REMOVE	D	0
6580	MULTI–STEM BUCKTHORN	12”	3	REMOVE	D	0
6579	PEAR	8”	3	REMOVE	B	2
6578	MULTI–STEM CRABAPPLE	14”	3	REMOVE	A	3
6577	BUCKTHORN	12”	3	REMOVE	D	0
6576	MULTI–STEM BUCKTHORN	12”	3	REMOVE	D	0
6575	PEAR	11”	3	REMOVE	B	2
6574	MULBERRY SPP.	22”	3	REMOVE	D	0
6573	MULTI–STEM SIBERIAN ELM	18”	3	REMOVE	B	2
6572	PEAR	6”	3	REMOVE	B	0
6571	PEAR	10”	3	REMOVE	B	2
TOTAL						33 TREES

1 TREE REMOVALS & REPLACEMENTS TABLE

SCALE: NTS



PLAN



SECTION

PLEASE NOTE:

INSTALL & MAINTAIN 4’-0” TALL WOODEN SLAT SNOW OR CHAIN LINK FENCE SECURED TO METAL POSTS SPACED A MAXIMUM OF 6’ APART.

FENCE TO BE LOCATED AT A DISTANCE FROM TRUNK EQUAL TO 1’-0” FOR EVERY INCH OF DIAMETER MEASUARED AT BREAST HEIGHT.

SNOW FENCE TO BE SECURED TO METAL STAKES WITH A MINIMUM OF 4 WIRE TIES.

CHAIN LINK FENCE TO HAVE POSTS SECURED AT EACH SECTION TO MAINTAIN UPRIGHT AND STATIONARY THROUGHOUT CONSTRUCTION.

3 TYP. TREE PROTECTION DETAIL

SCALE: NTS

TREES REQUIRED TO BE SURVEYED:

- PROTECTED TREES ARE THOSE WHICH FALL INTO ONE OF THE FOLLOWING CATEGORIES. SPECIES WITHIN EACH CATEGORY ARE IDENTIFIED IN APPENDIX A.
- GROUP A - 6”+ DBH
- GROUP B - 8”+ DBH
- GROUP C - 10”+ DBH
  - WHEN A TREE HAS A MULTI-STEMMED TRUNK, THE DBH WILL BE CONSIDERED THE SUM OF EACH INDIVIDUAL STEM'S DBH
  - EVERGREENS - ALL EVERGREEN TREES ARE PROTECTED AT A HEIGHT OF 8 OR MORE FEET
  - UNDERSTORY TREES - PROTECTED STATUS SHALL BEGIN AT TWO (2) INCHES LESS THAN THE SPECIES GROUPING IN WHICH THEY ARE INCLUDED. EXAMPLE - GROUP A UNDERSTORY IS PROTECTED AT FOUR (4) INCHES.
  - EXCLUSIONS - GROUP D TREES AND ANY TREE UNDER THE MINIMUM DBH SHOWN IN THE SCHEDULE ABOVE SHALL NOT BE CLASSIFIED AS PROTECTED TREES.

TREE REPLACEMENT

- WHEN TREE REPLACEMENT IS REQUIRED PURSUANT TO THIS CODE SUCH REPLACEMENT SHALL FOLLOW THE GROUPING SCHEDULE PROVIDED BELOW:
- GROUP A WITH A 6”+ DBH - 3 TREES
- GROUP B WITH A 8”+ DBH - 2 TREES
- GROUP C WITH A 10”+ DBH - 1 TREE
- GROUP D - 0 TREES
- ALL REPLACEMENT TREES SHALL HAVE A MINIMUM DIAMETER OF ONE AND ONE-HALF ($1\frac{1}{2}$) INCHES.
- A GROUP A TREE SHALL BE REPLACED WITH A GROUP A TREE, GROUP B AND C TREES SHALL BE REPLACED WITH GROUP A OR B TREES.
  - **3 GROUP A TREES & 30 GROUP A OR B TREES REQUIRED**
  - **119 SHADE TREES AND SINGLE-STEM ORNAMENTAL TREES PROVIDED**
  - **160 EVERGREEN TREES PROVIDED**

2 TREE REPLACEMENT REQUIREMENTS

SCALE: NTS

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Bath Concepts

project name
Bath Concepts Facility

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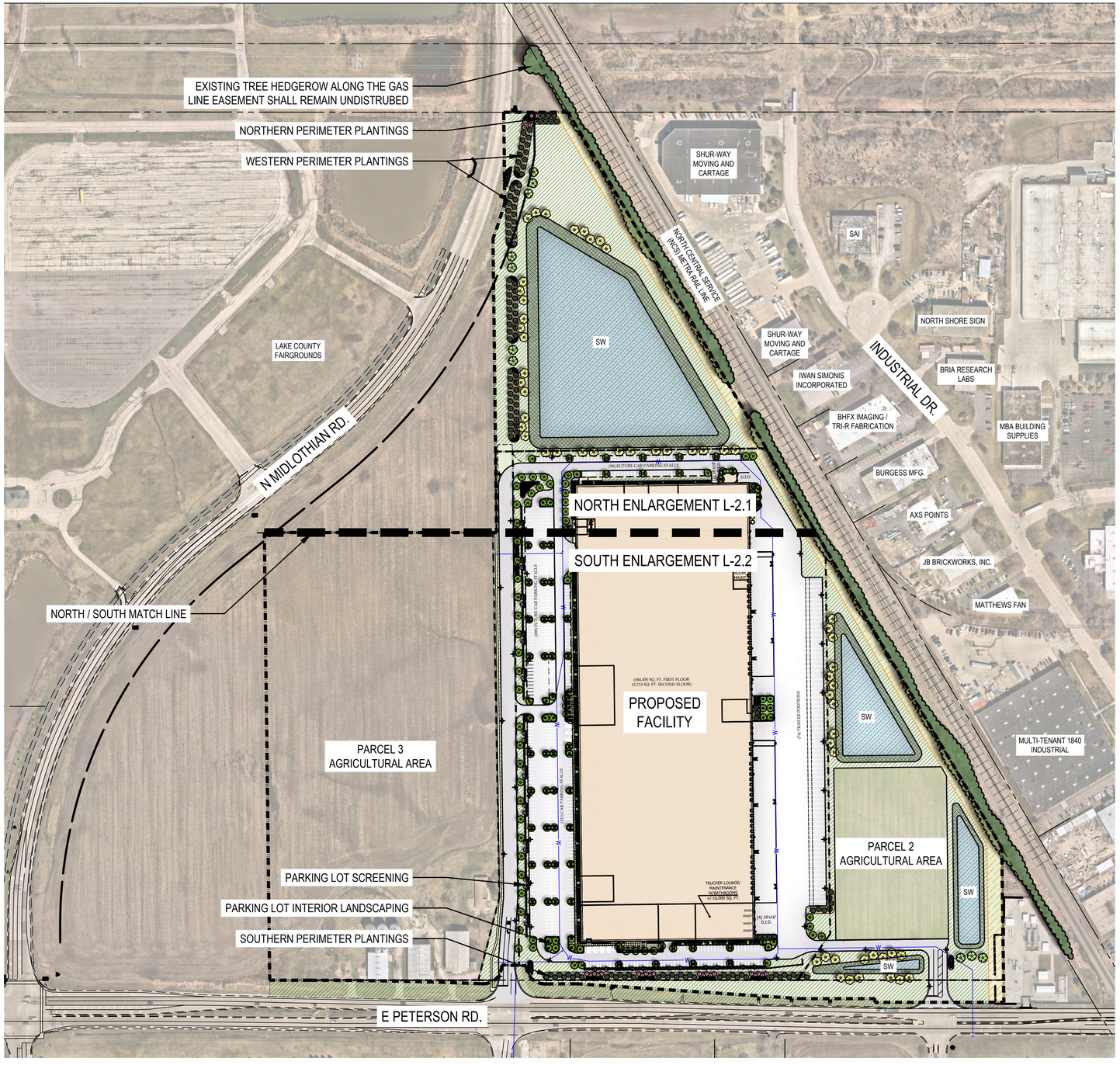
sheet name
TREE REPLACEMENT REQUIREMENTS

sheet number
L-1.3



1 ILLUSTRATIVE LANDSCAPE KEY PLAN

SCALE: 1" = 150'

0 75' 150' 300'

teska
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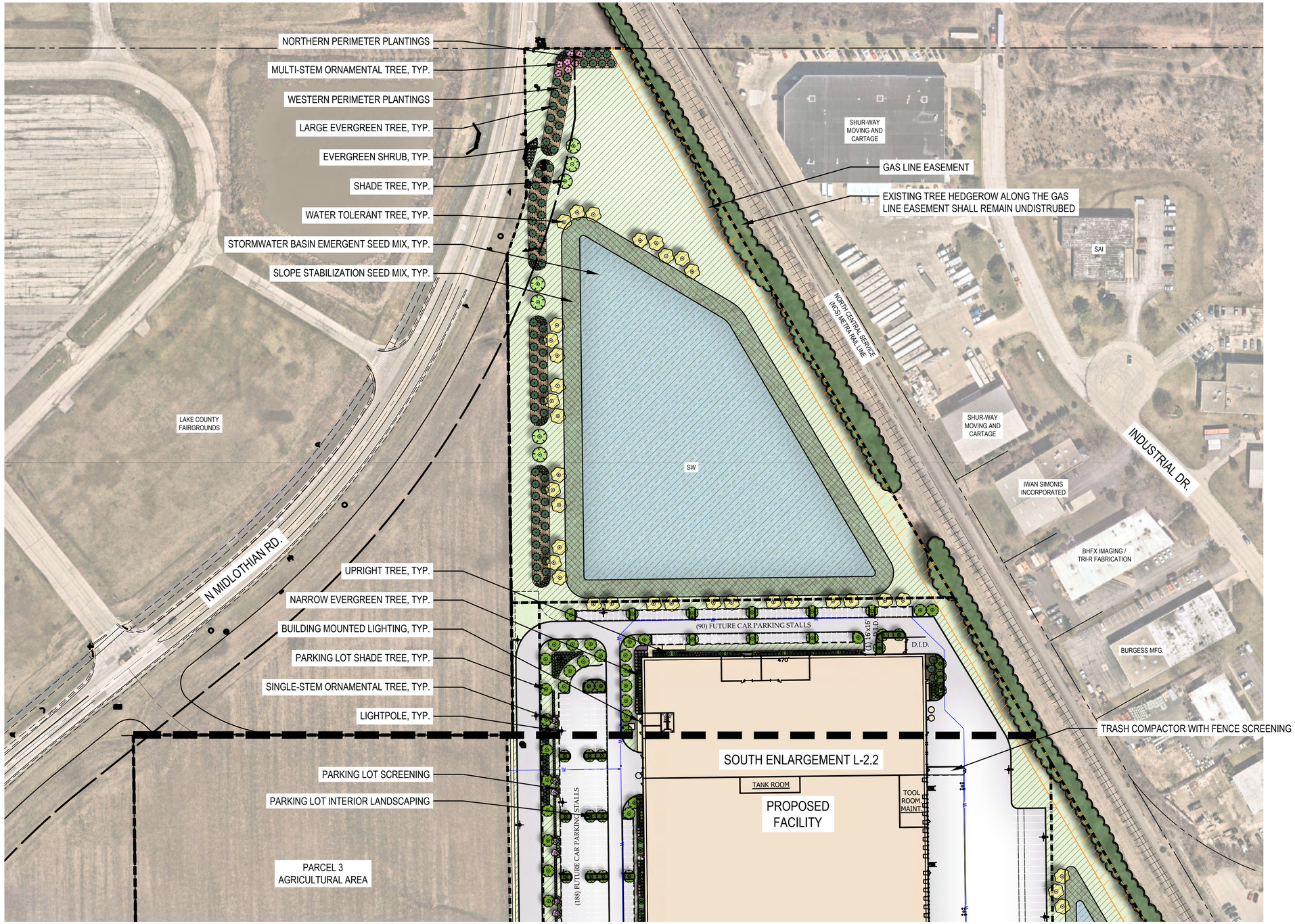
issue date December 5th, 2025

sheet name
ILLUSTRATIVE LANDSCAPE KEY PLAN

sheet number
L-2.0



1 ILLUSTRATIVE LANDSCAPE NORTH ENLARGEMENT

SCALE: 1" = 80'

0 40' 80' 160'

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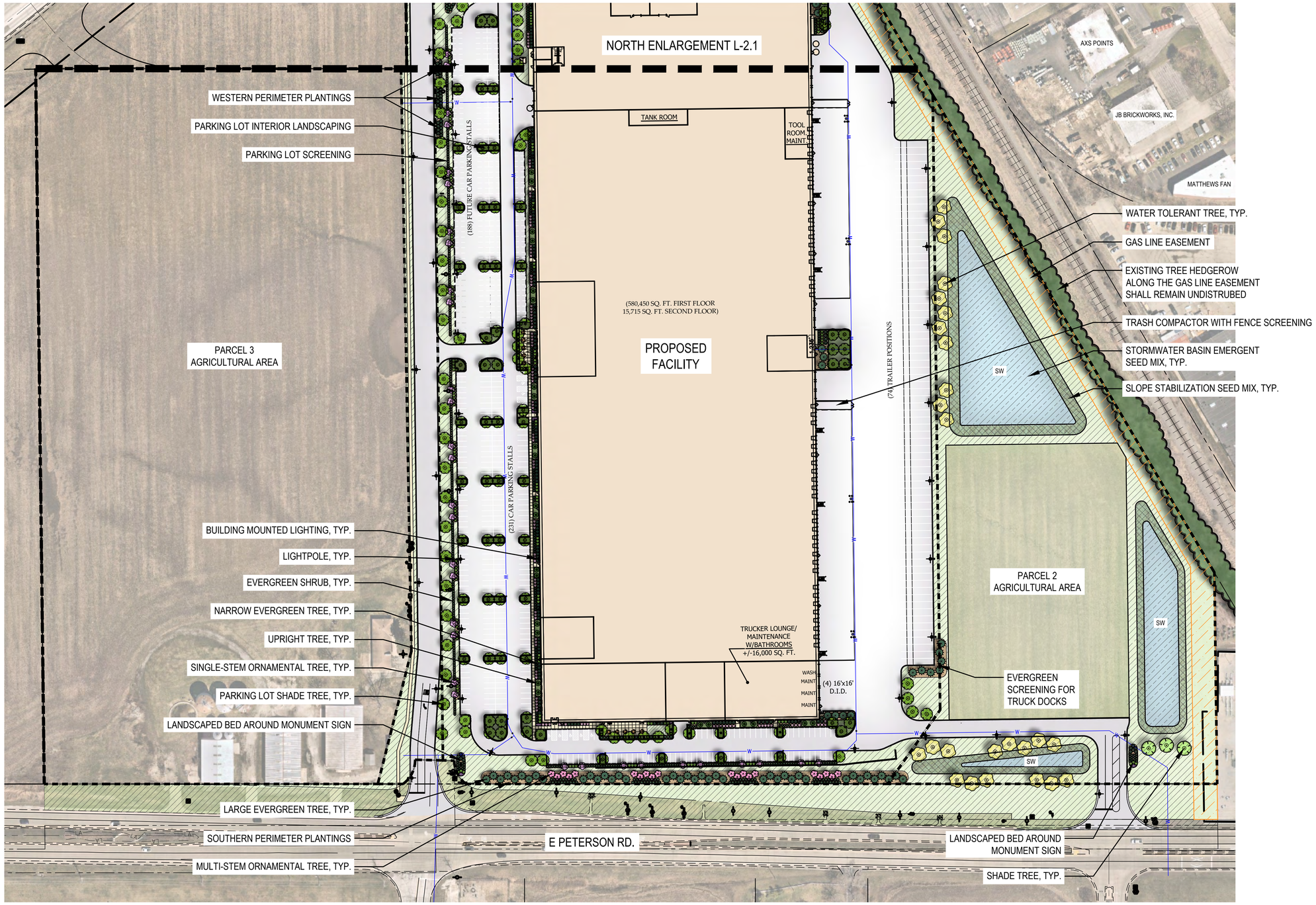
sheet name
ILLUSTRATIVE LANDSCAPE NORTH ENLARGEMENT

sheet number
L-2.1



1 ILLUSTRATIVE LANDSCAPE SOUTH ENLARGEMENT

SCALE: 1" = 80'

0 40' 80' 160'

teska
627 Grove Street, Evanston, Illinois 60201
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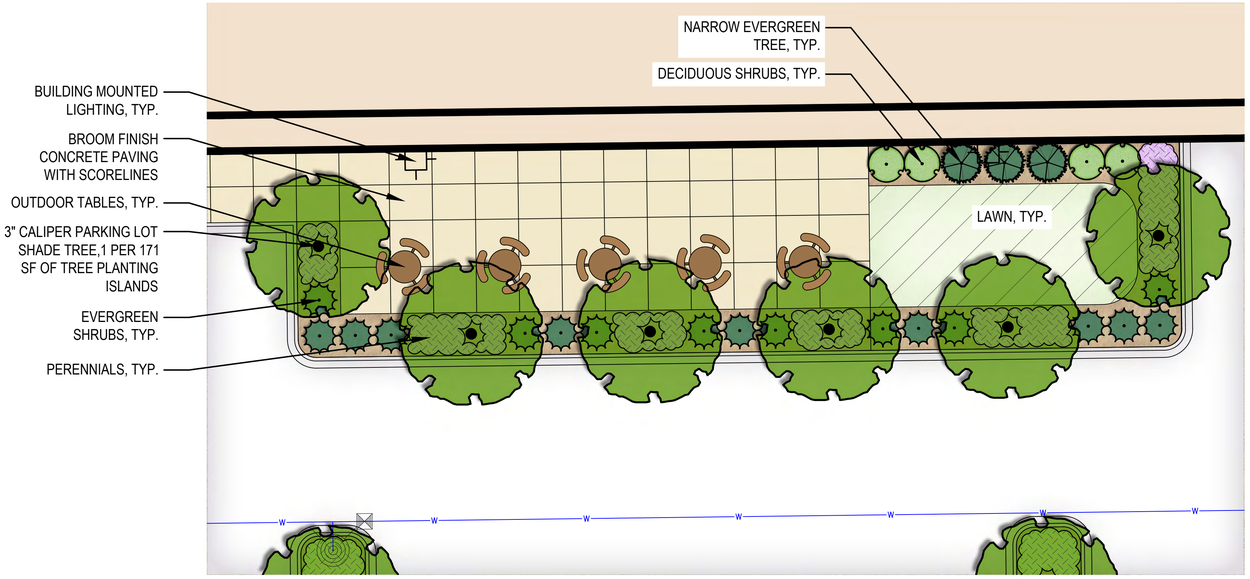
sheet name
ILLUSTRATIVE LANDSCAPE SOUTH ENLARGEMENT

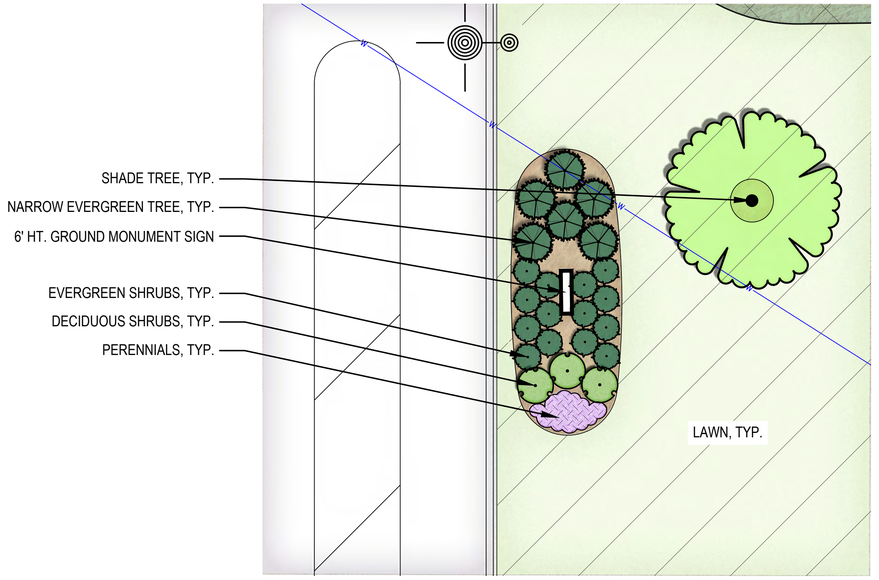
sheet number
L-2.2



1 ILLUSTRATIVE LANDSCAPE SOUTHERN EMPLOYEE TERRACE ENLARGEMENT

SCALE: 1" = 10'

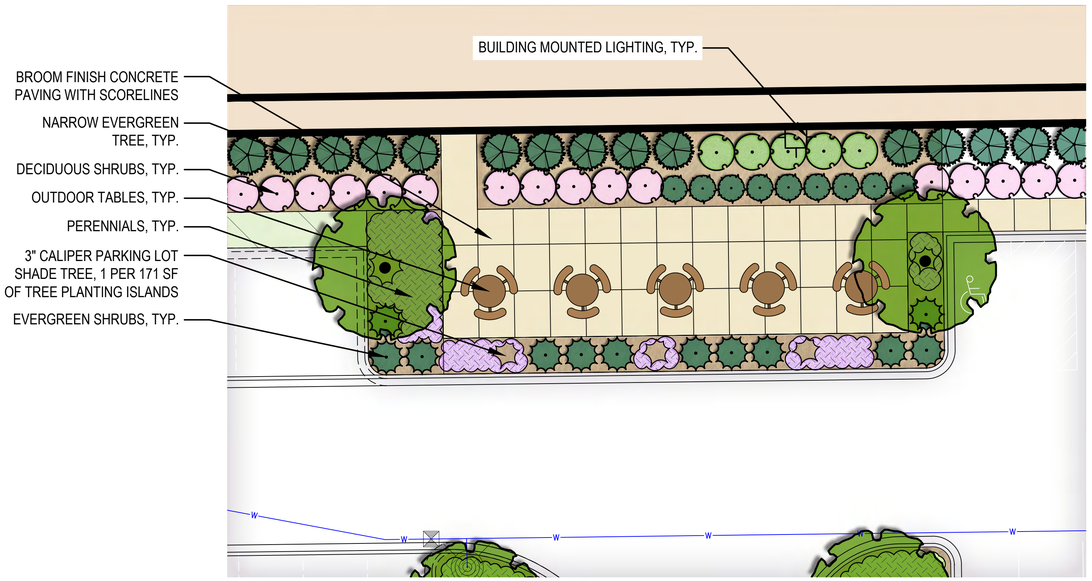
0 5' 10' 20'



2 ILLUSTRATIVE LANDSCAPE EASTERN SIGNAGE ENLARGEMENT

SCALE: 1" = 10'

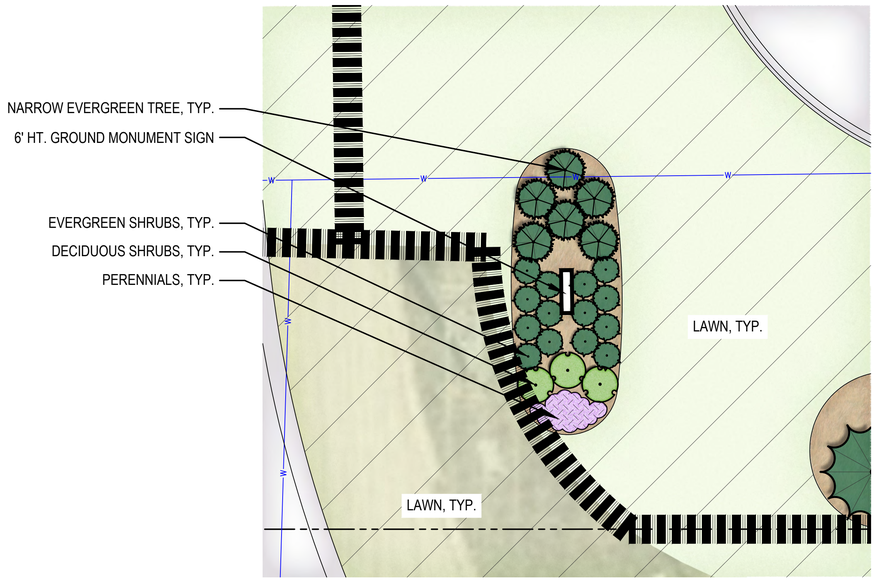
0 5' 10' 20'



3 ILLUSTRATIVE LANDSCAPE WESTERN EMPLOYEE TERRACE ENLARGEMENT

SCALE: 1" = 10'

0 5' 10' 20'



4 ILLUSTRATIVE LANDSCAPE WESTERN SIGNAGE ENLARGEMENT

SCALE: 1" = 10'

0 5' 10' 20'

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issue date December 5th, 2025

sheet name
ILLUSTRATIVE LANDSCAPE PATIO & SIGNAGE ENLARGEMENTS

sheet number
L-2.3

CONCEPT_PLANT_SCHEDULE

PARKING LOT SHADE TREE	146		
2"-4.5" CAL., B&B			
ACER X FREEMANII 'ARMSTRONG' / ARMSTRONG FREEMAN MAPLE		3" CAL., B&B, AS SHOWN	
GINKGO BILOBA 'PRINCETON SENTRY' / PRINCETON SENTRY MAIDENHAIR TREE		3" CAL., B&B, AS SHOWN	
GLEDITSIA TRIACANTHOS INERMIS 'SKYLINE' / SKYLINE HONEY LOCUST		3" CAL., B&B, AS SHOWN	
TILIA CORDATA 'GREENSPIRE' / GREENSPIRE LITTLELEAF LINDEN		3" CAL., B&B, AS SHOWN	
ULMUS X 'FRONTIER' / FRONTIER ELM		3" CAL., B&B, AS SHOWN	
UPRIGHT TREE	32		
2"-4.5" CAL., B&B			
CARPINUS BETULUS 'FRANS FONTAINE' / FRANS FONTAINE HORNBEAM		3" CAL., B&B, AS SHOWN	
LIQUIDAMBAR STYRACIFLUA 'SLENDER SILHOUETTE' / SLENDER SILHOUETTE SWEET GUM		3" CAL., B&B, AS SHOWN	
QUERCUS ROBUR FASTIGIATA / PYRAMIDAL ENGLISH OAK		3" CAL., B&B, AS SHOWN	
QUERCUS X 'CRIMSCHMIDT' / CRIMSON SPIRE OAK		3" CAL., B&B, AS SHOWN	
SHADE TREE	10		
2"-4.5" CAL., B&B			
ACER SACCHARUM 'MORTON' TM / CRESCENDO SUGAR MAPLE		3" CAL., B&B, AS SHOWN	
CELTIS OCCIDENTALIS / COMMON HACKBERRY		3" CAL., B&B, AS SHOWN	
GINKGO BILOBA / MAIDENHAIR TREE		3" CAL., B&B, AS SHOWN	
PLATANUS X ACERIFOLIA / LONDON PLANE TREE		3" CAL., B&B, AS SHOWN	
QUERCUS RUBRA / NORTHERN RED OAK		3" CAL., B&B, AS SHOWN	
TILIA AMERICANA / AMERICAN LINDEN		3" CAL., B&B, AS SHOWN	
ULMUS X 'NEW HORIZON' / NEW HORIZON ELM		3" CAL., B&B, AS SHOWN	
WATER TOLERANT TREE	57		
2"-4.5" CAL., B&B			
ACER RUBRUM 'FRANK JR.' / REDPOINTE® MAPLE		3" CAL., B&B, AS SHOWN	
BETULA NIGRA 'CULLY' / HERITAGE RIVER BIRCH MULTI-TRUNK		3" CAL., B&B, AS SHOWN	
LIQUIDAMBAR STYRACIFLUA 'ROTUNDILOBA' / ROUND-LOBED SWEET GUM		3" CAL., B&B, AS SHOWN	
METASEQUOIA GLYPTOSTROBOIDES / DAWN REDWOOD		3" CAL., B&B, AS SHOWN	
QUERCUS BICOLOR / SWAMP WHITE OAK		3" CAL., B&B, AS SHOWN	
TAXODIUM DISTICHUM / BALD CYPRESS		3" CAL., B&B, AS SHOWN	
MULTI-STEM ORNAMENTAL TREE	27		
8`-10` HT., B&B/MULTI STEM			
AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE' / AUTUMN BRILLIANCE APPLE SERVICEBERRY		8` HT., MULTI-STEM, B&B	
BETULA PAPYRIFERA / PAPER BIRCH		8` HT., MULTI-STEM, B&B	
CERCIS CANADENSIS / EASTERN REDBUD MULTI-TRUNK		8` HT., MULTI-STEM, B&B	
HAMAMELIS VIRGINIANA / COMMON WITCH HAZEL		8` HT., MULTI-STEM, B&B	
SINGLE-STEM ORNAMENTAL TREE	32		
2"-2.5" CAL., B&B			
CRATAEGUS CRUS-GALLI INERMIS / THORNLESS COCKSPUR HAWTHORN		2.5" CAL., B&B, AS SHOWN	
MAGNOLIA STELLATA 'ROYAL STAR' / ROYAL STAR MAGNOLIA		2.5" CAL., B&B, AS SHOWN	
MALUS X 'SPRING SNOW' / SPRING SNOW CRABAPPLE		2.5" CAL., B&B, AS SHOWN	
LARGE EVERGREEN TREE	131		
8.5`-10.5` HT., B&B			
JUNIPERUS VIRGINIANA 'KETELEERI' / KETELEERI EASTERN REDCEDAR		8`-10` HT., B&B, AS SHOWN	
PICEA GLAUCA DENSATA / BLACK HILLS SPRUCE		8`-10` HT., B&B, AS SHOWN	
PICEA OMORIKA 'AUREA' / GOLDEN SERBIAN SPRUCE		8`-10` HT., B&B, AS SHOWN	
PINUS STROBUS / WHITE PINE		8`-10` HT., B&B, AS SHOWN	
EVERGREEN NARROW	221		
6`-8` HT., B&B			
JUNIPERUS CHINENSIS 'MOUNTBATTEN' / MOUNTBATTEN JUNIPER		6` HT., B&B, AS SHOWN	
JUNIPERUS SCOPULORUM 'BLUE ARROW' / BLUE ARROW JUNIPER		6` HT., B&B, AS SHOWN	
JUNIPERUS VIRGINIANA 'SKYROCKET' / SKYROCKET EASTERN REDCEDAR		6` HT., B&B, AS SHOWN	
THUJA OCCIDENTALIS 'SMARAGD' / EMERALD GREEN ARBORVITAE		6` HT., B&B, AS SHOWN	

DECIDUOUS SHRUB - TALL	276		
24"-36" HT., B&B			
HYDRANGEA PANICULATA 'BULK' / QUICK FIRE® PANICLE HYDRANGEA		24" HT., POT, AS SHOWN	
PHYSOCARPUS OPULIFOLIUS 'LITTLE DEVIL' / LITTLE DEVIL™ DWARF NINEBARK		24" HT., B&B, AS SHOWN	
SPIRAEA BETULIFOLIA 'TOR' / TOR BIRCHLEAF SPIREA		24" HT., POT, AS SHOWN	
SYRINGA PATULA `MISS KIM` / MISS KIM LILAC		24" HT., POT, AS SHOWN	
VIBURNUM CARLESII / KOREANSPICE VIBURNUM		24" HT., POT, AS SHOWN	
VIBURNUM TRILOBUM 'RED WING' / RED WING AMERICAN CRANBERRYBUSH		24" HT., POT, AS SHOWN	
DECIDUOUS SHRUB - SHORT	14		
18"-24" HT., B&B			
CEANOTHUS AMERICANUS / NEW JERSEY TEA		24" HT., POT, AS SHOWN	
DIERVILLA LONICERA / BUSH HONEYSUCKLE		24" HT., POT, AS SHOWN	
HYDRANGEA QUERCIFOLIA 'PEE WEE' / PEE WEE OAKLEAF HYDRANGEA		24" HT., POT, AS SHOWN	
RIBES ALPINUM `GREEN MOUND` / GREEN MOUND ALPINE CURRANT		24" HT., POT, AS SHOWN	
SPIRAEA BETULIFOLIA / BIRCHLEAF SPIREA		24" HT., POT, AS SHOWN	
EVERGREEN SHRUB - SHORT	423		
24" HT., B&B			
BUXUS X 'GREEN MOUNTAIN' / GREEN MOUNTAIN BOXWOOD		24" SPREAD, POT, AS SHOWN	
ILEX GLABRA 'ILEXFARROWTRACEY' / STRONGBOX® INKBERRY HOLLY		24" SPREAD, POT, AS SHOWN	
JUNIPERUS CHINENSIS `SEA GREEN` / SEA GREEN JUNIPER		24" SPREAD, POT, AS SHOWN	
JUNIPERUS HORIZONTALIS PLUMOSA `YOUNGSTOWN` / CREEPING JUNIPER		24" SPREAD, POT, AS SHOWN	
TAXUS X MEDIA `EVERLOW` / EVERLOW YEW		24" SPREAD, POT, AS SHOWN	
EVERGREEN SHRUB - TALL	204		
PERENNIAL, ORNAMENTAL GRASSES, GROUNDCOVER	17 512 SF		
1 GAL. @ 18" O.C., CG			
ALLIUM X 'MILLENIUM' / MILLENIUM ORNAMENTAL ONION	4 562	1 GAL., POT	
ANEMONE X HYBRIDA 'SEPTEMBER CHARM' / SEPTEMBER CHARM JAPANESE ANEMONE	4 562	1 GAL., POT	
CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER' / KARL FOERSTER FEATHER REED GRASS	4 562	1 GAL., POT	
CALAMINTHA NEPETA 'MONTROSE WHITE' / MONTROSE WHITE LESSER CALAMINT	4 562	1 GAL., POT	
ECHINACEA PURPUREA 'KIM'S KNEE HIGH' / KIM'S KNEE HIGH CONEFLOWER	4 562	1 GAL., POT	
GERANIUM X 'ROZANNE' / ROZANNE CRANESBILL	4 562	1 GAL., POT	
NEPETA X FAASSENII 'WALKER'S LOW' / WALKER'S LOW CATMINT	4 562	1 GAL., POT	
PENNISETUM ALOPECUROIDES 'HAMELN' / HAMELN FOUNTAIN GRASS	4 562	1 GAL., POT	
PEROVSKIA ATRIPLICIFOLIA 'LITTLE SPIRE' / LITTLE SPIRE RUSSIAN SAGE	4 562	1 GAL., POT	
RUDBECKIA FULGIDA `GOLDSTURM` / GOLDSTURM BLACK-EYED SUSAN	4 562	1 GAL., POT	
RUDBECKIA X 'AMERICAN GOLD RUSH' / AMERICAN GOLD RUSH CONEFLOWER	4 562	1 GAL., POT	
SESLERIA AUTUMNALIS / AUTUMN MOOR GRASS	4 562	1 GAL., POT	
SPOROBOLUS HETEROLEPIS / PRAIRIE DROPSEED	4 562	1 GAL., POT	
SOD/SEED	506 689 SF		
SODDED DROUGHT TOLERANT TURF / SODDED DROUGHT TOLERANT TURF		SOD	
STORMWATER BASIN EMERGENT SEED MIX	228 330 SF		
SLOPE STABILIZATION SEED MIX	93 415 SF		

1 LANDSCAPE SCHEDULE

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Tel 847.869.2015 Fax 847.869.2059

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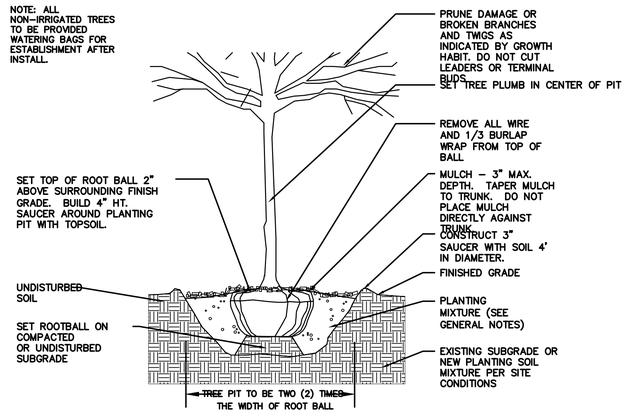
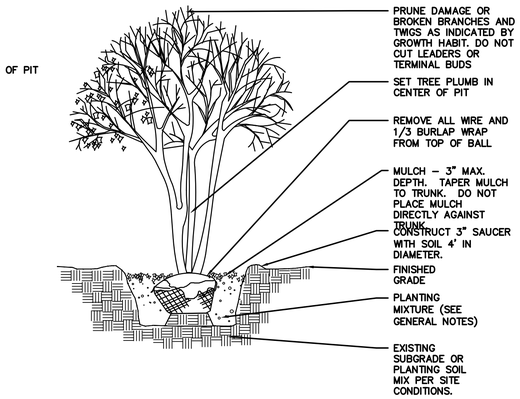
sheet name
LANDSCAPE SCHEDULE

sheet number
L-2.4



1 TYP. DECIDUOUS TREE PLANTING DETAIL
SCALE: NTS



2 TYP. ORNAMENTAL TREE PLANTING DETAIL
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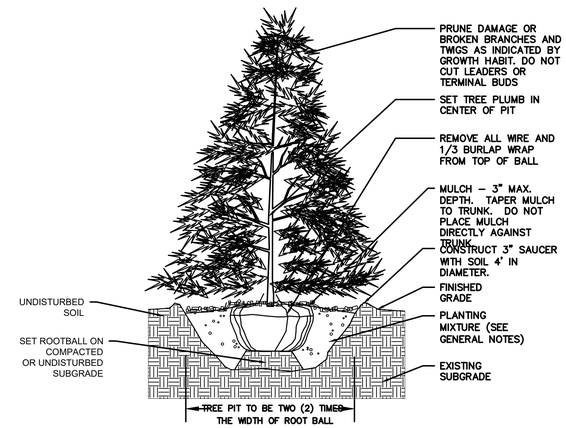
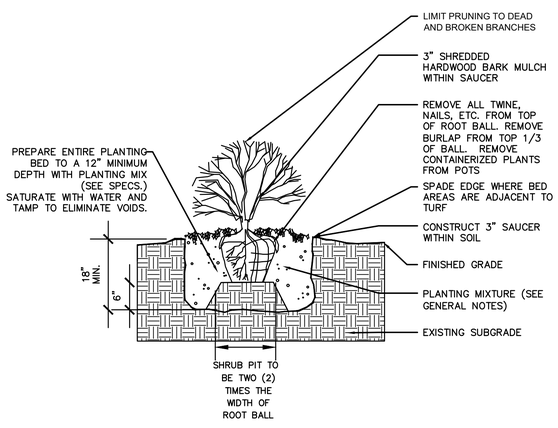
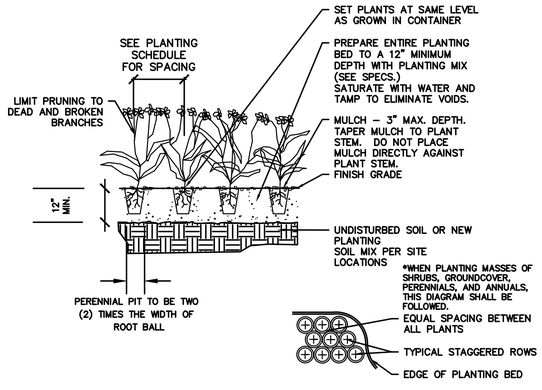


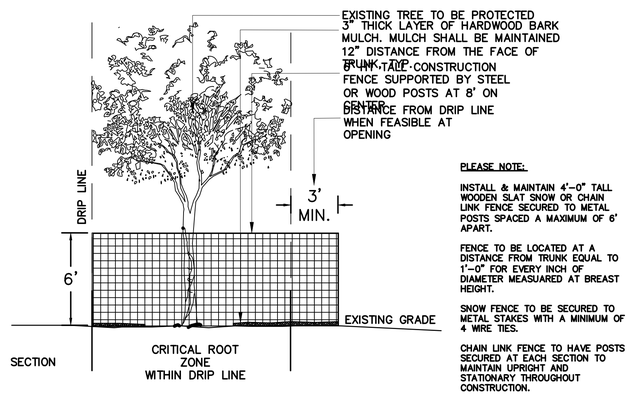
3 TYP. EVERGREEN TREE PLANTING DETAIL
SCALE: NTS



4 TYP. SHRUB PLANTING DETAIL
SCALE: NTS



5 TYP. PERENNIAL PLANTING DETAIL
SCALE: NTS



PLEASE NOTE:

INSTALL & MAINTAIN 4'-0" TALL WOODEN SLAT SNOW OR CHAIN LINK FENCE SECURED TO METAL POSTS SPACED A MAXIMUM OF 6' APART.

FENCE TO BE LOCATED AT A DISTANCE FROM TRUNK EQUAL TO 1'-0" FOR EVERY INCH OF DIAMETER MEASUARED AT BREAST HEIGHT.

SNOW FENCE TO BE SECURED TO METAL STAKES WITH A MINIMUM OF 4 WIRE TIES.

CHAIN LINK FENCE TO HAVE POSTS SECURED AT EACH SECTION TO MAINTAIN UPRIGHT AND STATIONARY THROUGHOUT CONSTRUCTION.

6 TYP. TREE PROTECTION DETAIL
SCALE: NTS

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issue / revision	date	description

pm la cad

issue date December 5th, 2025

sheet name
LANDSCAPE DETAILS

sheet number
L-3.0

SUMMARY OF LANDSCAPE REQUIREMENTS

PERIMETER LANDSCAPED OPEN SPACE (SEC. 26-13-2)

REQUIREMENT

I-1 DISTRICT: FOR ALL USES IN THE... I-1 LIMITED INDUSTRIAL DISTRICT, AND THE I-2 EAST DOWNTOWN INDUSTRIAL DISTRICT, THERE SHALL BE PROVIDED A PERIMETER LANDSCAPED OPEN SPACE WITH A MINIMUM WIDTH OF NO LESS THAN TEN (10) FEET ALONG EVERY LOT LINE.

O-2 DISTRICT: FOR ALL USES IN THE O-2 OFFICE, MANUFACTURING AND DISTRIBUTION PARK DISTRICT, THERE SHALL BE PROVIDED A PERIMETER LANDSCAPED OPEN SPACE WITH A MINIMUM WIDTH OF NO LESS THAN TEN (10) FEET ALONG EVERY LOT LINE, EXCEPT ANY LOT LINE ABUTTING A RESIDENTIAL DISTRICT, ROUTE 45 OR WINCHESTER ROAD, FOR WHICH THERE SHALL BE PROVIDED A PERIMETER LANDSCAPED OPEN SPACE WITH A MINIMUM WIDTH OF NO LESS THAN TWENTY (20) FEET.

PROPOSED

PROPOSED SITE PLANS AND LANDSCAPE PLANS COMPLY.

LANDSCAPE MATERIALS (SEC. 26-13-2.2)

REQUIREMENT

EVERY REQUIRED PERIMETER LANDSCAPED OPEN SPACE SHALL CONSIST OF A COMBINATION OF SHADE AND ORNAMENTAL TREES, EVERGREEN TREES AND SHRUBS (SEE FIGURE 26-13-1). AREAS NOT PLANTED WITH TREES OR SHRUBS SHALL BE MAINTAINED AS A COMBINATION OF GROUNDCOVER AND DECORATIVE PAVING MATERIAL.

(A) *QUANTITY.* THE MINIMUM NUMBER OF SHADE AND ORNAMENTAL TREES, EVERGREEN TREES AND SHRUBS REQUIRED IN A PERIMETER LANDSCAPED OPEN SPACE SHALL BE BASED ON THE TOTAL LINEAR LENGTH OF THE SUBJECT OPEN SPACE, AS MEASURED ALONG THE RELEVANT LOT LINE, AS SPECIFIED IN THE FOLLOWING TABLE:

QUANTITY OF TREES AND SHRUBS

TYPE OF TREE/SHRUB	NUMBER OF TREES/SHRUBS REQUIRED
SHADE OR ORNAMENTAL TREES	1 FOR EVERY 50 LINEAR FEET OR MAJOR FRACTION THEREOF (MEASURED AT THE LOT LINE)
EVERGREEN TREES	1 FOR EVERY 25 LINEAR FEET OR MAJOR FRACTION THEREOF (MEASURED AT THE LOT LINE)
EVERGREEN SHRUBS	1 FOR EVERY 25 LINEAR FEET OR MAJOR FRACTION THEREOF (MEASURED AT THE LOT LINE)

PROPOSED

NORTH PROPERTY LINE (174 LF):

SHADE TREE/ORNAMENTAL TREE REQUIREMENT (AT 1 TREE PER 50 LF)	= 3 TREES
EVERGREEN TREE REQUIREMENT (AT 1 TREE PER 25 LF)	= 7 TREES
EVERGREEN SHRUB REQUIREMENT (AT 1 PER 25 LF)	= 7 SHRUBS
PROPOSED SHADE/ ORNAMENTAL TREES	*= 3 TREES*
PROPOSED EVERGREEN TREES	*= 7 TREES*
PROPOSED EVERGREEN SHRUBS	*= 7 SHRUBS*

EAST PROPERTY LINE PARALLEL TO NCS RAIL LINE (2,562 LF):

SHADE TREE/ORNAMENTAL TREE REQUIREMENT (AT 1 TREE PER 50 LF)	= 51 TREES
EVERGREEN TREE REQUIREMENT (AT 1 TREE PER 25 LF)	= 102 TREES
EVERGREEN SHRUB REQUIREMENT (AT 1 PER 25 LF)	= 102 SHRUBS
PROPOSED SHADE/ ORNAMENTAL TREES	*= 33 TREES*
PROPOSED EVERGREEN TREES	*= 15 TREES*
PROPOSED EVERGREEN SHRUBS	*= 14 SHRUBS*

*WE WILL BE SEEKING A VARIATION FROM SECTION 26-13-2.2 OF THE LIBERTYVILLE ZONING CODE (RELATED TO LANDSCAPING MATERIALS / PLANTINGS).

SOUTH PROPERTY LINE PARALLEL TO PETERSON RD (915 LF):

SHADE TREE/ORNAMENTAL TREE REQUIREMENT (AT 1 TREE PER 50 LF)	= 18 TREES
EVERGREEN TREE REQUIREMENT (AT 1 TREE PER 25 LF)	= 37 TREES
EVERGREEN SHRUB REQUIREMENT (AT 1 PER 25 LF)	= 37 SHRUBS
PROPOSED SHADE/ ORNAMENTAL TREES	*= 20 TREES*
PROPOSED EVERGREEN TREES	*= 45 TREES*
PROPOSED EVERGREEN SHRUBS	*= 90 SHRUBS*

WEST PROPERTY LINE PARALLEL TO N HARRIS RD (2,366 LF):

SHADE TREE/ORNAMENTAL TREE REQUIREMENT (AT 1 TREE PER 50 LF)	= 47 TREES
EVERGREEN TREE REQUIREMENT (AT 1 TREE PER 25 LF)	= 95 TREES
EVERGREEN SHRUB REQUIREMENT (AT 1 PER 25 LF)	= 95 SHRUBS
PROPOSED SHADE/ ORNAMENTAL TREES	*= 47 TREES*
PROPOSED EVERGREEN TREES	*= 95 TREES*
PROPOSED EVERGREEN SHRUBS	*= 95 SHRUBS*

LANDSCAPE MATERIALS (SEC. 26-13-2.2 continued)

(B) SIZE AND DISTRIBUTION OF TREES AND SHRUBS. THE MINIMUM NUMBER OF SHADE OR ORNAMENTAL TREES AND EVERGREEN TREES AND SHRUBS REQUIRED FOR A PERIMETER LANDSCAPED OPEN SPACE, AS DETERMINED BY SUBSECTION 26-13-2.2(A), SHALL BE PROVIDED IN THE FOLLOWING SIZES:

SIZE AND DISTRIBUTION OF TREES AND SHRUBS

TYPE OF TREE	SIZE OF TREES	PERCENTAGE
SHADE TREES/SINGLE TRUNK ORNAMENTAL	2"—2.5" CALIPER	45% OF TOTAL NUMBER REQUIRED
	3"—4" CALIPER	35% OF TOTAL NUMBER REQUIRED
	4.5" CALIPER OR MORE	20% OF TOTAL NUMBER REQUIRED
MULTIPLE STEM ORNAMENTAL TREES	6' HEIGHT	100% OF TOTAL NUMBER REQUIRED
EVERGREEN TREES	6'—8' HEIGHT	40% OF TOTAL NUMBER REQUIRED
	8.5'—10' HEIGHT	40% OF TOTAL NUMBER REQUIRED
	10.5' HEIGHT OR MORE	20% OF TOTAL NUMBER REQUIRED
EVERGREEN SHRUBS	NOT TO EXCEED 3' HEIGHT	100%

PROPOSED

SHADE TREES & SINGLE STEM ORNAMENTAL TREES:

TOTAL PROPOSED	= 80 TREES
45% 2"-2.5" CALIPER SHADE	= 36 TREES
35% 3"-4" CALIPER	= 28 TREES
20% 4.5" CALIPER OR MORE	= 16 TREES

MULTIPLE STEM ORNAMENTAL TREES:

TOTAL PROPOSED	= 23 TREES
6' HEIGHT	= 23 TREES

EVERGREEN TREES:

TOTAL PROPOSED	= 162 TREES
40% 6'-8' HEIGHT	= 65 TREES
40% 8.5'-10' HEIGHT	= 65 TREES
20% 10.5' HEIGHT OR MORE	= 32 TREES

EVERGREEN SHRUBS:

TOTAL PROPOSED	= 206 SHRUBS
NOT TO EXCEED 3' MATURE HEIGHT	= 206 SHRUBS

PARKING LOTS AND STRUCTURES (SEC. 26-13-3)

26-13-3.1.PARKING LOT SCREENING

REQUIREMENT

EVERY PARKING LOT SHALL BE BUFFERED AND SCREENED WITH APPROPRIATE SCREENING DEVICES. THE LANDSCAPING AND SCREENING TREATMENT SHALL BE DESIGNED AND MAINTAINED TO A HEIGHT OF AT LEAST THREE (3) FEET ALONG EVERY LOT LINE.

PROPOSED

CONTINUOUS HEDGE ROW ALONG SOUTH AND WEST SIDES OF PARKING LOT MAINTAINED AT A HEIGHT OF 3 FEET

26-13-3.2.PARKING LOT INTERIOR LANDSCAPING.

(A) *REQUIRED INTERIOR LANDSCAPING* INTERIOR LANDSCAPING SHALL BE PROVIDED FOR ALL PARKING LOTS CONTAINING FIFTEEN (15) OR MORE SPACES.

PROPOSED SITE PLANS AND LANDSCAPE PLANS COMPLY.

(B) *AREA* INTERIOR LANDSCAPING SHALL CONSTITUTE AT LEAST TEN (10) PERCENT OF THE AREA OF THE PARKING LOT.

PROPOSED PARKING LOT (EXCLUDING LOADING AREA) APPROXIMATELY 211,167 SF., 10% OF 211,167 = 21,117 SF.
PROPOSED INTERIOR LANDSCAPE APPROXIMATELY 24,604 SF. (11.65%)

(C) *TREE PLANTING ISLANDS* INTERIOR LANDSCAPING SHALL CONSIST OF TREE PLANTING ISLANDS WITH A MINIMUM AREA OF ONE HUNDRED SEVENTY-ONE (171) SQUARE FEET AND A MINIMUM WIDTH OF NINE (9) FEET.

PROPOSED SITE PLANS AND LANDSCAPE PLANS COMPLY.

(D) *DISPERSAL* WHEN MORE THAN ONE (1) TREE PLANTING ISLAND IS PROVIDED, SUCH ISLANDS SHALL BE SPACED THROUGHOUT THE PARKING LOT.

PROPOSED SITE PLANS AND LANDSCAPE PLANS COMPLY.

LANDSCAPE REDUCTION (SEC. 26-13-2.2)

TOTAL PERIMETER PLANTINGS REDUCTION:

SHADE TREE/ORNAMENTAL TREE REQUIREMENT (AT 1 TREE PER 50 LF)	= 119 TREES
EVERGREEN TREE REQUIREMENT (AT 1 TREE PER 25 LF)	= 241 TREES
EVERGREEN SHRUB REQUIREMENT (AT 1 PER 25 LF)	= 241 SHRUBS
PROPOSED SHADE/ ORNAMENTAL TREES	*= 103 TREES*
PROPOSED EVERGREEN TREES	*= 162 TREES*
PROPOSED EVERGREEN SHRUBS	*= 206 SHRUBS*
PROPOSED SHADE/ ORNAMENTAL TREE REDUCTION	*= 13%*
PROPOSED EVERGREEN TREES REDUCTION	*= 33%*
PROPOSED EVERGREEN SHRUBS REDUCTION	*= 15%*

1 SUMMARY OF LANDSCAPE REQUIREMENTS
SCALE: NTS

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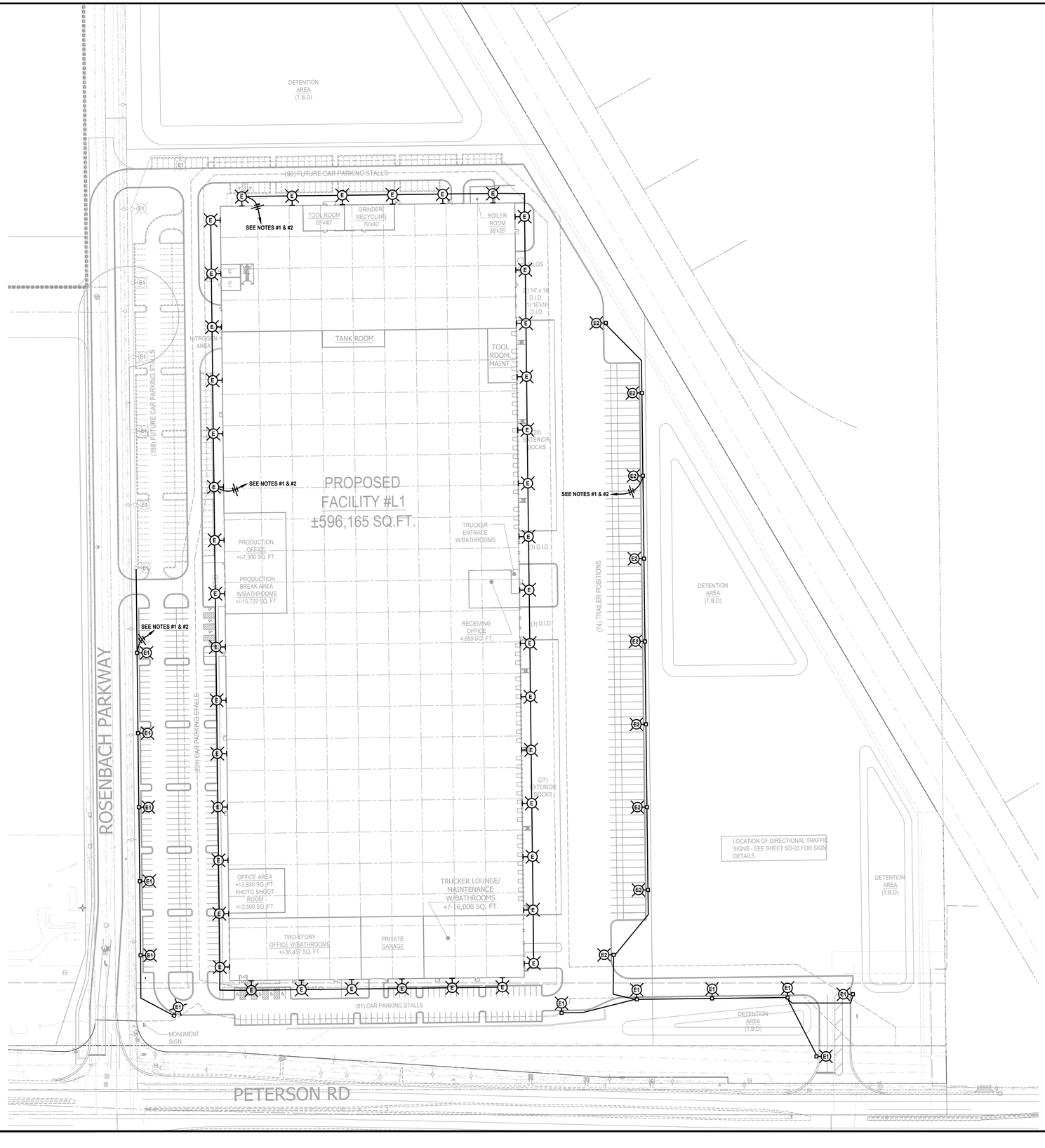
issue / revision | date | description

pm | la | cad

issue date December 5th, 2025

sheet name
LANDSCAPE ORDINANCE SUMMARY

sheet number
L-4.0



ELECTRICAL SITE PLAN
SCALE: 1"=80'-0"

NOTES:

1. EACH LIGHT FIXTURE TO HAVE MOTION SENSOR CONTROL. LIGHT FIXTURES TO DIM TO 33% AFTER 15 MINUTES OF NO MOTION DETECTED. ALL LIGHTS ON THAT CIRCUIT TO COME TO FULL BRIGHTNESS WHEN ONE MOTION SENSOR IS ACTIVATED.
2. 2 #8 THWN & 1 #8 GND. IN 3/4" C. TO LIGHTING PANEL VIA PHOTOCELL-ON, TIMECLOCK-OFF.

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PROJECT:

BATH CONCEPTS INC
100 ROSENBACH PARKWAY
LIBERTVILLE, ILLINOIS

Description:	No:	Date:

PROFESSIONAL SEAL:

LICENSED PROFESSIONAL ENGINEER
DAVID B. KORNACKI
062.052986
STATE OF ILLINOIS

Date: 11/21/25
Lic. Exp.: 11/30/25

SHEET NAME:

ELECTRICAL SITE PLAN

Proj. No: 25165	Reviewed By: D.B.K.
Drawn By: S.M.B.	Approved By: D.B.K.

SHEET No:

E100

ALL DIMENSIONS AND CONDITIONS MUST BE CHECKED AND VERIFIED ON SITE BY THE CONTRACTOR AND SUB-CONTRACTORS PRIOR TO PERFORMING THE WORK. THE PROJECT MANAGER SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
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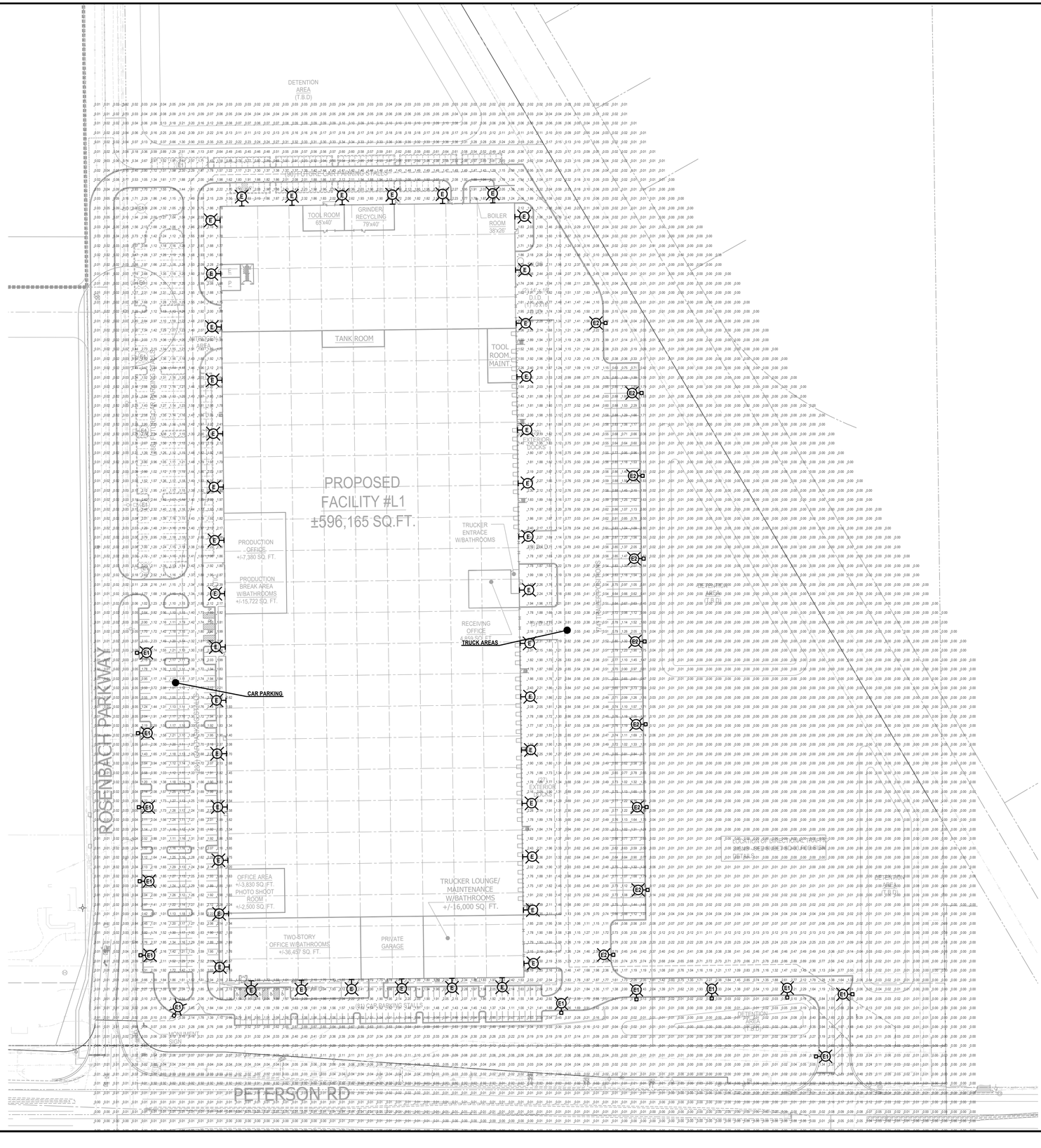

LIGHTING ANALYSIS NOTES: (CAR PARKING)

1.	AVERAGE FOOTCANDLES:	1.64
2.	MAXIMUM FOOTCANDLES:	3.57
3.	MINIMUM FOOTCANDLES:	0.50
4.	MAXIMUM/MINIMUM RATIO:	7.1:1
5.	AVERAGE/MINIMUM RATIO:	3.3:1

LIGHTING ANALYSIS NOTES: (TRUCK AREA)

1.	AVERAGE FOOTCANDLES:	1.22
2.	MAXIMUM FOOTCANDLES:	2.82
3.	MINIMUM FOOTCANDLES:	0.35
4.	MAXIMUM/MINIMUM RATIO:	8.1:1
5.	AVERAGE/MINIMUM RATIO:	3.5:1

PHOTOMETRIC SITE PLAN
SCALE: 1"=80'-0"

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Date: 11/21/25
Lic. Exp.: 11/30/25

SHEET NAME:

PHOTOMETRIC SITE PLAN

Proj. No: 25165	Reviewed By: D.B.K.
Drawn By: S.M.B.	Approved By: D.B.K.

SHEET No:

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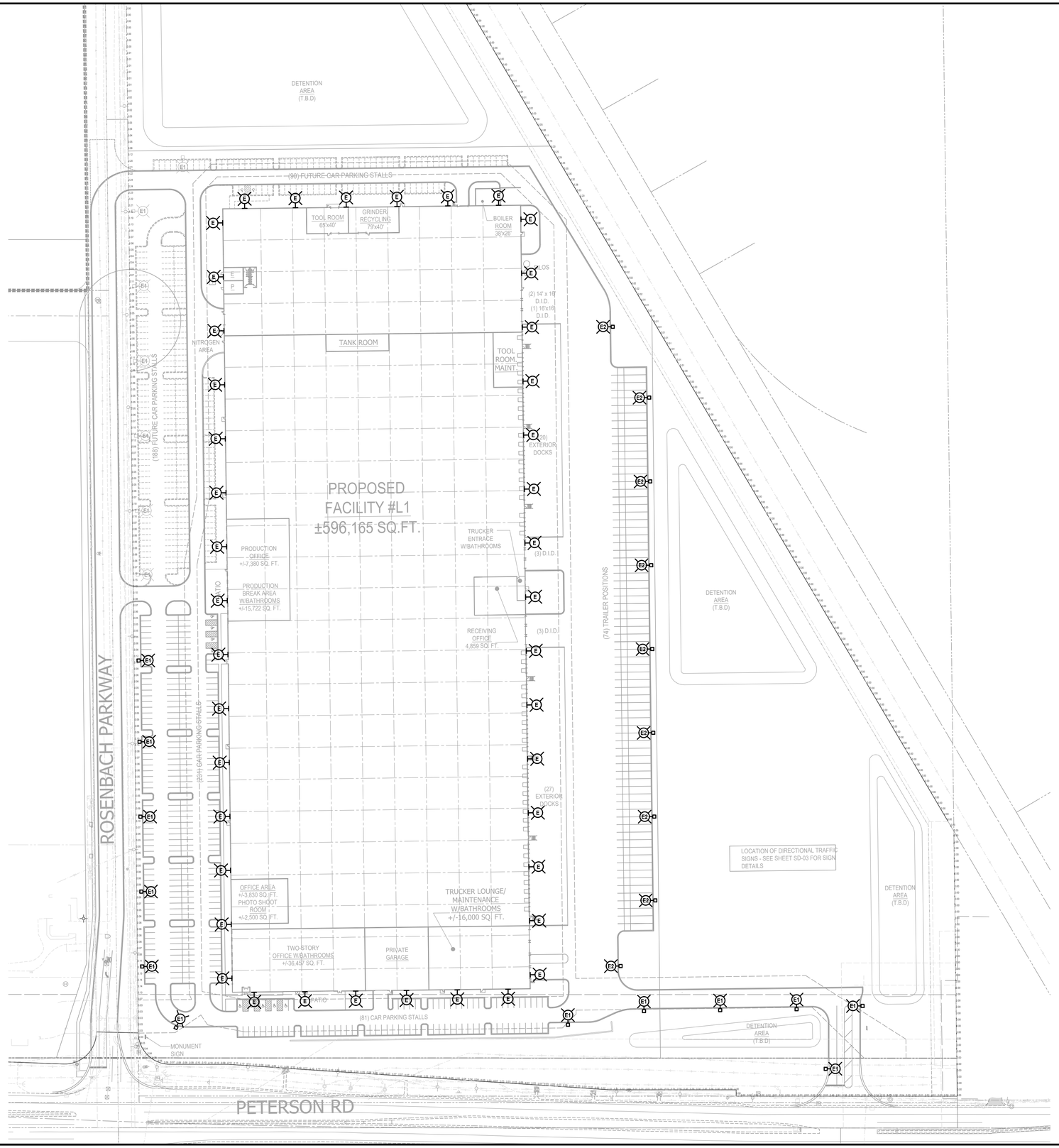

LIBERTYVILLE CODE:

1. **PARKING LOT LIGHTING SHALL NOT EXCEED (2) FOOT-CANDLES, MEASURED AT ANY NON-RESIDENTIAL PROPERTY LINE, AND 1/2 FOOT-CANDLE, MEASURED AT ANY RESIDENTIAL LOT LINE.**

LIGHTING ANALYSIS NOTES:

1. **PROPOSED LIGHTING COMPLIES WITH THIS REQUIREMENT AND IS LESS THAN 2.0 FOOT-CANDLES ALONG ALL PROPERTY LINES.**

PROPERTY LINE PHOTOMETRIC SITE PLAN

SCALE: 1"=80'-0"

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Description:	No:	Date:

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Date: 11/21/25
Lic. Exp.: 11/30/25

SHEET NAME:

PROPERTY LINE PHOTOMETRIC SITE PLAN

Proj. No: 25165	Reviewed By: D.B.K.
Drawn By: S.M.B.	Approved By: D.B.K.

SHEET No:

E102

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FIXTURE SCHEDULE

25165

TYPE	INPUT WATTS	VOLTS	LUMENS	COLOR TEMP	CRI 70+	CRI 80+	CRI 90+	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	BUG RATING	SHIELDING	FINISH	MOUNTING	CONTROLS INTEGRAL	CONTROLS REMOTE	SEE NOTES
E	124	277	16172	4000K	●			EXTERIOR WALL BRACKET	LITHONIA	DSX1-LED-P4-40K-70CRI-T4M-XVOLT-WBA-NLTAIR2-PIRHN		ACRYLIC	SBA	WALL 25' A.F.G.	OS	PHOTO ON TC OFF	#1
E1	124	277	12044	4000K	●			POLE & LUMINAIRE	LITHONIA	DSX1-LED-P4-40K-70CRI-BLC4-XVOLT-SPA-NLTAIR2-PIRHN		ACRYLIC	SBA	SEE DETAIL 1/E103	OS	PHOTO ON TC OFF	#1
E2	124	277	12044	4000K	●			POLE & LUMINAIRE	LITHONIA	DSX1-LED-P4-40K-70CRI-BLC4-XVOLT-SPA-NLTAIR2-PIRHN		ACRYLIC	SBA	SEE DETAIL 2/E103	OS	PHOTO ON TC OFF	#1

FIXTURE SCHEDULE NOTES:

1. EACH LIGHT FIXTURE TO HAVE MOTION SENSOR CONTROL. LIGHT FIXTURES TO DIM TO 33% AFTER 15 MINUTES OF NO MOTION DETECTED. ALL LIGHTS ON THAT CIRCUIT TO COME TO FULL BRIGHTNESS WHEN ONE MOTION SENSOR IS ACTIVATED.

LIBERTYVILLE CODE:

1. MAXIMUM MOUNTING HEIGHT 25'-0" ABOVE FINISHED GRADE.

SYMBOLS / ABBREVIATIONS

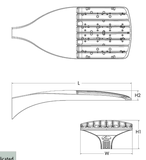
	WALL BRACKET/WALL SCONCE FIXTURE - SEE FIXTURE SCHEDULE
	SURFACE/PENDANT FIXTURE - SEE FIXTURE SCHEDULE
	RECESSED DOWNLIGHT FIXTURE - SEE FIXTURE SCHEDULE
D	POLE & LUMINAIRE(S) FIXTURE - SEE FIXTURE SCHEDULE
——	SWITCHED CIRCUIT
— —	BRANCH CIRCUIT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFI	ARC FAULT INTERRUPTER
AMP	AMPERES/AMPERAGE
AV	AUDIO VISUAL
BB	BATTERY BACKUP
BFC	BELOW FINISHED CEILING
BOL	BUILT-IN OVERLOAD
BRKR	BREAKER
BWE	BAKED WHITE ENAMEL
CBA	COLOR BY ARCHITECT
CP	CONTROL PANEL
CRCT	CIRCUIT
CTL	CONTROL
DCP	DOCK EQUIPMENT CONTROL PANEL
DISC	DISCONNECT
EC	ELECTRICAL CONTRACTOR
EM	EMERGENCY
ER	EXISTING RELOCATED
ETC	ELECTRONIC TIME CLOCK CONTROL
EX	EXISTING TO REMAIN
EXD	EXISTING TO BE DEMO'D
EXR	EXISTING TO BE RELOCATED
EWC	ELECTRIC WATER COOLER
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
FLSW	FLOAT SWITCH
FPC	FIRE PROTECTION CONTRACTOR
FURN	FURNISHED
GC	GENERAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
HOA	HAND-OFF-AUTOMATIC SWITCH
HP	HORSEPOWER
HVAC	HEATING AND VENTILATING CONTRACTOR
IG	ISOLATED GROUND
INT	INTEGRAL
IR	IN ROOM
IU	IN UNIT
JB	JUNCTION BOX
KW	KILOWATTS
LCP	LIGHTING CONTROL PANEL
LOC	LOCATION
LT	LOW TEMPERATURE
LTSW	LIGHT SWITCH
LVT	LOW VOLTAGE THERMOSTAT
MAG	MAGNETIC STARTER
MAN	MANUAL STARTER
MCA	MINIMUM CIRCUIT AMPS
MSPL	MANUAL STARTER WITH PILOT LIGHT
NL	NIGHT LIGHT
NU	NEAR UNIT
OHP	OVERHEAT PROTECTION
OS	OCCUPANCY SENSOR
OU	ON UNIT
PB	PUSH BUTTON
PC	PLUMBING CONTRACTOR
PESW	PNEUMATIC ELECTRIC SWITCH
PHOTO	PHOTOCELL
PW	PREWIRED
RC	REFRIGERATION CONTRACTOR
RCC	REFRIGERATION CONTROL CONTRACTOR
RECEPT	RECEPTACLE
SBA	SELECTED BY ARCHITECT
SC	SEPARATE CIRCUIT
SPSW	SPEED SWITCH
SS	SOFT START
ST	SHUNT TRIP
SW	SWITCH
T	LINE VOLTAGE THERMOSTAT
TBD	TO BE DETERMINED
TC	TIME CLOCK
TCC	TEMPERATURE CONTROL CONTRACTOR
TCP	TEMPERATURE CONTROL PANEL
UM	UNIT MANUFACTURER
UNO	UNLESS NOTED OTHERWISE
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS
WP	WEATHER PROOF ("WHILE-IN-USE")
XFMR	TRANSFORMER

D-Series Size 1
LED Area Luminaire

d*series

Specifications

EPA:	0.69 ft² (0.06 m²)
Length:	32.71" (83.1 cm)
Width:	14.26" (36.2 cm)
Height H1:	7.88" (20.0 cm)
Height H2:	2.73" (6.9 cm)
Weight:	34 lbs (15.4 kg)



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E,E1,E2

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Introduction

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

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Ordering Information

EXAMPLE: DSX1 LED P7 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX1 LED

Series	LEDs	Color temperature[1]	Color Rendering Index[1]	Distribution	Voltage	Mounting
DSX1 LED	**Forward optics** P1 P6 P2 P7 P3 P8 P4 P9 P5 **Rotated optics** P10[1] P12[1] P11[1] P13[1]	(this section 70CRI only) 30K 3000K 40K 4000K 50K 5000K (this section 80CRI only, extended lead times apply) 27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	70CRI 70CRI 70CRI 80CRI 80CRI 80CRI 80CRI 80CRI	AFR Automotive front row T1S Type I short T2M Type II medium T3M Type III medium T3LG Type III low glare[1] T4M Type IV medium T4LG Type IV low glare[1] TFTM Forward throw medium T5M Type V medium T5LG Type V low glare T5W Type V wide BLC3 Type III backlight control[1] BLC4 Type IV backlight control[1] LCCO Left corner cutoff[1] RCCO Right corner cutoff[1]	MVOLT (120V-277V)[2,3] HVOLT (347V-480V)[2,3] XVOLT (277V - 480V)[2,3] 120[4,5,6] 208[4,5,6] 240[4,5,6] 277[4,5,6] 347[4,5,6] 480[4,5,6]	**Shipped included** SPA Square pole mounting (#3 drilling) RPA Round pole mounting (#3 drilling) SPAS Square pole mounting #5 drilling[7] RPAS Round pole mounting #5 drilling[7] SPABN Square narrow pole mounting #3 drilling WBA Wall bracket[8] MA Mast arm adapter (mounts on 2 3/8" OD horizontal tenon)

Control options		Other options		Finish (required)	
Shipped installed		**Shipped installed**		DDBXD	Dark Bronze
NLTAIR2 PIRHN	nLight AIR gen 2 enabled with bi-level motion / ambient sensor, 8–40' mounting height, ambient sensor enabled at 2fc.[9,10,11]	SPD20KV	20KV surge protection	DBLXD	Black
PIR	High/low, motion/ambient sensor, 8–40' mounting height, ambient sensor enabled at 2fc.[10,11]	FAO	Field adjustable output[12,13]	DNAXD	Natural Aluminum
PER	NEMA twist-lock receptacle only (controls ordered separately)[14]	BL30	Bi-level switched dimming, 30%[9,13]	DWHXD	White
PERS	Five-pin receptacle only (controls ordered separately)[14,15]	BL50	Bi-level switched dimming, 50%[9,13]	DSSXD	Sandstone
		DMG	0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately)[13]	DGCXD	Charcoal gray
		DS	Dual switching[16,18,19]	DTGXD	Tennis green
				DBRXD	Bright red
				DSBXD	Steel blue
				DDBTXD	Textured dark bronze
				DBLBXD	Textured black
				DNATXD	Textured natural aluminum
				DWHGXD	Textured white

Other finishes	
GALV	Galvanized finish

Architectural colors and special finishes[17]

[PAINT] GALV	Paint over galvanizing
VP30	3 year warranty extension
VP35	5 year warranty extension
RAL####	Use designated Lithonia Lighting nomenclature in brochure
Custom color	Nomenclature assigned through Customer Care "Custom Color Process"

LITHONIA LIGHTING
COMMERCIAL OUTDOOR

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DSX1-LED
Rev. 10/16/24
Page 1 of 10

SSS Square Straight Steel Poles

ORDERING INFORMATION Lead times will vary depending on options selected. Consult with your sales representative.

Example: SSS 20 5C DM19 DDBXD

SSS Series	Nominal fixture mounting height	Nominal shaft base size/wall thickness[1]	Mounting[2]	Options		Finish
SSS	10'-39' (for 1/2 ft increments, add -6 to the pole height. **Ex:** 20-6 equals 20ft 6in.) (See technical information table for complete ordering information.)	4C 4" 11g (0.120") 4G 4" 7g (0.179") 5C 5" 11g (0.120") 5G 5" 7g (0.179") 6G 6" 7g (0.179") (See technical information table for complete ordering information.)	**Tenon mounting** PT Open top (includes top cap) T20 2-3/8" O.D. (2" NPS) T25 2-7/8" O.D. (2-1/2" NPS) T30 3-1/2" O.D. (3" NPS) T35 4" O.D. (3-1/2" NPS) KAC/KAD/KSC/KSF/KVR/KVF Drill mounting[3] DM19 1 at 90° DM28 2 at 180° DM28 PL 2 at 180° with one side plugged DM29 2 at 90° DM39 3 at 90° DM49 4 at 90° CSX/DSX/RSX/AERO™/OMERO™/KAX Drill mounting[3] DM19AS 1 at 90° DM28AS 2 at 180° DM29AS 2 at 90° DM39AS 3 at 90° DM49AS 4 at 90° RAD drill mounting[3] DM19IRAD 1 at 90° DM28IRAD 2 at 180° DM29IRAD 2 at 90° DM39IRAD 3 at 90° DM49IRAD 4 at 90° ESX Drill mounting[3] DM19ESX 1 at 90° DM28ESX 2 at 180° DM29ESX 2 at 90° DM39ESX 3 at 90° DM49ESX 4 at 90°	**Shipped installed** VD Vibration damper[4] HAxy Horizontal arm bracket (1 fixture)[5,6] FDLxy Festoon outlet less electrical[6,7] CPLS1/xy 1/2" coupling[7] CPL14/xy 3/4" coupling[7] CPL1/xy 1" coupling[7] NPL12/xy 1/2" threaded nipple[7] NPL34/xy 3/4" threaded nipple[7] NPL1/xy 1" threaded nipple[7] EHHxy Extra handhole[5,8] STLFHC Steel handhole cover (standard is plastic, finish is smooth)[9] FBCSTLDPC 2 Piece steel base cover (standard is plastic)[9] IC Interior coating[10] L/AB Less anchor bolts (Include when anchor bolts are not needed) TP Tamper resistant handhole cover fasteners NEC NEC 410.30 compliant gasketed handhole (Not UL Labeled) UL UL listed with label (includes NEC compliant cover) BAA Buy America(n) Act Compliant[11] VM/original orderH Match pole to prior order or project[12]	**Super durable paint colors** DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DSSXD Sandstone DGCXD Charcoal gray DTGXD Tennis green DBRXD Bright red DSBXD Steel blue DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white **Other finishes** GALV Galvanized finish **Architectural colors and special finishes[13]** [PAINT] GALV Paint over galvanizing VP30 3 year warranty extension VP35 5 year warranty extension RAL#### Use designated Lithonia Lighting nomenclature in brochure Custom color Nomenclature assigned through Customer Care "Custom Color Process"

NOTES:
1. Wall thickness will be signified with a "C" (11 Gauge) or a "G" (7-Gauge) in nomenclature. "C" - 0.120" | "G" - 0.179".
2. PT open top poles include top cap. When ordering tenon mounting and drill mounting for the same pole, specify as drilling option/tenon option. The combination includes a required extra handhole. *Example: DM28/T20.*
3. Refer to the fixture spec sheet for the correct drilling template pattern and orientation compatibility.
4. On 4" and 5" poles, YD cannot be installed if provisions (EHH, FDL, NPL, CPL) are located higher than 2/3 of the pole's total height. *Example: Pole height is 25ft, A provision cannot be placed above 16ft.*
5. Specify location and orientation when ordering option. **For "x":** Specify the height above the base of pole in feet or feet and inches; separate feet and inches with a "-". *Example: 5ft = 5 and 20ft 3in = 20-3*
   For "y": Specify orientation from handhole (A,B,C,D). Refer to the Handhole Orientation diagram below. *Example: 1/2" coupling at 5'-3", orientation C = CPL1/2-5C*
6. Horizontal arm is 18" x 2-3/8" O.D. tenon standard, with radius curve providing 12" rise and 2-3/8" O.D. If ordering two horizontal arm at the same height, specify with HAxyy. *Example: HA28RD.*
7. FDL does not come with GFCI outlet or handhole cover. These must be supplied by contractor or electrician.
8. Combination of tenon-top and drill mount includes extra handhole. EHH includes cover.
9. Plastic hand hole cover and base covers come standard with all poles. Items ship separately. Additional parts can be ordered as replacements.
10. Provides enhanced corrosion resistance. N/A with GALV.
11. Use when mill certifications are required.
12. Must add original order number. Not for replacement parts or post sales issues, contact tech support or post sales teams. VM is used to ensure poles match in appearance exactly from order to order, on a single project site. A common use case would be a multi-phase project with multiple orders. *Example: VM/050-SOSM*
13. Must be quoted through AQD. Finishes do not require RFA. RAL colors available are shown in "Architectural Colors brochure". Lead times may be extended up to 2 weeks due to paint procurement.

Accessories: *Order as separate catalog number.*

PL DT20	Plugs for ESX drillings
PL DT8	Plugs for DMxxAS drillings
FVD xxFT	Field installed vibration damper (snake style)

LITHONIA LIGHTING
OUTDOOR: One Lithonia Way Conyers, GA 30012 Phone: 800-705-SERV (7378) www.lithonia.com

POLE-SSS

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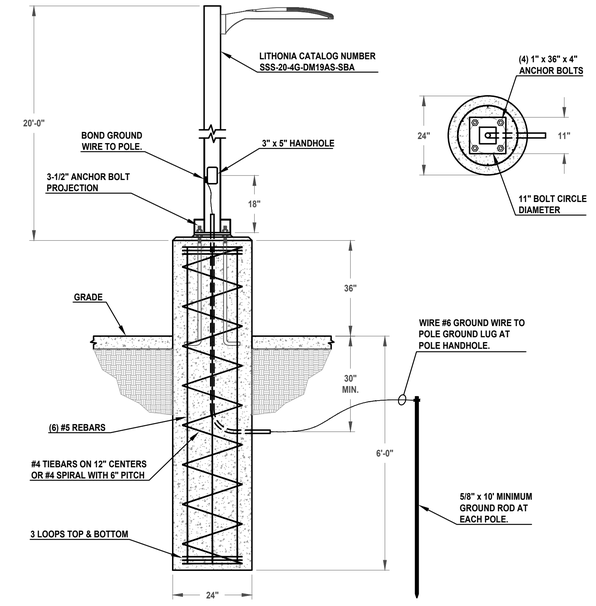
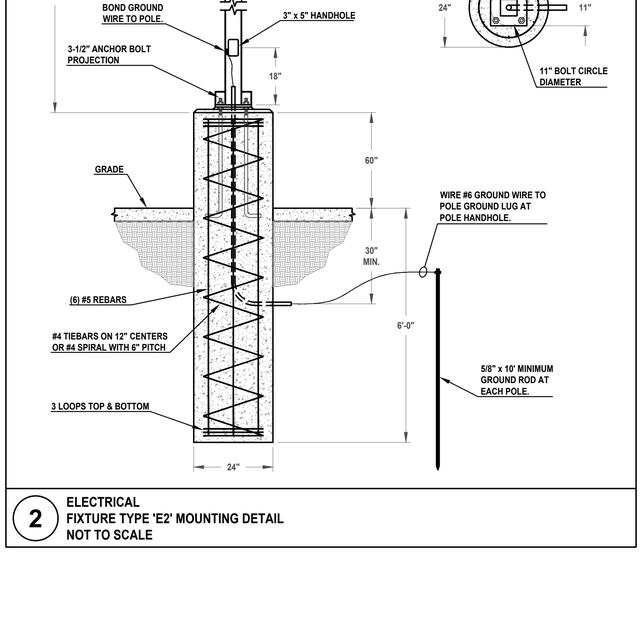
Rev. 03/27/24



1 ELECTRICAL
FIXTURE TYPE 'E1' MOUNTING DETAIL
NOT TO SCALE



2 ELECTRICAL
FIXTURE TYPE 'E2' MOUNTING DETAIL
NOT TO SCALE

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Illinois Design Firm Registration
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Electrical Design Consultants
262-784-3323
2845 S. Moorland Rd., New Berlin, WI 53151
Corporation Registration #184.005374

CLIENT:

Principle CONSTRUCTION
9450 West Bryn Mawr Ave. Suite #120
Rosemont, IL 60018
PHONE (847)615-1515
pccdb.com

PROJECT:

BATH CONCEPTS INC
100 ROSENBACH PARKWAY
LIBERTVILLE, ILLINOIS

Description: No: Date:

PROFESSIONAL SEAL:

LICENSED PROFESSIONAL ENGINEER
DAVID B. KORNACKI
062.052986
STATE OF ILLINOIS

David B. Kornacki

Date: 11/21/25
Lic. Exp.: 11/30/25

SHEET NAME:

SCHEDULES & DETAILS

Proj. No: 25165 Reviewed By: D.B.K.
Drawn By: S.M.B. Approved By: D.B.K.

SHEET No:

E103

ALL DIMENSIONS AND CONDITIONS MUST BE CHECKED AND VERIFIED ON SITE BY THE CONTRACTOR AND SUB-CONTRACTORS PRIOR TO PERFORMING THE WORK. THE PROJECT MANAGER SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
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Proposed Improvements for

BATH CONCEPTS

NORTHEAST CORNER OF PETERSON ROAD AND MIDLOTHIAN ROAD
VILLAGE OF LIBERTYVILLE, ILLNOIS

STANDARD SYMBOLS

08-01-16

EXISTING		PROPOSED
	STORM SEWER	
	SANITARY SEWER	
	COMBINED SEWER	
FM	FORCEMAIN	FM
	DRAINTILE	
W	WATER MAIN	W
E	ELECTRIC	E
G	GAS	G
T	TELEPHONE	T
OH	OVERHEAD WIRES	OH
	SANITARY MANHOLE	
	STORM MANHOLE	
	CATCH BASIN	
	STORM INLET	
	CLEANOUT	
	HAY BALES	
	RIP RAP	
	VALVE IN VAULT	
	VALVE IN BOX	
	FIRE HYDRANT	
	BUFFALO BOX	
	FLARED END SECTION	
	STREET LIGHT	
	SUMMIT / LOW POINT	S/L
795.20 / 790.25	RIM ELEVATION / INVERT ELEVATION	795.25 / 790.20
	DITCH OR SWALE	
	DIRECTION OF FLOW	
	OVERFLOW RELIEF SWALE	
764	1 FOOT CONTOURS	764
	CURB AND GUTTER	
	DEPRESSED CURB AND GUTTER	
	REVERSE CURB AND GUTTER	
	SIDEWALK	
	DETECTABLE WARNINGS	
	PROPERTY LINE	
	EASEMENT LINE	
	SETBACK LINE	
	MAIL BOX	
	SIGN	
	TRAFFIC SIGNAL	
	POWER POLE	
	GUY WIRE	
	GAS VALVE	
H	HANDHOLE	
E / T	ELECTRICAL EQUIPMENT	
	TELEPHONE EQUIPMENT	
	CHAIN-LINK FENCE	
792.80	SPOT ELEVATION	792.8
	BRUSH/TREE LINE	
16"	DECIDUOUS TREE WITH TRUNK DIA. IN INCHES (TBR)	16"
25'	CONIFEROUS TREE WITH HEIGHT IN FEET (TBR)	25'
S	SILT FENCE	S
	RETAINING WALL	
	WETLAND	

ABBREVIATIONS

08-01-16

ADJ	ADJUST	F/L	FLOW LINE	R.O.W.	RIGHT-OF-WAY
AGG.	AGGREGATE	FM	FORCE MAIN	RCP	REINFORCED CONCRETE PIPE
ARCH	ARCHITECT	G	GROUND	REM	REMOVAL
B.A.M.	BITUMINOUS AGGREGATE MIXTURE	G/F	GRADE AT FOUNDATION	REV	REVERSE
B-B	BACK TO BACK	GW	GUY WIRE	RR	RAILROAD
B/C	BACK OF CURB	HDWL	HEADWALL	RT	RIGHT
B/P	BOTTOM OF PIPE	HH	HANDHOLE	SAN	SANITARY
B/W	BACK OF WALK	HWL	HIGH WATER LEVEL	SF	SQUARE FOOT
B-BOX	BUFFALO BOX	HYD	HYDRANT	SHLD.	SHOULDER
BIT.	BITUMINOUS	INL	INLET	SL	STREET LIGHT
BM	BENCHMARK	INV	INVERT	SMH	SANITARY MANHOLE
B.O.	BY OTHERS	IP	IRON PIPE	ST	STORM
C.E.	COMMERCIAL ENTRANCE	LT	LEFT	STA.	STATION
CB	CATCH BASIN	HYD.	MAXIMUM	STD	STANDARD
℄	CENTERLINE	MB	MAILBOX	SW	SIDEWALK
CMP	CORRUGATED METAL PIPE	M/E	MEET EXISTING	SY	SQUARE YARDS
CNTRL	CONTROL	MH	MANHOLE	TBR	TO BE REMOVED
CO	CLEANOUT	MIN.	MINIMUM	T	TELEPHONE
CONC.	CONCRETE	NWL	NORMAL WATER LEVEL	T-A	TYPE A
CY	CUBIC YARD	P.E.	PRIVATE ENTRANCE	T/C	TOP OF CURB
D	DITCH	PC	POINT OF CURVATURE	T/F	TOP OF FOUNDATION
DIA.	DIAMETER	PCC	POINT OF COMPOUND CURVE	T/P	TOP OF PIPE
DIP	DUCTILE IRON PIPE	PGL	PROFILE GRADE LINE	T/W	TOP OF WALK
DWM	DUCTILE IRON WATER MAIN	PI	POINT OF INTERSECTION	T/WALL	TOP OF WALL
DS	DOWNSPOUT	P℄	PROPERTY LINE	TEMP	TEMPORARY
DT	DRAIN TILE	PP	POWER POLE	TRANS	TRANSFORMER
E	ELECTRIC	PROP.	PROPOSED	V.B.	VALVE BOX
E-E	EDGE TO EDGE	PT	POINT OF TANGENCY	VCP	VITRIFIED CLAY PIPE
ELEV.	ELEVATION	PVC	POLYVINYL CHLORIDE PIPE	V.V.	VALVE VAULT
E/P	EDGE OF PAVEMENT	PVC	POINT OF VERTICAL CURVATURE	WL	WATER LEVEL
EX.	EXISTING	PVI	POINT OF VERTICAL INTERSECTION	WM	WATER MAIN
F.O.	FIELD ENTRANCE	PVT	POINT OF VERTICAL TANGENCY		
F-F	FACE TO FACE	P	PAVEMENT		
F.F.	FINISHED FLOOR	P.U.D.E.	PUBLIC UTILITY & DRAINAGE EASEMENT		
FES	FLARED END SECTION	R	RADIUS		

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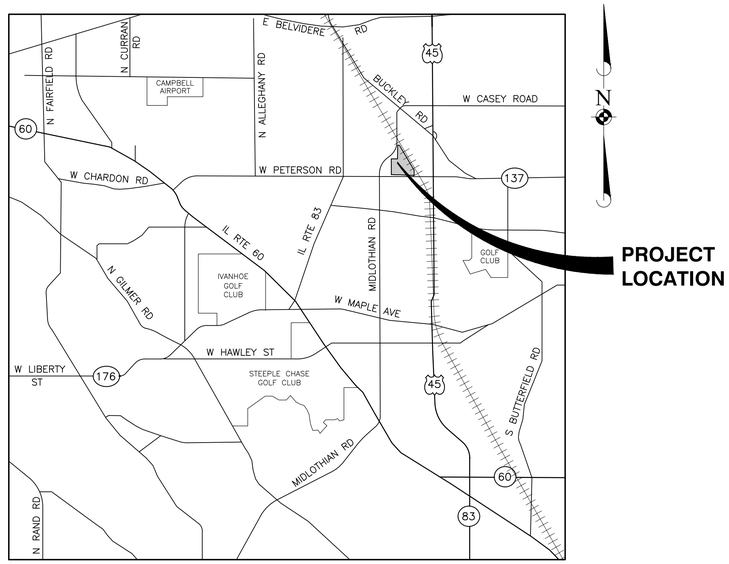

PROJECT LOCATION

LOCATION MAP

N.T.S.

OWNER:
ASHTON VILLA LAND PARTNERS, LLC, A DELAWARE LIMITED LIABILITY COMPANY
251 LITTLE FALLS DRIVE
WILMINGTON, DE

NOTE:

THE BOUNDARY LINES AND TOPOGRAPHY FOR THIS PROJECT ARE BASED ON A FIELD SURVEY COMPLETED BY MANHARD CONSULTING, LTD. ON JULY 12, 2024. THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY MANHARD CONSULTING AND THE CLIENT IN WRITING OF ANY DIFFERING CONDITIONS.

INDEX OF SHEETS

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2	EXISTING CONDITIONS AND DEMOLITION PLAN – OVERALL
3	EXISTING CONDITIONS AND DEMOLITION PLAN–SOUTH
4	EXISTING CONDITIONS AND DEMOLITION PLAN–NORTH
5	SOIL EROSION AND SEDIMENT CONTROL PLAN – OVERALL
6	SOIL EROSION AND SEDIMENT CONTROL PLAN–SOUTH
7	SOIL EROSION AND SEDIMENT CONTROL PLAN–NORTH
8	SOIL EROSION AND SEDIMENT CONTROL PLAN DETAILS
9	SITE DIMENSIONAL AND PAVING PLAN – OVERALL
10	SITE DIMENSIONAL AND PAVING PLAN – SOUTH
11	SITE DIMENSIONAL AND PAVING PLAN – NORTH
12	GRADING PLAN – OVERALL
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15	UTILITY PLAN – OVERALL
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19	VILLAGE OF LIBERTYVILLE CONSTRUCTION DETAILS
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22	VILLAGE OF LIBERTYVILLE CONSTRUCTION DETAILS
23	CONSTRUCTION DETAILS
24	CONSTRUCTION DETAILS
25	VILLAGE OF LIBERTYVILLE GENERAL NOTES
26	CONSTRUCTION SPECIFICATIONS

BENCHMARKS:

REFERENCE BENCHMARK:
ELEVATIONS AND SITE BENCHMARKS SHOWN HEREON WERE ESTABLISHED UTILIZING A TRIMBLE RAPID STATIC GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) AND THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION'S (NOAA'S) ONLINE POSITIONING USER SERVICE (OPUS). THE OBSERVED ELEVATIONS, AS REFINED BY OPUS, IS THE BASIS FOR ALL ELEVATIONS SHOWN HEREON AND THIS INFORMATION HAS NOT BEEN DIRECTLY COMPARED TO ANY OTHER KNOWN OR FIXED BENCHMARK. ALL ELEVATIONS ARE BASED ON NAVD 88 DATUM (GEOID18).

SITE BENCHMARK 1:
WEST ARROW BOLT ON A FIRE HYDRANT APPROXIMATELY 130 FEET SOUTH OF THE CENTERLINE OF PETERSON ROAD AND APPROXIMATELY 63 FEET WEST OF THE CENTERLINE OF HARRIS ROAD.

ELEVATION=812.31 DATUM=NAVD88–GEOID 18

SITE BENCHMARK 2:
A CUT SQUARE IN THE NORTHWEST CORNER OF THE CONCRETE PAD FOR A TRAFFIC CONTROL PANEL, APPROXIMATELY 50 FEET WEST OF THE CENTERLINE OF MIDLOTHIAN ROAD AND APPROXIMATELY 100 FEET NORTH OF THE CENTERLINE OF PETERSON ROAD.

ELEVATION=821.06 DATUM=NAVD88–GEOID 18

SITE BENCHMARK 3:
SOUTHWEST TAG BOLT ON A FIRE HYDRANT APPROXIMATELY 55 FEET NORTHWEST OF THE CENTERLINE OF MIDLOTHIAN ROAD AND APPROXIMATELY 165 FEET SOUTHWEST OF THE CENTERLINE OF THE NORTHERLY ENTRANCE DRIVE TO LAKE COUNTY FAIRGROUNDS.

ELEVATION=814.74 DATUM=NAVD88–GEOID 18

SITE BENCHMARK 4:
SET RAILROAD SPIKE IN THE NORTH FACE OF A UTILITY POLE APPROXIMATELY 47 FEET NORTH OF THE CENTERLINE OF PETERSON ROAD AND APPROXIMATELY 60 FEET WEST OF THE CENTERLINE OF FRANKLIN BOULEVARD EXTENDED NORTH.

ELEVATION=790.84 DATUM=NAVD88–GEOID 18

TOPOGRAPHIC FIELD WORK COMPLETED ON 07/12/2024

UTILITY CONTACTS

ELECTRIC COMED 630-576-7094	LIBERTYVILLE SEWER AND WATER LIBERTYVILLE PUBLIC WORKS 600 NORTH AVE LIBERTYVILLE, IL 60048 847-362-3434
TELEPHONE VERIZON TWyk@asginc.us CONTACT: TRAVIS VAN WYK	GAS NORTH SHORE GAS CO jay.hammer@ NORTHSHOREGASDELIVERY.COM 847-263-4678 CONTACT: JAY HAMMER
WATER CENTRAL LAKE CO. JOINT WATER JOSH MILLER 847-418-6033 jmiller@CLCJAWA.COM	

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SEAL

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DAW/JSE	12-1-25	CURSORY REVIEW REVISIONS	

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BATH CONCEPTS
VILLAGE OF LIBERTYVILLE, ILLINOIS
TITLE SHEET

PROJ. MGR.:	JSE
PROJ. ASSOC.:	MSL
DRAWN BY:	MH
DATE:	09-19-25
SCALE:	N.T.S.

SHEET 1 OF 25

BCALYIL01

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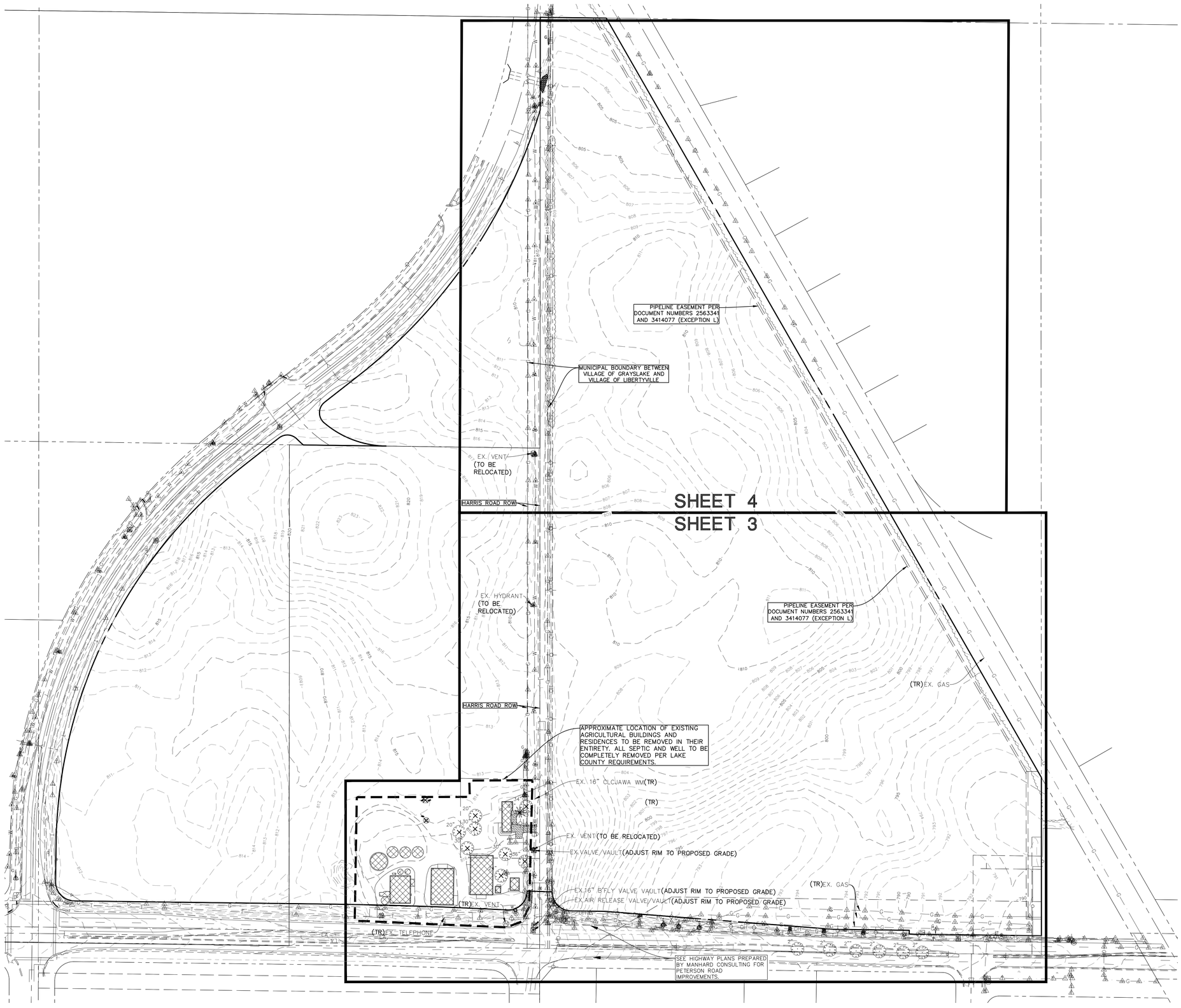
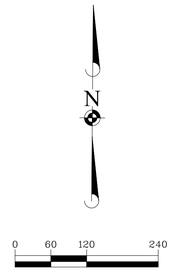
December 5, 2025 - 11:26 Data Name: P:\Bridgford\Work\Civil\Preliminary\Plan Set\TITLE.dwg Updated By: dawstedwest





DEMOLITION LEGEND

- CONCRETE PAVEMENT AND BASE TO BE REMOVED
- BUILDING TO BE REMOVED
- UTILITY STRUCTURE TO BE REMOVED
- UTILITY LINE REMOVAL, FILL OR ABANDONMENT (REFER TO SPECIFICATIONS)
- TREE TO BE REMOVED
- (TBR) TO BE REMOVED
- (TR) TO REMAIN

08-01-19

EXISTING CONDITIONS AND DEMOLITION NOTES:

1. EXISTING CONDITIONS AND DEMOLITION PLAN REPRESENT SITE CONDITIONS AS OF JULY 12, 2024. CONTRACTOR SHALL INSPECT SITE PRIOR TO BIDDING WORK TO VERIFY ACTUAL FIELD CONDITIONS AS PORTIONS OF THE DEMOLITION WORK MAY HAVE SINCE BEEN COMPLETED. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLETE ALL DEMOLITION WORK AS PER PLANS TO PREPARE THE SITE FOR CONSTRUCTION OF PROPOSED IMPROVEMENTS.
2. THE UNDERGROUND UTILITY INFORMATION AS SHOWN HEREON IS BASED, IN PART, UPON INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED TO.
3. THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION, REMOVAL AND DISPOSAL (IN A LOCATION APPROVED BY ALL JURISDICTIONAL GOVERNING ENTITIES) OF ALL STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, ROAD, PARKING LOTS, DRIVES, DRAINAGE STRUCTURES, UTILITIES, ETC., SUCH THAT THE IMPROVEMENTS SHOWN ON THESE PLANS CAN BE CONSTRUCTED. ALL DEMOLITION WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE SPECIFICATIONS.
4. REFER TO SPECIFICATIONS SHEET FOR DEMOLITION NOTES.

DATE	REVISIONS	DRAWN BY
12-1-25	CURSORY REVIEW REVISIONS	JSE/GAW

Manhard CONSULTING
One Overlook Point, Suite 250, Lincolnshire, IL 60069 p:847.634.5500 f:847.634.0066 manhard.com
Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
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BATH CONCEPTS

VILLAGE OF LIBERTYVILLE, ILLINOIS

EXISTING CONDITIONS AND DEMOLITION PLAN - OVERALL

PROJ. MGR.:	JSE
PROJ. ASSOC.:	MSL
DRAWN BY:	MK
DATE:	09-19-25
SCALE:	1"=120'

SHEET 2 OF 25

BCALYIL01

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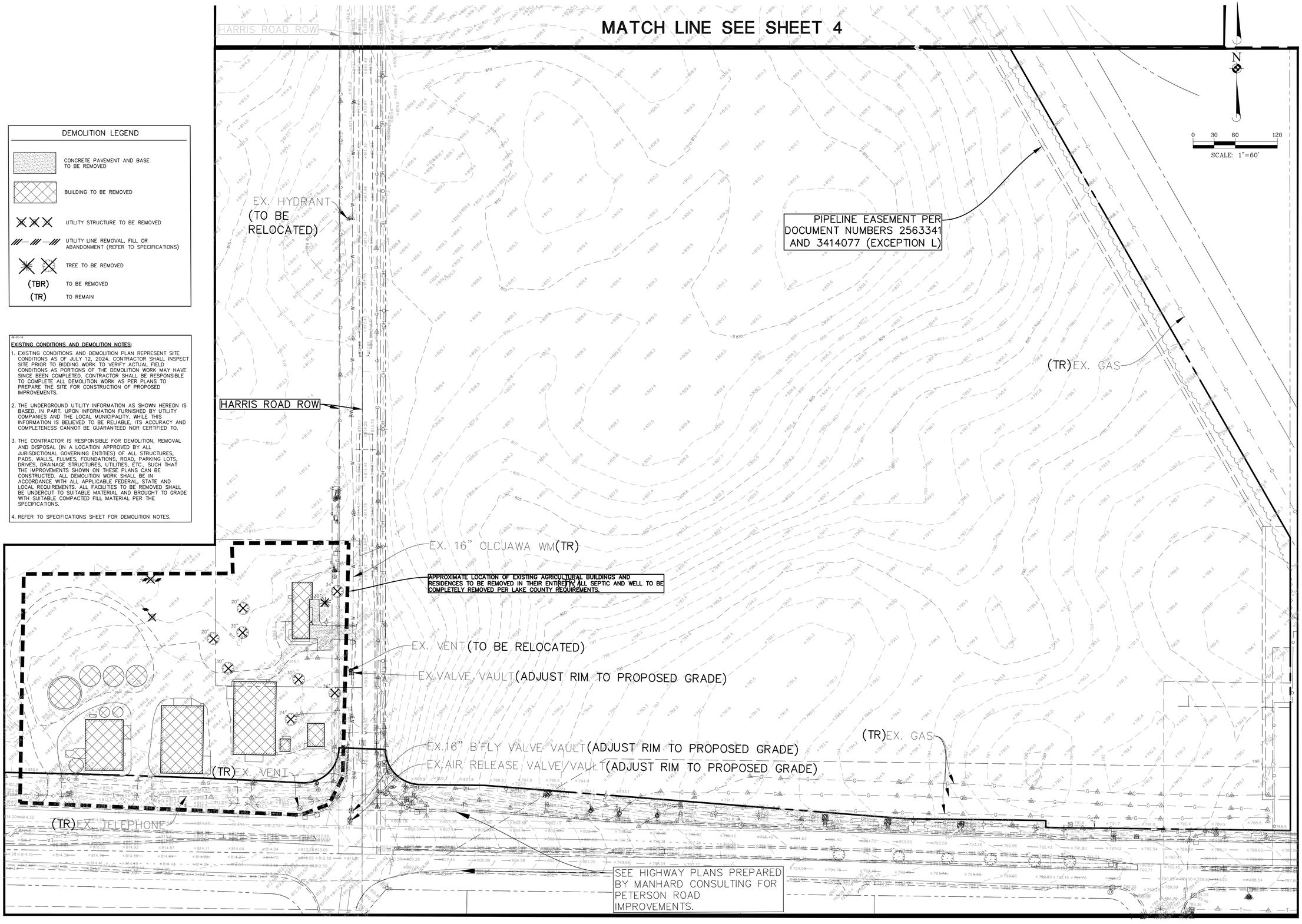
January 5, 2026 - 1:49:23 Data Name: P:\Bcal\01\Civil\Final\Preliminary\Plan Set\EX-DEMO.dwg Updated By: gaw(delewski)

DEMOLITION LEGEND

- CONCRETE PAVEMENT AND BASE TO BE REMOVED
- BUILDING TO BE REMOVED
- UTILITY STRUCTURE TO BE REMOVED
- UTILITY LINE REMOVAL, FILL OR ABANDONMENT (REFER TO SPECIFICATIONS)
- TREE TO BE REMOVED
- (TBR) TO BE REMOVED
- (TR) TO REMAIN

EXISTING CONDITIONS AND DEMOLITION NOTES:

1. EXISTING CONDITIONS AND DEMOLITION PLAN REPRESENT SITE CONDITIONS AS OF JULY 12, 2024. CONTRACTOR SHALL INSPECT SITE PRIOR TO BIDDING WORK TO VERIFY ACTUAL FIELD CONDITIONS AS PORTIONS OF THE DEMOLITION WORK MAY HAVE SINCE BEEN COMPLETED. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLETE ALL DEMOLITION WORK AS PER PLANS TO PREPARE THE SITE FOR CONSTRUCTION OF PROPOSED IMPROVEMENTS.
2. THE UNDERGROUND UTILITY INFORMATION AS SHOWN HEREON IS BASED, IN PART, UPON INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED TO.
3. THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION, REMOVAL AND DISPOSAL (IN A LOCATION APPROVED BY ALL JURISDICTIONAL GOVERNING ENTITIES) OF ALL STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, ROAD, PARKING LOTS, DRIVES, DRAINAGE STRUCTURES, UTILITIES, ETC., SUCH THAT THE IMPROVEMENTS SHOWN ON THESE PLANS CAN BE CONSTRUCTED. ALL DEMOLITION WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE SPECIFICATIONS.
4. REFER TO SPECIFICATIONS SHEET FOR DEMOLITION NOTES.



DATE	REVISIONS	DRAWN BY
12-1-25	CURSORY REVIEW REVISIONS	JSE/GAW

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One Overlook Point, Suite 250, Lincolnshire, IL 60069 | p:847.634.5500 | manhard.com
Civil Engineers • Surveyors • Water Resource Engineers • Water/Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

BATH CONCEPTS

VILLAGE OF LIBERTYVILLE, ILLINOIS

EXISTING CONDITIONS AND DEMOLITION PLAN-SOUTH

PROJ MGR.:	JSE
PROJ ASSOC.:	MSL
DRAWN BY:	GAW
DATE:	09-19-25
SCALE:	1"=60'

SHEET 3 OF 25

BCALYIL01

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January 9, 2026 - 14:23 Dwg Name: P:\Projects\Varga\Civil\Preliminary\Plan Set\EX-DEMO.dwg Updated By: gaw/jsewell

PIPELINE EASEMENT PER DOCUMENT NUMBERS 2563341 AND 3414077 (EXCEPTION L)

MUNICIPAL BOUNDARY BETWEEN VILLAGE OF GRAYSLAKE AND VILLAGE OF LIBERTYVILLE

EX. VENT (TO BE RELOCATED)

HARRIS ROAD ROW

MATCH LINE SEE SHEET 3

N

0 30 60 120

SCALE: 1"=60'

DEMOLITION LEGEND

- CONCRETE PAVEMENT AND BASE TO BE REMOVED
- BUILDING TO BE REMOVED
- UTILITY STRUCTURE TO BE REMOVED
- UTILITY LINE REMOVAL, FILL OR ABANDONMENT (REFER TO SPECIFICATIONS)
- TREE TO BE REMOVED
- (TBR) TO BE REMOVED
- (TR) TO REMAIN

06-01-16

EXISTING CONDITIONS AND DEMOLITION NOTES:

1. EXISTING CONDITIONS AND DEMOLITION PLAN REPRESENT SITE CONDITIONS AS OF JULY 12, 2024. CONTRACTOR SHALL INSPECT SITE PRIOR TO BIDDING WORK TO VERIFY ACTUAL FIELD CONDITIONS AS PORTIONS OF THE DEMOLITION WORK MAY HAVE SINCE BEEN COMPLETED. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLETE ALL DEMOLITION WORK AS PER PLANS TO PREPARE THE SITE FOR CONSTRUCTION OF PROPOSED IMPROVEMENTS.
2. THE UNDERGROUND UTILITY INFORMATION AS SHOWN HEREON IS BASED, IN PART, UPON INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED TO.
3. THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION, REMOVAL AND DISPOSAL (IN A LOCATION APPROVED BY ALL JURISDICTIONAL GOVERNING ENTITIES) OF ALL STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, ROAD, PARKING LOTS, DRIVES, DRAINAGE STRUCTURES, UTILITIES, ETC., SUCH THAT THE IMPROVEMENTS SHOWN ON THESE PLANS CAN BE CONSTRUCTED. ALL DEMOLITION WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE SPECIFICATIONS.
4. REFER TO SPECIFICATIONS SHEET FOR DEMOLITION NOTES.

DATE	REVISIONS	DRAWN BY
12-1-25	CURSORY REVIEW REVISIONS	JSE/GAW

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Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

BATH CONCEPTS

VILLAGE OF LIBERTYVILLE, ILLINOIS

EXISTING CONDITIONS AND DEMOLITION PLAN-NORTH

PROJ. MGR.:	JSE
PROJ. ASSOC.:	MSL
DRAWN BY:	GAW
DATE:	09-19-25
SCALE:	1"=60'

SHEET 4 OF 25

BCALYIL01

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January 5, 2026 - 1:43 pm Drwg. Name: P:\Bcal\01\Civil\Cad\Preliminary\Plan Set\EX-DEMO.dwg Updated By: gzaczkiewski

06-01-16

LAKE COUNTY STORMWATER MANAGEMENT COMMISSION SESC NOTES:

A. SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF HYDROLOGIC DISTURBANCE OF UPLAND AREAS.

B. FOR THOSE DEVELOPMENTS THAT REQUIRE A DESIGNATED EROSION CONTROL INSPECTOR (DECI), INSPECTIONS AND DOCUMENTATION SHALL BE PERFORMED, AT A MINIMUM:
   - UPON COMPLETION OF SEDIMENT AND RUNOFF CONTROL MEASURES (INCLUDING PERIMETER CONTROLS AND DIVERSIONS), PRIOR TO PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
   - AFTER EVERY SEVEN (7) CALENDAR DAYS OR STORM EVENT WITH GREATER THAN 0.5 INCH OF RAINFALL OR LIQUID EQUIVALENT PRECIPITATION.

C. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. IF STRIPPING, CLEARING, GRADING, OR LANDSCAPING ARE TO BE DONE IN PHASES, THE PERMITTEE SHALL PLAN FOR APPROPRIATE SOIL EROSION AND SEDIMENT CONTROL MEASURES.

D. A STABILIZED MAT OF CRUSHED STONE MEETING IDOT GRADATION CA-1 UNDERLAIN WITH FILTER FABRIC AND IN ACCORDANCE WITH THE ILLINOIS URBAN MANUAL, OR OTHER APPROPRIATE MEASURE(S) AS APPROVED BY THE ENFORCEMENT OFFICER, SHALL BE INSTALLED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE. SEDIMENT OR SOIL REACHING AN IMPROVED PUBLIC RIGHT-OF-WAY, STREET, ALLEY OR PARKING AREA SHALL BE REMOVED BY SCRAPING OR STREET CLEANING AS ACCUMULATIONS WARRANT AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.

E. TEMPORARY DIVERSIONS SHALL BE CONSTRUCTED AS NECESSARY TO DIRECT ALL RUNOFF FROM HYDROLOGICALLY DISTURBED AREAS TO AN APPROPRIATE SEDIMENT TRAP OR BASIN.

F. DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT MEASURES WITHIN SEVEN (7) CALENDAR DAYS FOLLOWING THE END OF ACTIVE HYDROLOGIC DISTURBANCE OR REDISTURBANCE.

G. ALL STOCKPILES SHALL HAVE APPROPRIATE MEASURES TO PREVENT EROSION. STOCKPILES SHALL NOT BE PLACED IN FLOOD PRONE AREAS OR WETLANDS AND DESIGNATED BUFFERS.

H. SLOPES STEEPER THAN 3H:1V SHALL BE STABILIZED WITH APPROPRIATE MEASURESAS APPROVED BY THE ENFORCEMENT OFFICER.

I. APPROPRIATE EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL INTERIOR DETENTION BASIN SIDE SLOPES BETWEEN THE NORMAL WATER LEVEL AND HIGH WATER LEVEL.

J. STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED BY AN APPROPRIATE SEDIMENT CONTROL MEASURE.

K. IF DEWATERING SERVICES ARE USED, ADJOINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. DISCHARGES SHALL BE ROUTED THROUGH AN APPROVED ANIONIC POLYMER DEWATERING SYSTEM OR A SIMILAR MEASURE AS APPROVED BY THE ENFORCEMENT OFFICER. DEWATERING SYSTEMS SHOULD BE INSPECTED DAILY DURING OPERATIONAL PERIODS. THE ENFORCEMENT OFFICER, OR APPROVED REPRESENTATIVE, MUST BE PRESENT AT THE COMMENCEMENT OF DEWATERING ACTIVITIES.

L. IF INSTALLED SOIL EROSION AND SEDIMENT CONTROL MEASURES DO NOT MINIMIZE SEDIMENT LEAVING THE DEVELOPMENT SITE, ADDITIONAL MEASURES SUCH AS ANIONIC POLYMERS OR FILTRATION SYSTEMS MAY BE REQUIRED BY THE ENFORCEMENT OFFICER.

M. ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. THE PROPERTY OWNER SHALL BE ULTIMATELY RESPONSIBLE FOR MAINTENANCE AND REPAIR.

N. ALL TEMPORARY SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.

O. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER, ENFORCEMENT OFFICER, OR OTHER GOVERNING AGENCY.

"THESE EROSION CONTROL PLANS ARE A PORTION OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (IEPA) TOTAL REQUIREMENTS FOR A COMPLETE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AS REQUIRED BY THE GENERAL NPDES PERMIT NO. ILR10. CLIENT AND/OR CONTRACTOR WILL BE RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS OF THE GENERAL NPDES PERMIT AND COMPILATION OF THE COMPLETE SWPPP."

SOIL PROTECTION CHART

STABILIZATION CHART		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PERMANENT SEEDINGS				A									
DORMANT SEEDINGS	B										B		
TEMPORARY SEEDINGS				C									
TEMPORARY SEEDINGS	D												
SODDING					E **								
MULCHING	F												

A – KENTUCKY BLUEGRASS 90 LBS./AC. MIXED WITH PERENNIAL RYEGRASS 30 LBS./AC.

B – KENTUCKY BLUEGRASS 135 LBS./AC. MIXED WITH PERENNIAL RYEGRASS 45 LBS./AC. 2 TONS STRAW MULCH PER ACRE

C – SPRING OATS

D – WHEAT OR CEREAL RYE

E – SOD (NURSERY GROWN KENTUCKY BLUEGRASS)

F – STRAW MULCH 2 TONS PER ACRE

* IRRIGATION NEEDED DURING JUNE, JULY AND SEPTEMBER

** IRRIGATION NEEDED FOR 2-3 WEEKS AFTER SODDING

NOTE: THIS CHART IS A GUIDE TO ASSISTS THE CONTRACTOR IN UNDERSTANDING OPTIONS FOR SOIL STABILIZATION. THE LANDSCAPE PLAN SHALL TAKE PRECEDENCE OVER THIS CHART. ANY CONFLICT SHALL BE DISCUSSED WITH THE LANDSCAPE ARCHITECT PRIOR TO THE START OF CONSTRUCTION.

N

0 60 120 240

SCALE: 1"=120'

06-01-16

LEGEND

- TEMPORARY SILT FENCE (PERIMETER EROSION BARRIER)
- EROSION CONTROL BLANKET (NORTH AMERICAN GREEN SC 150) (SEEDING PER LANDSCAPE PLAN)
- TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
- WETLAND EMERGENT SEED MIX
- TEMPORARY STORM STRUCTURE PROTECTION
- PAVEMENT DRAINAGE FLOW
- SWALE DRAINAGE FLOW
- LIMITS OF DISTURBANCE/CONSTRUCTION

NOTE:

1. ALL DISTURBED GRASS AREA ARE TO BE RESTORED WITH THE SEED AND NORTH AMERICAN GREEN DS75 EROSION CONTROL BLANKET.
2. CONTRACTOR SHALL INSTALL MANUFACTURERS RECOMMENDED INLET PROTECTION ON ALL EXISTING AND PROPOSED STORM RECEIVING STRUCTURES.

06-01-16

CONSTRUCTION SEQUENCE:

1. INSTALL SILT FENCE AT LOCATIONS AS INDICATED ON THE PLANS.
2. PROVIDE STABILIZED CONSTRUCTION ENTRANCE.
3. CONSTRUCT TEMPORARY DITCHES, SWALES, SEDIMENT TRAPS AND/OR BASINS.
4. STRIP EXISTING TOPSOIL FROM PROPOSED LIMITS OF DISTURBANCE AND STOCKPILE WHERE SHOWN ON PLANS.
5. PROVIDE SILT FENCE AROUND THE BASE OF THE STOCKPILES.
6. CONSTRUCT STORMWATER MANAGEMENT (DETENTION) FACILITIES TO SUB-GRADE AND INSTALL OUTLET PIPES.
7. COMPLETE TOPSOIL PLACEMENT AND PERMANENT SEEDING AND SODDING OF STORMWATER MANAGEMENT FACILITIES.
8. CUT AND FILL SITE TO PLAN SUB-GRADE.
9. CONSTRUCT UNDERGROUND IMPROVEMENTS, i.e. SANITARY SEWER WATER MAIN AND STORM SEWER**, ETC.
10. CONSTRUCT PAVEMENT IMPROVEMENTS PER PLAN.
11. COMPLETE CONSTRUCTION OF SITE WITH PERMANENT STABILIZATION.
12. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.

** INSTALL INLET PROTECTION AROUND DRAINAGE STRUCTURES AS CONSTRUCTED.

06-01-16

SOIL EROSION AND SEDIMENTATION CONTROL GENERAL NOTES:

1. ALL VEGETATIVE AND STRUCTURAL EROSION CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE "ILLINOIS URBAN MANUAL".
2. MAINTENANCE AND REPLACEMENT OF EROSION CONTROL ITEMS, WHEN DIRECTED BY THE OWNER, SHALL BE CONSIDERED AS INCIDENTAL TO THE CONTRACT.
3. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER OR EQUIVALENT SNOWFALL. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF SAID MEASURES SHALL BE MADE IMMEDIATELY.
4. INSTALL ALL PERIMETER SILT FENCING PRIOR TO ANY CLEARING OR GRADING. ONSITE SEDIMENT CONTROL MEASURES AS SHOWN AND SPECIFIED BY THIS EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE CONSTRUCTED AND FUNCTIONAL PRIOR TO INITIATING CLEARING, GRADING, STRIPPING, EXCAVATION OR FILLING ACTIVITIES ON THE SITE.
5. STORM WATERS FALLING ON THE ENTIRE SITE SHALL BE DIVERTED INTO THE DETENTION BASIN, PRIOR TO BEGINNING MASS EXCAVATION, THE CONTRACTOR SHALL CONSTRUCT DITCHES, SWALES, SEDIMENTATION TRAPS AND SILTATION CONTROL MEASURES AS REQUIRED TO INTERCEPT SURFACE WATERS BEFORE THEY FLOW ONTO ADJACENT PROPERTY AND CONVEY THEM TO THE THE DETENTION BASIN.
6. IF STORMWATER DETENTION IS NOT REQUIRED THE CONTRACTOR SHALL CONSTRUCT DITCHES, SWALES, SEDIMENT TRAPS AND SILTATION CONTROL MEASURES AS REQUIRED TO INTERCEPT SURFACE WATERS BEFORE THEY FLOW ONTO ADJACENT PROPERTY.
7. STABILIZATION OF DISTURBED AREAS MUST BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING OR OTHER EARTH DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. STABILIZATION OF DISTURBED AREAS MUST BE INITIATED WITHIN 1 WORKING DAY OF PERMANENT OR TEMPORARY CESSATION OF EARTH DISTURBING ACTIVITIES AND SHALL BE COMPLETED AS SOON AS POSSIBLE BUT NOT LATER THAN 14 DAYS FROM THE INITIATION OF STABILIZATION WORK IN AN AREA.
8. TEMPORARY SEED MIXTURE SHALL BE APPLIED AT 64 LBS./ACRE.
9. INLET PROTECTION SHALL BE INSTALLED UNDER THE GRATING OF EACH DRAINAGE STRUCTURE.
10. STABILIZATION OF TOPSOIL STOCKPILES SHALL BE INITIATED IMMEDIATELY ON COMPLETION UNLESS THEY WILL BE DISTURBED WITHIN FOURTEEN (14) CALENDAR DAYS. STABILIZATION OF STOCKPILES MUST BE INITIATED WITHIN 1 WORKING DAY OF PERMANENT OR TEMPORARY CESSATION OF EARTH DISTURBING ACTIVITIES AND SHALL BE COMPLETED AS SOON AS POSSIBLE BUT NOT LATER THAN 14 DAYS FROM THE INITIATION OF STABILIZATION WORK IN AN AREA. ALL SOIL STORAGE PILES SHALL BE PROTECTED FROM EROSION WITH SILT FENCE ON THE DOWN SLOPE SIDE OF THE PILES.
11. DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO SEDIMENT BASINS OR SILT TRAPS. DEWATERING DIRECTLY INTO FIELD TILES OR STORMWATER STRUCTURES IS PROHIBITED.
12. WATER PUMPED DURING CONSTRUCTION OPERATION SHALL BE FILTERED.
13. DUST CONTROL SHALL BE PERFORMED ON A DAILY BASIS USING WATER DISPERSED FROM A TRUCK MOUNTED TANK WITH STANDARD DISCHARGE HEADER TO PROVIDE A UNIFORM RATE OF APPLICATION.
14. TEMPORARY GRAVEL CONSTRUCTION ENTRANCES SHALL BE MAINTAINED, ADJUSTED OR RELOCATED AS NECESSARY TO PREVENT SEDIMENT FROM BEING TRACKED ONTO PUBLIC ROADWAYS. ANY SEDIMENT REACHING A PUBLIC ROAD SHALL BE REMOVED BY SHOVELING OR STREET CLEANING BEFORE THE END OF EACH WORKING DAY.
15. ANY LOOSE MATERIAL THAT IS DEPOSITED IN THE FLOW LINE OF ANY GUTTER OR DRAINAGE STRUCTURE DURING CONSTRUCTION OPERATIONS SHALL BE REMOVED AT THE CLOSE OF EACH WORKING DAY.
16. OVERLAND FLOW SHALL BE DIRECTED TO THE DETENTION BASIN PRIOR TO LEAVING THE SITE.
17. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE CLIENT OR OTHER JURISDICTIONAL GOVERNMENTAL ENTITIES.
18. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH ALL JURISDICTIONAL GOVERNMENTAL AGENCY REQUIREMENTS WITHIN 30 DAYS OF FINAL STABILIZATION.

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DATE	REVISIONS	DRAWN BY
12-1-25	CURSORY REVIEW REVISIONS	JSE/GAW

Manhard CONSULTING
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Civil Engineers • Surveyors • Water Resource Engineers • Structural Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

BATH CONCEPTS

VILLAGE OF LIBERTYVILLE, ILLINOIS

SOIL EROSION AND SEDIMENT CONTROL PLAN - OVERALL

PROJ. MGR.:	JSE
PROJ. ASSOC.:	MSL
DRAWN BY:	GAW
DATE:	09-19-25
SCALE:	1"=120'

SHEET 5 OF 25

BCALYIL01

January 6, 2026 - 14:34 Dwg. Name: P:\Projects\Bath\Civil\Engineering\Plans Set\ESCP.dwg Updated By: dvasilopoulos

MATCH LINE SEE SHEET 7

LOT NO. 1

PROPOSED FACILITY NO. 1
±596,165 S.F.
FF=810.50
GF=810.00
DOCK=806.50

20 EXTERIOR DOCKS

27 EXTERIOR DOCKS

CLOSED LID

COMPACTOR

PATIO

OFFICE W/BATHROOMS
36,457 S.F.
(2 STORIES)

DETENTION BASIN B
HWL=798.50
NWL=794.00

DETENTION BASIN A
HWL=793.00
NWL=790.00

DETENTION BASIN A1
HWL=793.00
NWL=790.00

WISCONSIN CENTRAL RAILROAD

INLET PROTRECTION (TYP.)

ROCK RIP-RAP (TYP)

CONCRETE WASHOUT

CONSTRUCTION ENTRANCE (TYP.)

LIMITS OF DISTURBANCE

SILT FENCE (TYP)

PETERSON ROAD

SEE HIGHWAY PLANS PREPARED BY MANHARD CONSULTING FOR PETERSON ROAD IMPROVEMENTS.

SOIL PROTECTION CHART

STABILIZATION CHART	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PERMANENT SEEDINGS			A→			*	*		→*			
DORMANT SEEDINGS	B→										B→	
TEMPORARY SEEDINGS			C→									
TEMPORARY SEEDINGS	D→											
SODDING			E→**									
MULCHING	F→											

A – KENTUCKY BLUEGRASS 90 LBS./AC. MIXED WITH PERENNIAL RYEGRASS 30 LBS./AC.

B – KENTUCKY BLUEGRASS 135 LBS./AC. MIXED WITH PERENNIAL RYEGRASS 45 LBS./AC. 2 TONS STRAW MULCH PER ACRE

C – SPRING OATS

D – WHEAT OR CEREAL RYE

E – SOD (NURSERY GROWN KENTUCKY BLUEGRASS)

F – STRAW MULCH 2 TONS PER ACRE

* IRRIGATION NEEDED DURING JUNE, JULY AND SEPTEMBER

** IRRIGATION NEEDED FOR 2-3 WEEKS AFTER SODDING

NOTE: THIS CHART IS A GUIDE TO ASSISTS THE CONTRACTOR IN UNDERSTANDING OPTIONS FOR SOIL STABILIZATION. THE LANDSCAPE PLAN SHALL TAKE PRECEDENCE OVER THIS CHART. ANY CONFLICT SHALL BE DISCUSSED WITH THE LANDSCAPE ARCHITECT PRIOR TO THE START OF CONSTRUCTION.

N

0 30 60 120

SCALE: 1"=60'

06-01-16

LEGEND

- S — S — TEMPORARY SILT FENCE (PERIMETER EROSION BARRIER)
- EROSION CONTROL BLANKET (NORTH AMERICAN GREEN SC 150) (SEEDING PER LANDSCAPE PLAN)
- TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
- WETLAND EMERGENT SEED MIX
- TEMPORARY STORM STRUCTURE PROTECTION
- PAVEMENT DRAINAGE FLOW
- SWALE DRAINAGE FLOW
- LIMITS OF DISTURBANCE/CONSTRUCTION

06-01-16

CONSTRUCTION SEQUENCE:

1. INSTALL SILT FENCE AT LOCATIONS AS INDICATED ON THE PLANS.
2. PROVIDE STABILIZED CONSTRUCTION ENTRANCE.
3. CONSTRUCT TEMPORARY DITCHES, SWALES, SEDIMENT TRAPS AND/OR BASINS.
4. STRIP EXISTING TOPSOIL FROM PROPOSED LIMITS OF DISTURBANCE AND STOCKPILE WHERE SHOWN ON PLANS.
5. PROVIDE SILT FENCE AROUND THE BASE OF THE STOCKPILES.
6. CONSTRUCT STORMWATER MANAGEMENT (DETENTION) FACILITIES TO SUB-GRADE AND INSTALL OUTLET PIPES.
7. COMPLETE TOPSOIL PLACEMENT AND PERMANENT SEEDING AND SODDING OF STORMWATER MANAGEMENT FACILITIES.
8. CUT AND FILL SITE TO PLAN SUB-GRADE.
9. CONSTRUCT UNDERGROUND IMPROVEMENTS, i.e. SANITARY SEWER WATER MAIN AND STORM SEWER**, ETC.
10. CONSTRUCT PAVEMENT IMPROVEMENTS PER PLAN.
11. COMPLETE CONSTRUCTION OF SITE WITH PERMANENT STABILIZATION.
12. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.

** INSTALL INLET PROTECTION AROUND DRAINAGE STRUCTURES AS CONSTRUCTED.

06-01-16

SOIL EROSION AND SEDIMENTATION CONTROL GENERAL NOTES:

1. ALL VEGETATIVE AND STRUCTURAL EROSION CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE "ILLINOIS URBAN MANUAL".
2. MAINTENANCE AND REPLACEMENT OF EROSION CONTROL ITEMS, WHEN DIRECTED BY THE OWNER, SHALL BE CONSIDERED AS INCIDENTAL TO THE CONTRACT.
3. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER OR EQUIVALENT SNOWFALL. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF SAID MEASURES SHALL BE MADE IMMEDIATELY.
4. INSTALL ALL PERIMETER SILT FENCING PRIOR TO ANY CLEARING OR GRADING. ONSITE SEDIMENT CONTROL MEASURES AS SHOWN AND SPECIFIED BY THIS EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE CONSTRUCTED AND FUNCTIONAL PRIOR TO INITIATING CLEARING, GRADING, STRIPPING, EXCAVATION OR FILLING ACTIVITIES ON THE SITE.
5. STORM WATERS FALLING ON THE ENTIRE SITE SHALL BE DIVERTED INTO THE DETENTION BASIN, PRIOR TO BEGINNING MASS EXCAVATION, THE CONTRACTOR SHALL CONSTRUCT DITCHES, SWALES, SEDIMENTATION TRAPS AND SILTATION CONTROL MEASURES AS REQUIRED TO INTERCEPT SURFACE WATERS BEFORE THEY FLOW ONTO ADJACENT PROPERTY AND CONVEY THEM TO THE DETENTION BASIN.
6. IF STORMWATER DETENTION IS NOT REQUIRED THE CONTRACTOR SHALL CONSTRUCT DITCHES, SWALES, SEDIMENT TRAPS AND SILTATION CONTROL MEASURES AS REQUIRED TO INTERCEPT SURFACE WATERS BEFORE THEY FLOW ONTO ADJACENT PROPERTY.
7. STABILIZATION OF DISTURBED AREAS MUST BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING OR OTHER EARTH DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. STABILIZATION OF DISTURBED AREAS MUST BE INITIATED WITHIN 1 WORKING DAY OF PERMANENT OR TEMPORARY CESSATION OF EARTH DISTURBING ACTIVITIES AND SHALL BE COMPLETED AS SOON AS POSSIBLE BUT NOT LATER THAN 14 DAYS FROM THE INITIATION OF STABILIZATION WORK IN AN AREA.
8. TEMPORARY SEED MIXTURE SHALL BE APPLIED AT 64 LBS/ACRE.
9. INLET PROTECTION SHALL BE INSTALLED UNDER THE GRATING OF EACH DRAINAGE STRUCTURE.
10. STABILIZATION OF TOPSOIL STOCKPILES SHALL BE INITIATED IMMEDIATLEY UPON COMPLETION UNLESS THEY WILL BE DISTURBED WITHIN FOURTEEN (14) CALENDAR DAYS. STABILIZATION OF STOCKPILES MUST BE INITIATED WITHIN 1 WORKING DAY OF PERMANENT OR TEMPORARY CESSATION OF EARTH DISTURBING ACTIVITIES AND SHALL BE COMPLETED AS SOON AS POSSIBLE BUT NOT LATER THAN 14 DAYS FROM THE INITIATION OF STABILIZATION WORK IN AN AREA. ALL SOIL STORAGE PILES SHALL BE PROTECTED FROM EROSION WITH SILT FENCE ON THE DOWN SLOPE SIDE OF THE PILES.
11. DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO SEDIMENT BASINS OR SILT TRAPS. DEWATERING DIRECTLY INTO FIELD TILES OR STORMWATER STRUCTURES IS PROHIBITED.
12. WATER PUMPED DURING CONSTRUCTION OPERATION SHALL BE FILTERED.
13. DUST CONTROL SHALL BE PERFORMED ON A DAILY BASIS USING WATER DISPERSED FROM A TRUCK MOUNTED TANK WITH STANDARD DISCHARGE HEADER TO PROVIDE A UNIFORM RATE OF APPLICATION.
14. TEMPORARY GRAVEL CONSTRUCTION ENTRANCES SHALL BE MAINTAINED, ADJUSTED OR RELOCATED AS NECESSARY TO PREVENT SEDIMENT FROM BEING TRACKED ONTO PUBLIC ROADWAYS. ANY SEDIMENT REACHING A PUBLIC ROAD SHALL BE REMOVED BY SHOVELING OR STREET CLEANING BEFORE THE END OF EACH WORKING DAY.
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18. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH ALL JURISDICTIONAL GOVERNMENTAL AGENCY REQUIREMENTS WITHIN 30 DAYS OF FINAL STABILIZATION.

"THESE EROSION CONTROL PLANS ARE A PORTION OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (IEPA) TOTAL REQUIREMENTS FOR A COMPLETE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AS REQUIRED BY THE GENERAL NPDES PERMIT NO. ILR10. CLIENT AND/OR CONTRACTOR WILL BE RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS OF THE GENERAL NPDES PERMIT AND COMPILATION OF THE COMPLETE SWPPP."

DRAWN BY	REVISIONS	DATE
JSE/GAW	CURSORY REVIEW REVISIONS	12-1-25

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One Overlook Point, Suite 250, Lincolnshire, IL 60069 | p:847.634.5500 | manhard.com
Civil Engineers • Surveyors • Water Resource Engineers • Structural Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

BATH CONCEPTS

VILLAGE OF LIBERTYVILLE, ILLINOIS

SOIL EROSION AND SEDIMENT CONTROL PLAN-SOUTH

PROJ. MGR.:	JSE
PROJ. ASSOC.:	MSL
DRAWN BY:	GAW
DATE:	09-19-25
SCALE:	1"=60'

SHEET 6 OF 25

BCALYIL01

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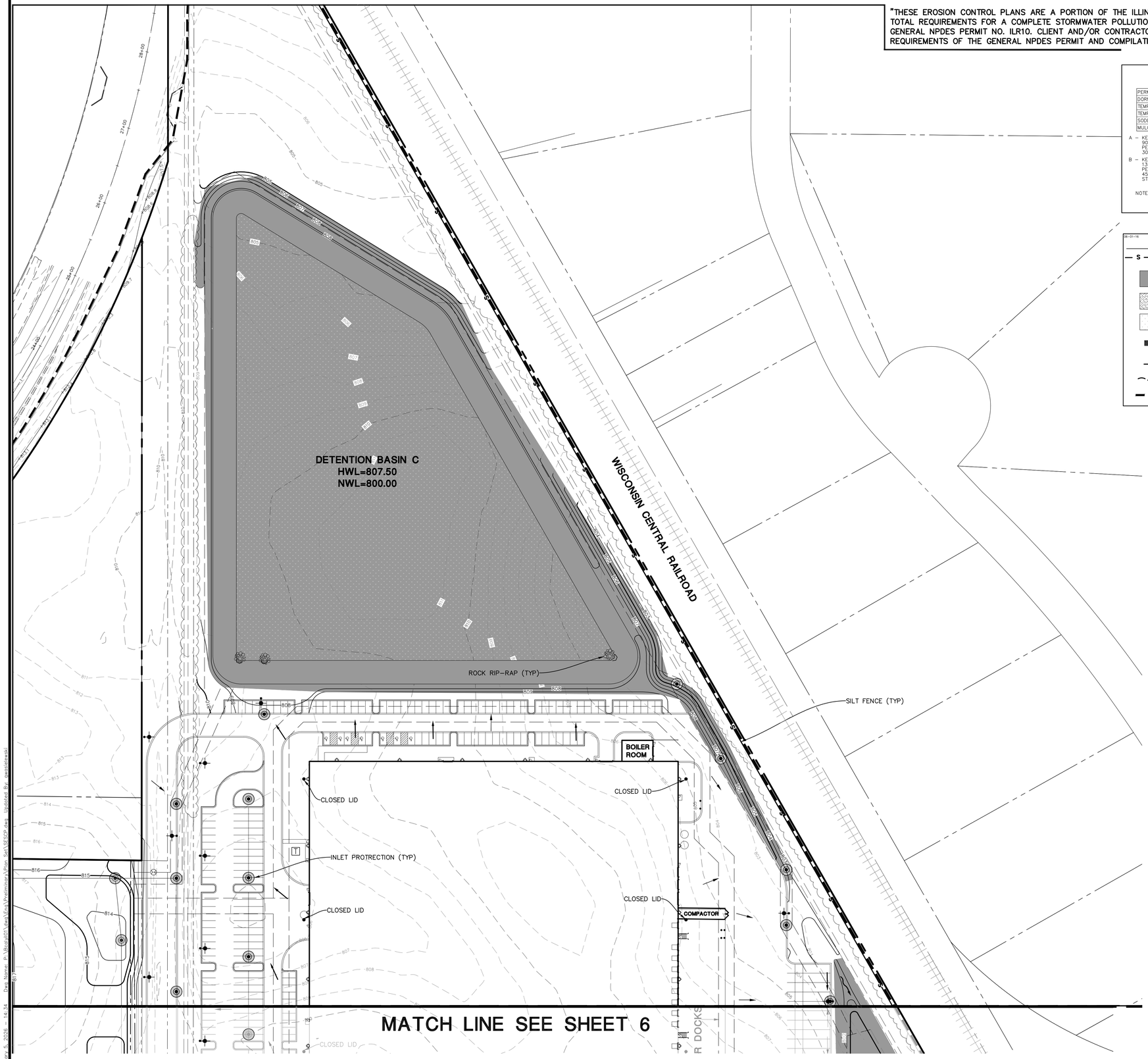
January 5, 2026 - 11:34 Dwg Name: P:\Projects\Bath\Engr\Civil\Preliminary\Plan Set\SESCP.dwg Updated By: gaw

"THESE EROSION CONTROL PLANS ARE A PORTION OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (IEPA) TOTAL REQUIREMENTS FOR A COMPLETE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AS REQUIRED BY THE GENERAL NPDES PERMIT NO. ILR10. CLIENT AND/OR CONTRACTOR WILL BE RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS OF THE GENERAL NPDES PERMIT AND COMPILATION OF THE COMPLETE SWPPP."



SOIL PROTECTION CHART

STABILIZATION CHART	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PERMANENT SEEDINGS			A→			*	*	*	*			
DORMANT SEEDINGS	B→									B		→
TEMPORARY SEEDINGS			C→						→			
TEMPORARY SEEDINGS	D→											
SODDING			E**						→			
MULCHING	F→											

A – KENTUCKY BLUEGRASS 90 LBS./AC. MIXED WITH PERENNIAL RYEGRASS 30 LBS./AC.

B – KENTUCKY BLUEGRASS 135 LBS./AC. MIXED WITH PERENNIAL RYEGRASS 45 LBS./AC. 2 TONS STRAW MULCH PER ACRE

C – SPRING OATS

D – WHEAT OR CEREAL RYE

E – SOD (NURSERY GROWN KENTUCKY BLUEGRASS)

F – STRAW MULCH 2 TONS PER ACRE

* IRRIGATION NEEDED DURING JUNE, JULY AND SEPTEMBER

** IRRIGATION NEEDED FOR 2-3 WEEKS AFTER SODDING

NOTE: THIS CHART IS A GUIDE TO ASSISTS THE CONTRACTOR IN UNDERSTANDING OPTIONS FOR SOIL STABILIZATION. THE LANDSCAPE PLAN SHALL TAKE PRECEDENCE OVER THIS CHART. ANY CONFLICT SHALL BE DISCUSSED WITH THE LANDSCAPE ARCHITECT PRIOR TO THE START OF CONSTRUCTION.

N

0 30 60 120

SCALE: 1"=60'

06-01-16

LEGEND

- S — S — TEMPORARY SILT FENCE (PERIMETER EROSION BARRIER)
- EROSION CONTROL BLANKET (NORTH AMERICAN GREEN SC 150) (SEEDING PER LANDSCAPE PLAN)
- TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
- WETLAND EMERGENT SEED MIX
- TEMPORARY STORM STRUCTURE PROTECTION
- PAVEMENT DRAINAGE FLOW
- SWALE DRAINAGE FLOW
- LIMITS OF DISTURBANCE/CONSTRUCTION

06-01-16

CONSTRUCTION SEQUENCE:

1. INSTALL SILT FENCE AT LOCATIONS AS INDICATED ON THE PLANS.
2. PROVIDE STABILIZED CONSTRUCTION ENTRANCE.
3. CONSTRUCT TEMPORARY DITCHES, SWALES, SEDIMENT TRAPS AND/OR BASINS.
4. STRIP EXISTING TOPSOIL FROM PROPOSED LIMITS OF DISTURBANCE AND STOCKPILE WHERE SHOWN ON PLANS.
5. PROVIDE SILT FENCE AROUND THE BASE OF THE STOCKPILES.
6. CONSTRUCT STORMWATER MANAGEMENT (DETENTION) FACILITIES TO SUB-GRADE AND INSTALL OUTLET PIPES.
7. COMPLETE TOPSOIL PLACEMENT AND PERMANENT SEEDING AND SODDING OF STORMWATER MANAGEMENT FACILITIES.
8. CUT AND FILL SITE TO PLAN SUB-GRADE.
9. CONSTRUCT UNDERGROUND IMPROVEMENTS, i.e. SANITARY SEWER WATER MAIN AND STORM SEWER**, ETC.
10. CONSTRUCT PAVEMENT IMPROVEMENTS PER PLAN.
11. COMPLETE CONSTRUCTION OF SITE WITH PERMANENT STABILIZATION.
12. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.

** INSTALL INLET PROTECTION AROUND DRAINAGE STRUCTURES AS CONSTRUCTED.

06-01-16

SOIL EROSION AND SEDIMENTATION CONTROL GENERAL NOTES:

1. ALL VEGETATIVE AND STRUCTURAL EROSION CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE "ILLINOIS URBAN MANUAL".
2. MAINTENANCE AND REPLACEMENT OF EROSION CONTROL ITEMS, WHEN DIRECTED BY THE OWNER, SHALL BE CONSIDERED AS INCIDENTAL TO THE CONTRACT.
3. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER OR EQUIVALENT SNOWFALL. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF SAID MEASURES SHALL BE MADE IMMEDIATELY.
4. INSTALL ALL PERIMETER SILT FENCING PRIOR TO ANY CLEARING OR GRADING. ONSITE SEDIMENT CONTROL MEASURES AS SHOWN AND SPECIFIED BY THIS EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE CONSTRUCTED AND FUNCTIONAL PRIOR TO INITIATING CLEARING, GRADING, STRIPPING, EXCAVATION OR FILLING ACTIVITIES ON THE SITE.
5. STORM WATERS FALLING ON THE ENTIRE SITE SHALL BE DIVERTED INTO THE DETENTION BASIN, PRIOR TO BEGINNING MASS EXCAVATION, THE CONTRACTOR SHALL CONSTRUCT DITCHES, SWALES, SEDIMENTATION TRAPS AND SILTATION CONTROL MEASURES AS REQUIRED TO INTERCEPT SURFACE WATERS BEFORE THEY FLOW ONTO ADJACENT PROPERTY AND CONVEY THEM TO THE DETENTION BASIN.
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DATE	REVISIONS	DRAWN BY
12-1-25	CURSORY REVIEW REVISIONS	JSE/GAW

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Civil Engineers • Water Resource Engineers • Structural Engineers • Surveyors
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BATH CONCEPTS

VILLAGE OF LIBERTYVILLE, ILLINOIS

SOIL EROSION AND SEDIMENT CONTROL PLAN-NORTH

PROJ. MGR.:	JSE
PROJ. ASSOC.:	MSL
DRAWN BY:	GAW
DATE:	09-19-25
SCALE:	1"=60'

SHEET 7 OF 25

BCALYIL01

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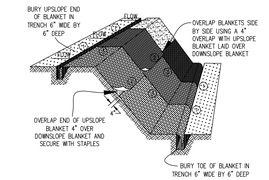
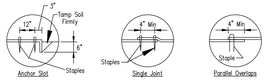
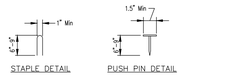
January 5, 2026 - 14:54 Dwg Name: P:\Projects\101\Civil\Engineering\Preliminary Plan Set\SESCP.dwg Updated By: daestefanski





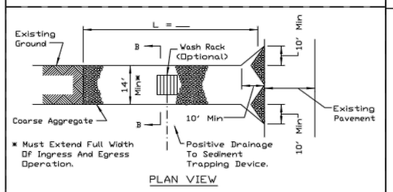


NOTES:

1. Staples shall be placed in a diamond pattern at 2 per s.y. for stitched blankets. Non-stitched shall use 4 staples per s.y. of material. This equates to 200 staples with stitched blanket and 400 staples with non-stitched blanket per 100 s.y. of material.
2. Staple or push pin lengths shall be selected based on soil type and conditions. (minimum staple length is 6")
3. Erosion control material shall be placed in contact with the soil over a prepared seedbed.
4. All anchor slots shall be stapled at approximately 12" intervals.

EROSION CONTROL BLANKET INSTALLATION DETAILS

STABILIZED CONSTRUCTION ENTRANCE PLAN



NOTES:

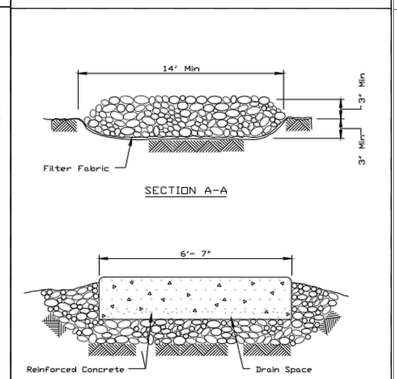
1. Filter fabric shall meet the requirements of material specification 592 GEOTEXTILE, Table I or II, Class I, II or IV and shall be placed over the cleared area prior to the placing of rock.
2. Rock or reclaimed concrete shall meet one of the following IDOT coarse aggregate gradation, CA-1, CA-2, CA-3 or CA-4 and be placed according to construction specification 25 ROCKFILL using placement Method 1 and Class III compaction.
3. Any drainage facilities required because of washing shall be constructed according to manufacturers specifications.
4. If wash racks are used they shall be installed according to the manufacturer's specifications.

REFERENCE: Project — Designed — Date — Checked — Date — Approved — Date

NRCS Natural Resources Conservation Service

STANDARD DWG. NO. IL-630 SHEET 1 OF 2 DATE 8-18-94

STABILIZED CONSTRUCTION ENTRANCE PLAN

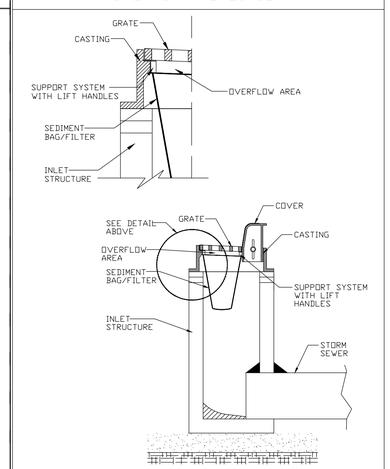


REFERENCE: Project — Designed — Date — Checked — Date — Approved — Date

NRCS Natural Resources Conservation Service

STANDARD DWG. NO. IL-630 SHEET 2 OF 2 DATE 8-18-94

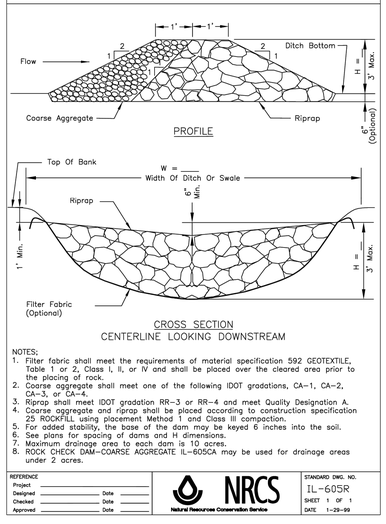
INLET PROTECTION - PAVED AREAS DROP-IN PROTECTION



REFERENCE: Project — Designed — Date — Checked — Date — Approved — Date

STANDARD DWG. NO. IUM-561D SHEET 1 OF 1 DATE 01-11-11

ROCK CHECK DAM - RIPRAP



NOTES:

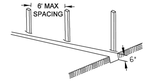
1. Filter fabric shall meet the requirements of material specification 592 GEOTEXTILE, Table 1 or 2, Class I, II, or IV and shall be placed over the cleared area prior to the placing of rock.
2. Coarse aggregate shall meet one of the following IDOT gradations, CA-1, CA-2, CA-3, or CA-4.
3. Riprap shall meet IDOT gradation RR-3 or RR-4 and meet Quality Designation A.
4. Coarse aggregate and riprap shall be placed according to construction specification 25 ROCKFILL using placement Method 1 and Class III compaction.
5. For added stability, the base of the dam may be keyed 6 inches into the soil.
6. See plans for spacing of dams and H dimensions.
7. Maximum drainage area to each dam is 10 acres.
8. ROCK CHECK DAM-COARSE AGGREGATE IL-605CA may be used for drainage areas under 2 acres.

REFERENCE: Project — Designed — Date — Checked — Date — Approved — Date

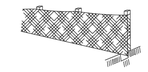
NRCS Natural Resources Conservation Service

STANDARD DWG. NO. IL-605R SHEET 1 OF 1 DATE 1-29-99

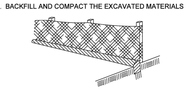
1. SET POSTS AND EXCAVATE OR SLIT-TRENCH A 6-INCH DEEP TRENCH UPSLOPE ALONG THE LINE OF POSTS



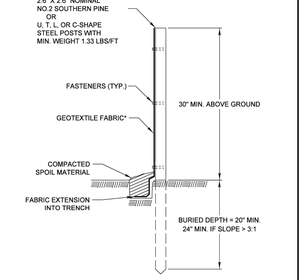
2. ATTACH GEOTEXTILE FILTER FABRIC TO EACH POST WITH A MINIMUM OF 3 (THREE) FASTENERS PER POST AND EXTEND FABRIC TO THE BOTTOM OF THE TRENCH



3. BACKFILL AND COMPACT THE EXCAVATED MATERIALS



Requirements	Test Methods	Wire Backed Supported Silt Fence*	Unsupported Silt Fence	
			Geotextile Elongation >=50%*	Geotextile Elongation <50%*
Maximum Post Spacing		4 feet	4 feet	6 feet
Grab Strength	ASTM D 4632			
Machine direction		90 lbs	124 lbs	124 lbs
X-Machine direction		90 lbs	100 lbs	100lbs
Permittivity *	ASTM D 4491	0.05 sec $^{-1}$	0.05 sec $^{-1}$	0.05 sec $^{-1}$
Apparent Opening Size	ASTM D 4751	0.024m maximum average roll value		
Ultraviolet stability (retained strength)	ASTM D 4355	70% after 500 hours of exposure		



* NOTE: OPTIONAL WIRE SUPPORT
- MIN. 30" HEIGHT
- MIN. 14 GAUGE WIRE
- MIN. 6 HORIZ. WIRES
- MIN. 6" VERTICAL SPACING

SCALE 1" = 1'

REVISIONS	DATE
ORIG. by LCSMC	4/21/08
Update Text	7/15/11

LakeCounty Division of Transportation

APPROVED BY: M. G. ZEMAITIS
DATE: JUNE 20, 2008

PERIMETER EROSION BARRIER INSTALLATION

LC2051

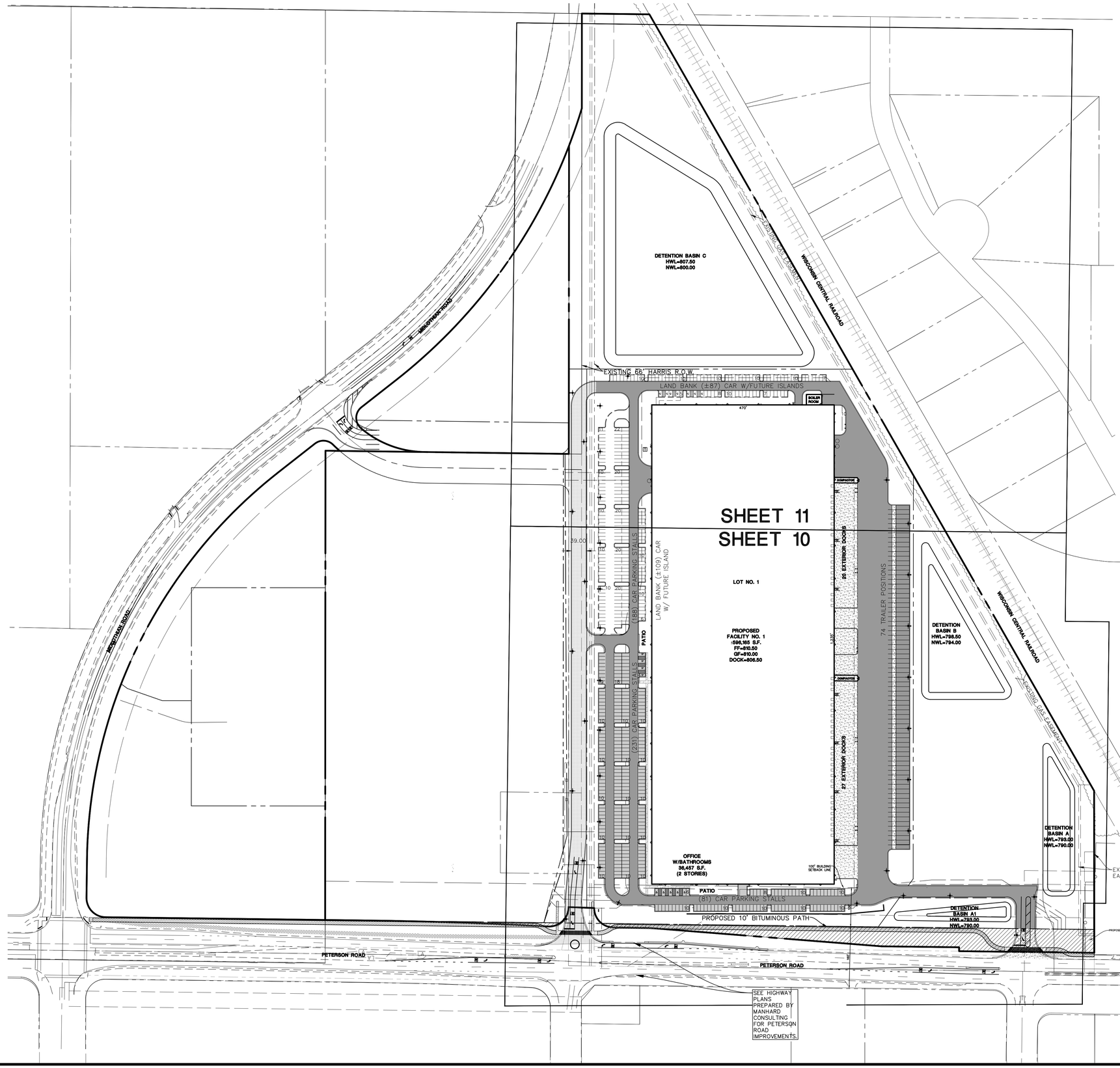
RIP-RAP

PIPE DIAMETER (IN.) D	STONE RIP-RAP							BEDDING
	QUALITY DESIGNATION	GRADATION NUMBER RR	MINIMUM THICKNESS (IN.) A	MINIMUM LENGTH (FT.) 4D'	WEIGHT RANGE (#)	WEIGHT AVERAGE (#)	SIZE AVERAGE (IN.)	MINIMUM THICKNESS (IN.)
12"	B	3	8"	4'	1-50	10	4.5"	N/A
15"	B	3	8"	5	1-50	10	4.5"	N/A
18"	B	4	16"	6'	1-150	40	7"	6"
21"	B	4	16"	7'	1-150	40	7"	6"
24"	B	4	16"	8'	1-150	40	7"	6"
27"	B	4	16"	9'	1-150	40	7"	6"
30"	B	4	16"	10'	1-150	40	7"	6"
36"	B	5	22"	12'	3-400	90	10"	8"
42"	B	5	22"	14'	3-400	90	10"	8"
48"	B	6	26"	16'	6-600	170	12"	10"
54"	B	6	26"	18'	6-600	170	12"	10"
60"	B	6	26"	20'	6-600	170	12"	10"
72"	B	6	26"	24'	6-600	170	12"	10"

NOTE:
1. FOR PIPE LARGER THAN 72" A SPECIAL DESIGN OF RIP-RAP OR APRON IS REQUIRED.
2. REFER TO I.D.O.T. SPECIFICATIONS AND STANDARDS FOR BEDDING GRADTION.

06-01-15
STONE RIP RAP DETAIL
S-ST-RIPRAP-STONE

Galvanized ½" std. pipe cap (typ.)
3"
8" min.
3'-0" dia. pipe
3'-0" dia. pipe
3'-0" dia. pipe



O-2 REGULATIONS AND LOT REQUIREMENTS	
MINIMUM LOT AREA:	120,000 S.F.
MINIMUM LOT WIDTH	150'
YARD ABUTTING ARTERIAL SETBACK:	100'
INTERNAL SIDE YARD SETBACK:	25'
REAR YARD SETBACK:	25'
FLOOR AREA RATIO:	0.5
MAXIMUM LOT COVERAGE	80%

I-1 REGULATIONS AND LOT REQUIREMENTS	
MINIMUM LOT AREA:	30,000 S.F.
MINIMUM LOT WIDTH	150'
YARD ABUTTING ARTERIAL SETBACK:	100'
INTERNAL SIDE YARD SETBACK:	25'
REAR YARD SETBACK:	25'
FLOOR AREA RATIO:	0.6
MAXIMUM LOT COVERAGE	80%

N

0 60 120 240

SCALE: 1"=120'

06-01-16

PAVEMENT LEGEND

STANDARD DUTY PAVEMENT
3" ASPHALT SURFACE
10" AGGREGATE BASE COURSE, (CA-6)

HEAVY DUTY PAVEMENT
5" ASPHALT SURFACE
12" AGGREGATE BASE COURSE, (CA-6)

INDUSTRIAL STREET PAVEMENT
1 1/2" BITUMINOUS SURFACE COURSE, HOT-MIX ASPHALT, MIX D, N50
2 1/2"' BITUMINOUS BINDER COURSE, HOT-MIX ASPHALT, IL-19, N50
8" BITUMINOUS ASPHALT MIXTURE
4" AGGREGATE BASE COURSE, TYPE B

CONCRETE PAVEMENT
8" PORTLAND CEMENT CONCRETE PAVEMENT W/ 6 X 6 W1.4 WWF
6" COMPACTED AGGREGATE BASE, (CA-6)

CONCRETE SIDEWALK
5" PORTLAND CEMENT CONCRETE
4" COMPACTED AGGREGATE BASE COURSE, TYPE B

BITUMINOUS PATH
3" BITUMINOUS SURFACE COURSE HOT-MIX ASPHALT, MIX D, N50
6" AGGREGATE BASE COURSE, TYPE B

06-01-16

SITE DATA

LOT 1 SITE AREA	±34.51 ACRES
STANDARD PARKING PROVIDED	303 SPACES
HANDICAP PROVIDED	9 SPACES
LAND BANK PARKING PROVIDED	275 SPACES
TRAILER PARKING PROVIDED	74 SPACES
LOT 2 SITE AREA	±9.73 ACRES
LOT 3 SITE AREA	±14.45 ACRES
LOT 4 SITE AREA	±15.29 ACRES
LOT 5 SITE AREA	±3.58 ACRES

06-01-16

SITE DIMENSIONAL AND PAVING NOTES:

1. ALL DIMENSIONS ARE FACE OF CURB TO FACE OF CURB OR BUILDING FOUNDATION UNLESS NOTED OTHERWISE.
2. ALL PROPOSED CURB AND GUTTER SHALL BE B6.12 UNLESS OTHERWISE NOTED.
3. ALL CURB RADII SHALL BE 3' MEASURED TO FACE OF CURB UNLESS NOTED OTHERWISE.
4. TIE ALL PROPOSED CURB AND GUTTER TO EXISTING CURB AND GUTTER WITH 2-#6 BARS x 18" LONG DOWELED INTO EXISTING CURB.
5. BUILDING DIMENSIONS AND ADJACENT PARKING HAVE BEEN PREPARED BASED UPON ARCHITECTURAL INFORMATION CURRENT AT THE DATE OF THIS DRAWING. SUBSEQUENT ARCHITECTURAL CHANGES MAY EXIST. THEREFORE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR PRECISE BUILDING DIMENSIONS AND NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. BUILDING DIMENSIONS SHOWN SHOULD NOT BE USED FOR CONSTRUCTION LAYOUT OF BUILDING.
6. IMPROVEMENTS ADJACENT TO BUILDING, IF SHOWN, SUCH AS TRUCK DOCK, RETAINING WALLS, SIDEWALKS, CURBING, FENCES, CANOPIES, RAMPS, HANDICAP ACCESS, PLANTERS, DUMPSTERS, AND TRANSFORMERS ETC. HAVE BEEN SHOWN FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS, SPECIFICATIONS AND DETAILS.
7. LOCATION OF PRIVATE SIDEWALKS SHALL BE COORDINATED WITH PROPOSED DOORWAY. CONTRACTOR TO VERIFY ACTUAL BUILDING PLAN LOCATIONS WITH ARCHITECT/DEVELOPER PRIOR TO CONSTRUCTING THE SIDEWALKS.
8. ALL ROADWAY AND PARKING LOT SIGNAGE, STRIPING, SYMBOLS, ETC. SHALL BE IN ACCORDANCE WITH LATEST JURISDICTIONAL GOVERNMENTAL ENTITY DETAILS.
9. SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR ITEMS DELETED.
10. PROVIDE DEPRESSED CURB AND RAMP AT ALL HANDICAP ACCESSIBLE SIDEWALK AND PATH LOCATIONS PER FEDERAL AND STATE STANDARDS.
11. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.

DATE	REVISIONS	DRAWN BY
12-1-25	CURSORY REVIEW REVISIONS	JSE/GAW

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One Overlook Point, Suite 250, Lincolnshire, IL 60069 ph 847.634.5500 fax 847.634.0066 manhard.com
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Construction Managers • Environmental Scientists • Landscape Architects • Planners

BATH CONCEPTS

VILLAGE OF LIBERTYVILLE, ILLINOIS

SITE DIMENSIONAL AND PAVING PLAN - OVERALL

PROJ. MGR.:	JSE
PROJ. ASSOC.:	MSL
DRAWN BY:	GAW
DATE:	09-19-25
SCALE:	1"=120'

SHEET

9 OF 25

BCALYIL01

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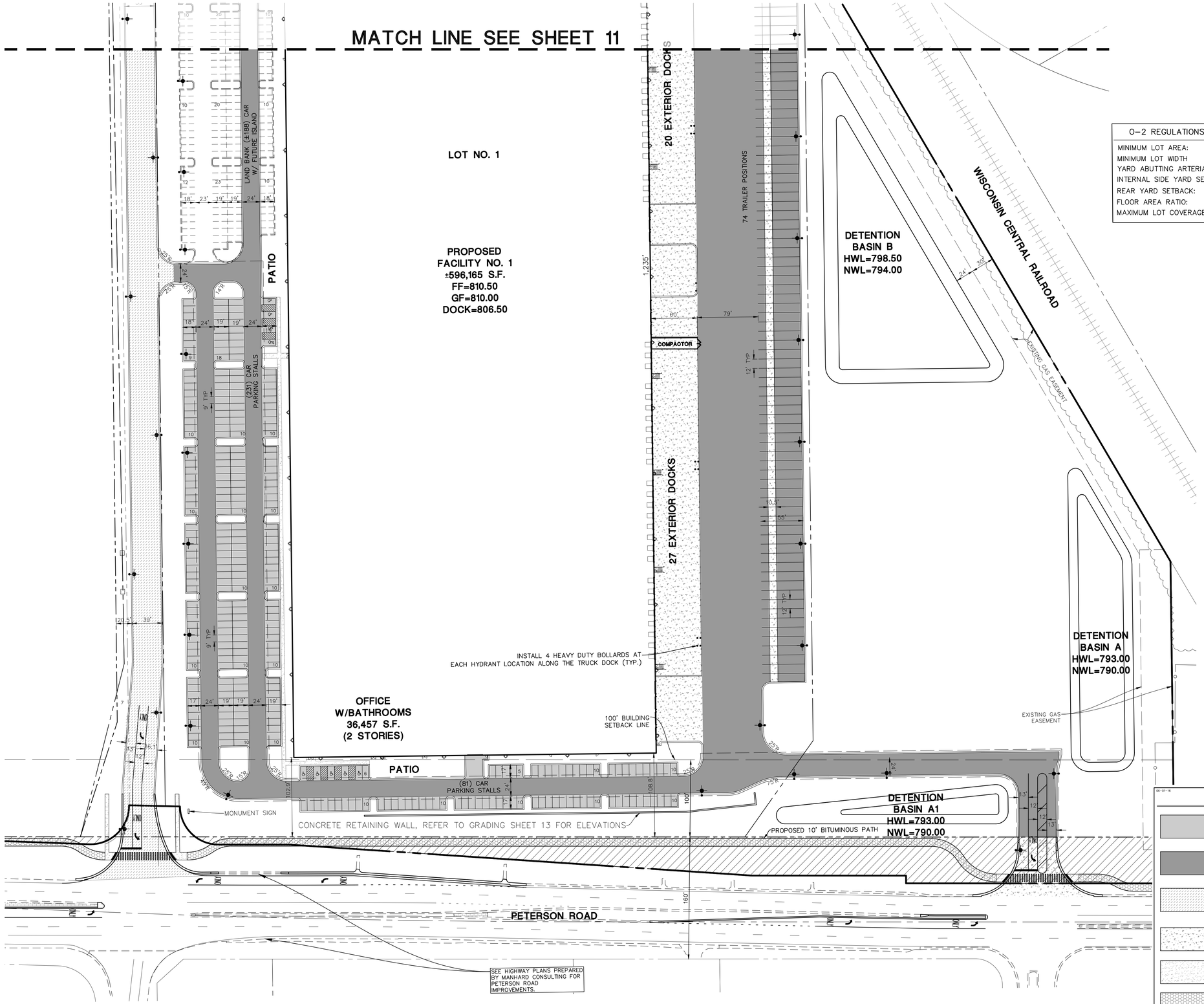
January 5, 2026 - 14:38 Data Name: P:\Projects\Bath Concepts\Preliminary\Plan Sets\OVERALL SITE.dwg Updated By: gaw(stefewski)



O-2 REGULATIONS AND LOT REQUIREMENTS	
MINIMUM LOT AREA:	120,000 S.F.
MINIMUM LOT WIDTH	150'
YARD ABUTTING ARTERIAL SETBACK:	100'
INTERNAL SIDE YARD SETBACK:	25'
REAR YARD SETBACK:	25'
FLOOR AREA RATIO:	0.5
MAXIMUM LOT COVERAGE	80%

I-1 REGULATIONS AND LOT REQUIREMENTS	
MINIMUM LOT AREA:	30,000 S.F.
MINIMUM LOT WIDTH	150'
YARD ABUTTING ARTERIAL SETBACK:	100'
INTERNAL SIDE YARD SETBACK:	25'
REAR YARD SETBACK:	25'
FLOOR AREA RATIO:	0.6
MAXIMUM LOT COVERAGE	80%

08-01-16

SITE DIMENSIONAL AND PAVING NOTES:

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01-01-16

SITE DATA	
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08-01-16

PAVEMENT LEGEND

STANDARD DUTY PAVEMENT
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10" AGGREGATE BASE COURSE, (CA-6)

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3" BITUMINOUS SURFACE COURSE HOT-MIX ASPHALT, MIX D, N50
6" AGGREGATE BASE COURSE, TYPE B

DRAWN BY	REVISIONS	DATE
JSE/GAW	CURSORY REVIEW REVISIONS	12-1-25

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Construction Managers • Environmental Scientists • Landscape Architects • Planners

BATH CONCEPTS
VILLAGE OF LIBERTYVILLE, ILLINOIS
SITE DIMENSIONAL AND PAVING PLAN - SOUTH

PROJ. MGR.:	JSE
PROJ. ASSOC.:	MSL
DRAWN BY:	MK
DATE:	09-19-25
SCALE:	1"=60'

SHEET
10 OF 25
BCALYIL01

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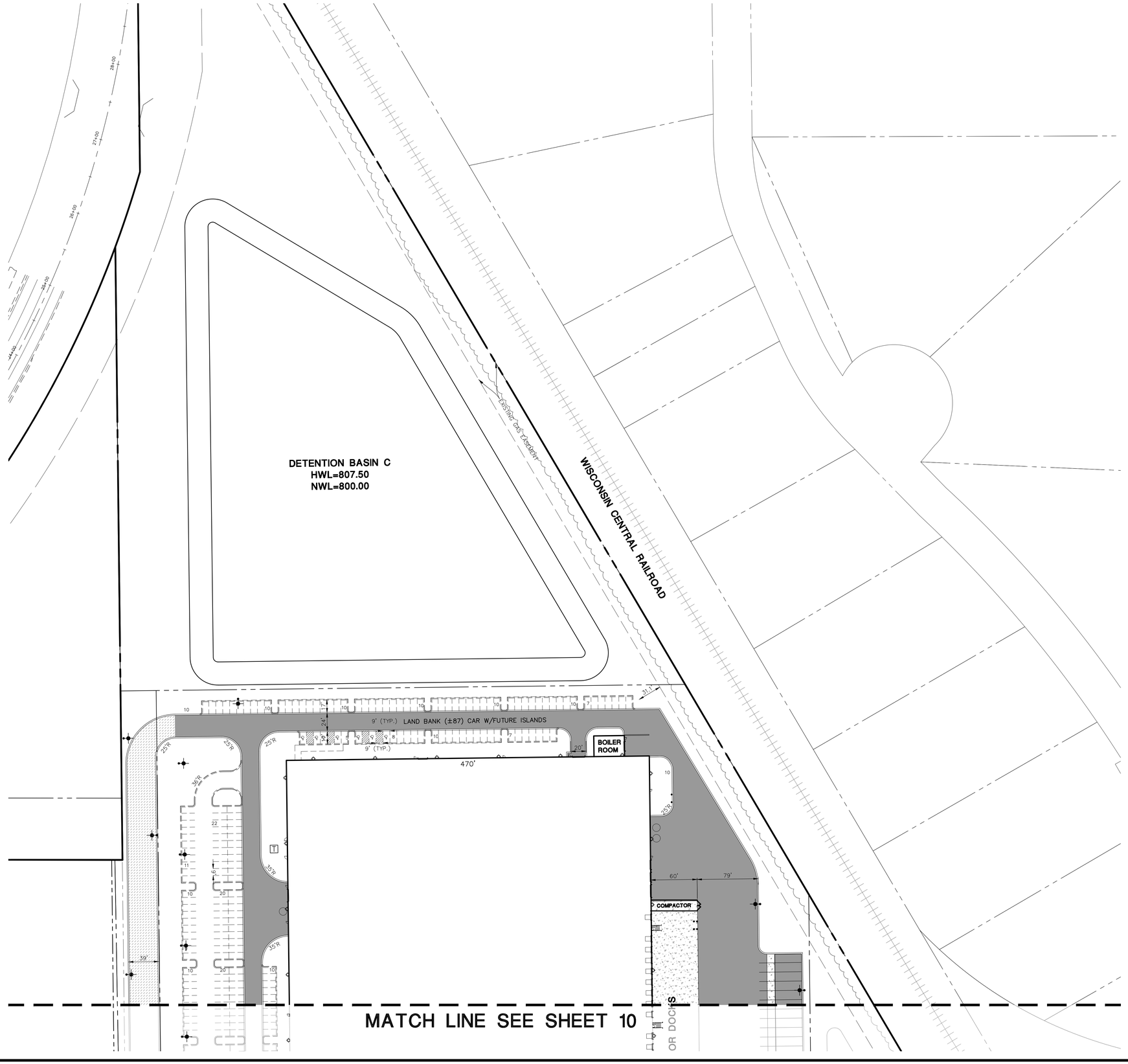
January 5, 2026 - 15:02 Dwg Name: P:\Bcal\dt01\Civil\Exh\Preliminary\Plan Set\SITE.dwg Updated By: awatsdawski



O–2 REGULATIONS AND LOT REQUIREMENTS	
MINIMUM LOT AREA:	120,000 S.F.
MINIMUM LOT WIDTH	150'
YARD ABUTTING ARTERIAL SETBACK:	100'
INTERNAL SIDE YARD SETBACK:	25'
REAR YARD SETBACK:	25'
FLOOR AREA RATIO:	0.5
MAXIMUM LOT COVERAGE	80%

N

0 30 60 120

SCALE: 1"=60'

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MINIMUM LOT WIDTH	150'
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08-01-16

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08-01-16

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3" BITUMINOUS SURFACE COURSE HOT–MIX ASPHALT, MIX D, N50
6" AGGREGATE BASE COURSE, TYPE B

DRAWN BY	DATE	REVISIONS
JSE/GAW	12–1–25	CURSORY REVIEW REVISIONS

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BATH CONCEPTS

VILLAGE OF LIBERTYVILLE, ILLINOIS

SITE DIMENSIONAL AND PAVING PLAN - NORTH

PROJ. MGR.:	JSE
PROJ. ASSOC.:	MSL
DRAWN BY:	MK
DATE:	09–19–25
SCALE:	1"=60'

SHEET
11 OF 25
BCALYIL01

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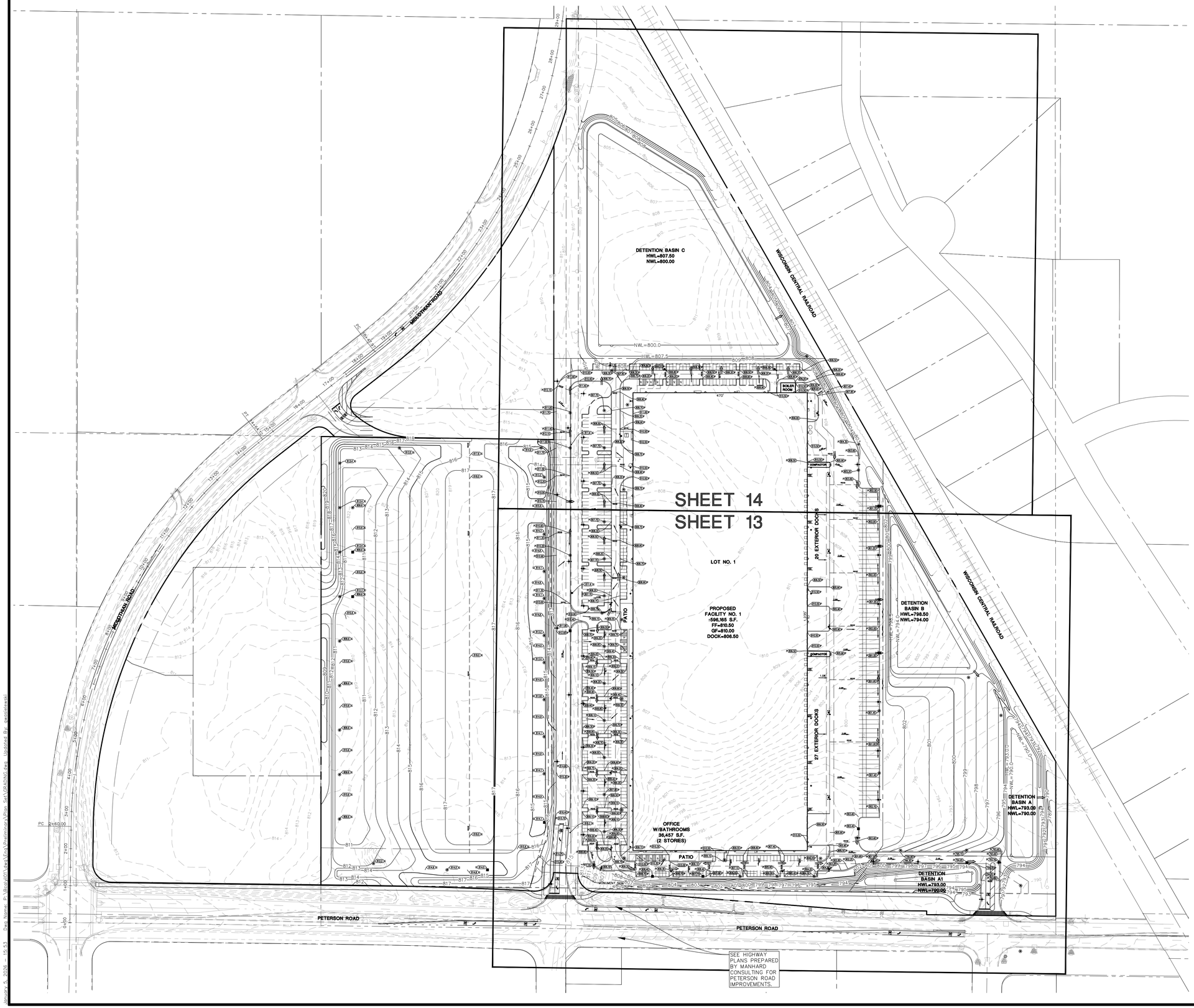
January 5, 2026 – 10:02 Data Name: P:\Bid\BCALYIL\Engr\Civil\Preliminary\Plan Set\SITE.dwg Updated By: dwiebenwski



N

0 60 120 240

SCALE: 1"=120'

DATE	REVISIONS	DRAWN BY
12-1-25	CURSORY REVIEW REVISIONS	JSE/GAW

GRADING PLAN LEGEND

764	PROPOSED 1 FOOT CONTOURS
	PROPOSED SPOT ELEVATION
F.F.	PROPOSED FINISHED FLOOR ELEVATION
G/F	PROPOSED GRADE AT FOUNDATION
P	PROPOSED PAVEMENT ELEVATION
T/C	PROPOSED TOP OF CURB
T/W	PROPOSED TOP OF WALK
T/WALL	PROPOSED TOP OF WALL
M/E	MEET EXISTING
G	PROPOSED GROUND GRADE OR GROUND AT BASE OF RETAINING WALL
	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE

GRADING NOTES:

1. PAVEMENT SLOPES THROUGH HANDICAP ACCESSIBLE PARKING AREAS SHALL BE 2.00% MAXIMUM IN ANY DIRECTION.
2. ALL HANDICAP RAMPS SHALL BE CONSTRUCTED WITH A MAXIMUM CROSS SLOPE OF 2.00% OR LESS.
3. MEET EXISTING GRADE AT PROPERTY LIMITS UNLESS NOTED OTHERWISE.
4. CONTRACTOR SHALL REFER TO THE SOIL EROSION AND SEDIMENT CONTROL PLAN AND DETAILS FOR CONSTRUCTION SCHEDULING AND EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO BEGINNING GRADING OPERATIONS.
5. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
6. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
7. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITION OR BETTER.
8. ALL UNPAVED AREAS DISTURBED BY GRADING OPERATIONS SHALL RECEIVE 6 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH GOVERNING SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED.
9. EXISTING CONDITIONS REPRESENT SITE CONDITIONS BASED ON LAKE COUNTY GIS TOPOGRAPHY, VILLAGE UTILITY ATLAS, UTILITY RECORD DRAWINGS, AND PERVIOUS ENGINEERING PLAN DESIGN INFORMATION. CONTRACTOR SHALL INSPECT SITE PRIOR TO BIDDING WORK TO VERIFY ACTUAL FIELD CONDITIONS AS PORTIONS OF THE DEMOLITION WORK MAY HAVE SINCE BEEN COMPLETED. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLETE ALL DEMOLITION WORK AS PER PLANS TO PREPARE THE SITE FOR CONSTRUCTION OF PROPOSED IMPROVEMENTS.
10. TRANSITIONS FROM DEPRESSED CURB TO FULL HEIGHT CURB SHALL BE TAPERED AT 2H:1V UNLESS OTHERWISE NOTED.

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Construction Managers • Environmental Scientists • Landscape Architects • Planners

BATH CONCEPTS
VILLAGE OF LIBERTYVILLE, ILLINOIS
GRADING PLAN - OVERALL

PROJ. MGR.:	JSE
PROJ. ASSOC.:	MSL
DRAWN BY:	MK
DATE:	09-19-25
SCALE:	1"=120'

SHEET 12 OF 25

BCALYIL01

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January 8, 2026 - 1:15:53 Dwg. Name: P:\Projects\Vault\Civil\Preliminary\Plan Set\GRADING.dwg Updated By: dieckelewski

MATCH LINE SEE SHEET 14

LOT NO. 1

PROPOSED
FACILITY NO. 1
±596,165 S.F.
FF=810.50
GF=810.00
DOCK=806.50

20 EXTERIOR DOCKS

27 EXTERIOR DOCKS

COMPACTOR

PATIO

OFFICE
W/BATHROOMS
36,457 S.F.
(2 STORIES)

PATIO

MONUMENT SIGN

DETENTION
BASIN B
HWL=798.50
NWL=794.00

DETENTION
BASIN A
HWL=793.00
NWL=790.00

DETENTION
BASIN A1
HWL=793.00
NWL=790.00

WISCONSIN CENTRAL RAILROAD

PETERSON ROAD

SEE HIGHWAY PLANS PREPARED BY MANHARD CONSULTING FOR PETERSON ROAD IMPROVEMENTS.

N

0 30 60 120
SCALE: 1"=60'

GRADING PLAN LEGEND

764	PROPOSED 1 FOOT CONTOURS
P	PROPOSED SPOT ELEVATION
F.F.	PROPOSED FINISHED FLOOR ELEVATION
G/F	PROPOSED GRADE AT FOUNDATION
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12-1-25	CURSORY REVIEW REVISIONS	JSE/GAW

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Construction Managers • Environmental Scientists • Landscape Architects • Planners

BATH CONCEPTS
VILLAGE OF LIBERTYVILLE, ILLINOIS
GRADING PLAN - SOUTH

PROJ. MGR.: JSE
PROJ. ASSOC.: MSL
DRAWN BY: MK
DATE: 09-19-25
SCALE: 1"=60'

SHEET
13 OF 25
BCALYIL01

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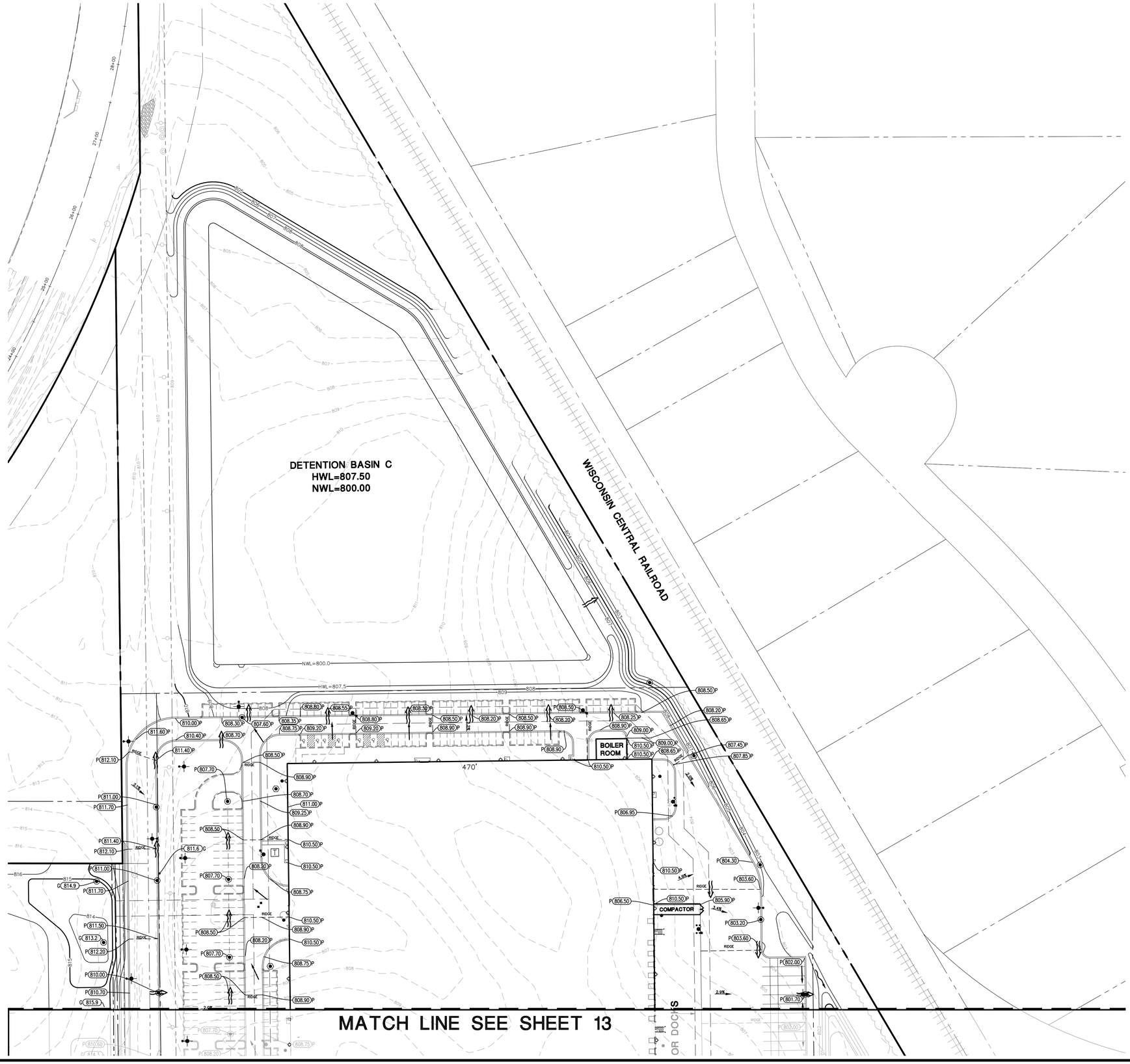
January 8, 2026 - 15:00 Dwg Name: P:\Projects\01\Civil\Eng\Promotional\Plan Set\GRDNG.dwg Updated By: dwatterworth



GRADING PLAN LEGEND

764	PROPOSED 1 FOOT CONTOURS
	PROPOSED SPOT ELEVATION
F.F.	PROPOSED FINISHED FLOOR ELEVATION
G/F	PROPOSED GRADE AT FOUNDATION
P	PROPOSED PAVEMENT ELEVATION
T/C	PROPOSED TOP OF CURB
T/W	PROPOSED TOP OF WALK
T/WALL	PROPOSED TOP OF WALL
M/E	MEET EXISTING
G	PROPOSED GROUND GRADE OR GROUND AT BASE OF RETAINING WALL
	PROPOSED DITCH OR SWALE
	PROPOSED DIRECTION OF FLOW
	OVERFLOW RELIEF SWALE
RIDGE	PROPOSED RIDGE LINE

GRADING NOTES:

1. PAVEMENT SLOPES THROUGH HANDICAP ACCESSIBLE PARKING AREAS SHALL BE 2.00% MAXIMUM IN ANY DIRECTION.
2. ALL HANDICAP RAMPS SHALL BE CONSTRUCTED WITH A MAXIMUM CROSS SLOPE OF 2.00% OR LESS.
3. MEET EXISTING GRADE AT PROPERTY LIMITS UNLESS NOTED OTHERWISE.
4. CONTRACTOR SHALL REFER TO THE SOIL EROSION AND SEDIMENT CONTROL PLAN AND DETAILS FOR CONSTRUCTION SCHEDULING AND EROSION CONTROL MEASURES TO BE INSTALLED PRIOR TO BEGINNING GRADING OPERATIONS.
5. THE CONTRACTOR SHALL CONTACT J.U.L.I.E. (1-800-892-0123) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
6. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
7. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITION OR BETTER.
8. ALL UNPAVED AREAS DISTURBED BY GRADING OPERATIONS SHALL RECEIVE 6 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH GOVERNING SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED.
9. EXISTING CONDITIONS REPRESENT SITE CONDITIONS BASED ON LAKE COUNTY GIS TOPOGRAPHY, VILLAGE UTILITY ATLAS, UTILITY RECORD DRAWINGS, AND PERVIOUS ENGINEERING PLAN DESIGN INFORMATION. CONTRACTOR SHALL INSPECT SITE PRIOR TO BIDDING WORK TO VERIFY ACTUAL FIELD CONDITIONS AS PORTIONS OF THE DEMOLITION WORK MAY HAVE SINCE BEEN COMPLETED. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLETE ALL DEMOLITION WORK AS PER PLANS TO PREPARE THE SITE FOR CONSTRUCTION OF PROPOSED IMPROVEMENTS.
10. TRANSITIONS FROM DEPRESSED CURB TO FULL HEIGHT CURB SHALL BE TAPERED AT 2H:1V UNLESS OTHERWISE NOTED.

DATE	REVISIONS	DRAWN BY
JSE/GAW	CURSORY REVIEW REVISIONS	JSE/GAW

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One Overlook Point, Suite 250, Lincolnshire, IL 60069 p:847.634.5500 f:847.634.0066 manhardcom
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Construction Managers • Environmental Scientists • Landscape Architects • Planners

BATH CONCEPTS
VILLAGE OF LIBERTYVILLE, ILLINOIS
GRADING PLAN - NORTH

PROJ. MGR.:	JSE
PROJ. ASSOC.:	MSL
DRAWN BY:	MK
DATE:	09-19-25
SCALE:	1"=60'

SHEET
14 OF 25
BCALYIL01

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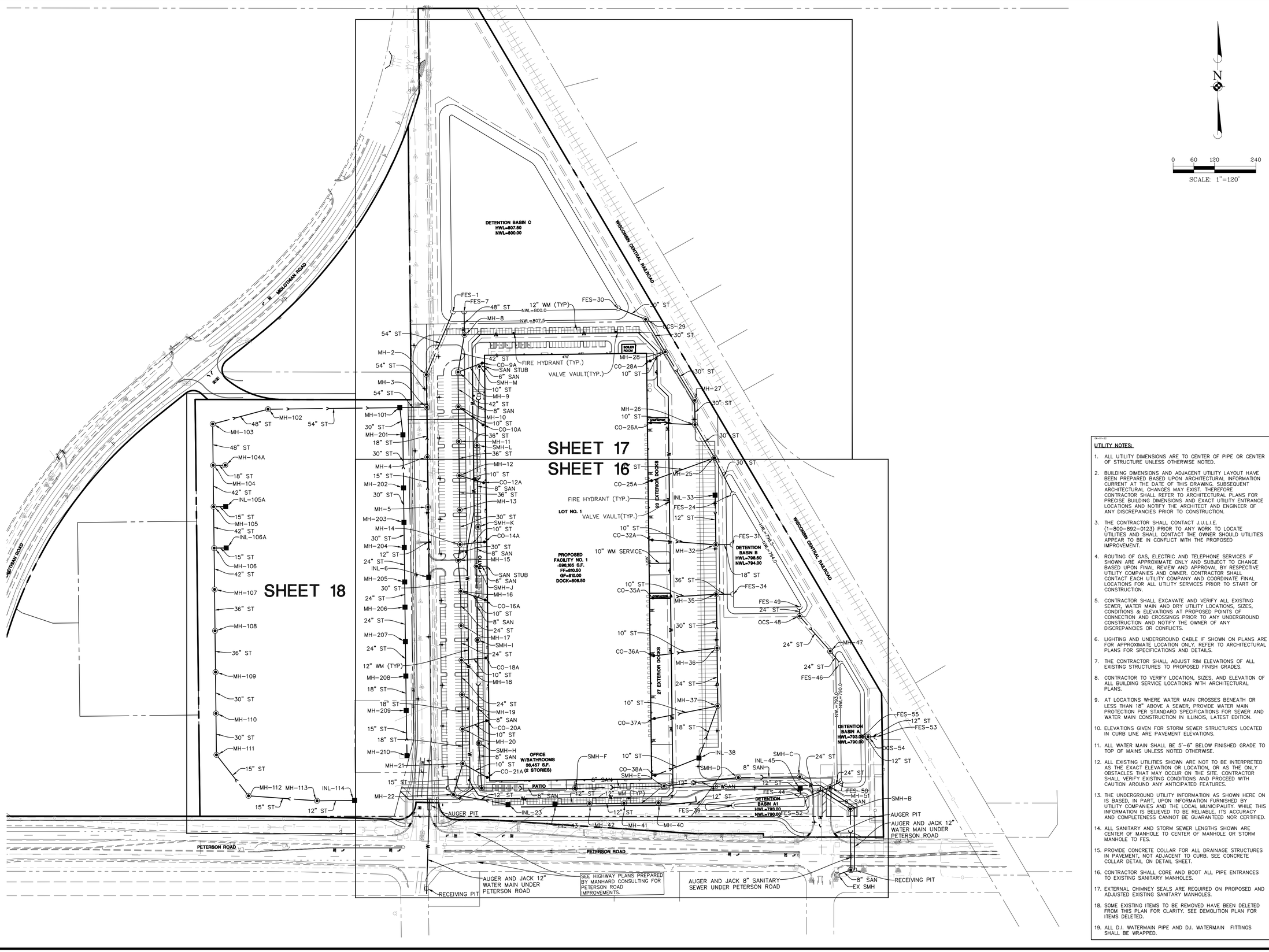

UTILITY NOTES:

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2. BUILDING DIMENSIONS AND ADJACENT UTILITY LAYOUT HAVE BEEN PREPARED BASED UPON ARCHITECTURAL INFORMATION CURRENT AT THE DATE OF THIS DRAWING. SUBSEQUENT ARCHITECTURAL CHANGES MAY EXIST. THEREFORE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS AND NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
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5. CONTRACTOR SHALL EXCAVATE AND VERIFY ALL EXISTING SEWER, WATER MAIN AND DRY UTILITY LOCATIONS, SIZES, CONDITIONS & ELEVATIONS AT PROPOSED POINTS OF CONNECTION AND CROSSINGS PRIOR TO ANY UNDERGROUND CONSTRUCTION AND NOTIFY THE OWNER OF ANY DISCREPANCIES OR CONFLICTS.
6. LIGHTING AND UNDERGROUND CABLE IF SHOWN ON PLANS ARE FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL PLANS FOR SPECIFICATIONS AND DETAILS.
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14. ALL SANITARY AND STORM SEWER LENGTHS SHOWN ARE CENTER OF MANHOLE TO CENTER OF MANHOLE OR STORM MANHOLE TO FES.
15. PROVIDE CONCRETE COLLAR FOR ALL DRAINAGE STRUCTURES IN PAVEMENT, NOT ADJACENT TO CURB. SEE CONCRETE COLLAR DETAIL ON DETAIL SHEET.
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17. EXTERNAL CHIMNEY SEALS ARE REQUIRED ON PROPOSED AND ADJUSTED EXISTING SANITARY MANHOLES.
18. SOME EXISTING ITEMS TO BE REMOVED HAVE BEEN DELETED FROM THIS PLAN FOR CLARITY. SEE DEMOLITION PLAN FOR ITEMS DELETED.
19. ALL D.I. WATERMAIN PIPE AND D.I. WATERMAIN FITTINGS SHALL BE WRAPPED.

DATE	REVISIONS	DRAWN BY
12-1-25	CURSORY REVIEW REVISIONS	JSE/GAW

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BATH CONCEPTS

VILLAGE OF LIBERTYVILLE, ILLINOIS

UTILITY PLAN - OVERALL

PROJ. MGR.:	JSE
PROJ. ASSOC.:	MSL
DRAWN BY:	GAW
DATE:	09-19-25
SCALE:	1"=120'

SHEET

15 OF 25

BCALYIL01

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January 8, 2026 - 14:56 Dwg Name: P:\Bcaly\001\dwg\Eng\Preliminary\Plan Set\UTILITY-OVERALL.dwg Updated By: dvasilewski

MATCH LINE SEE SHEET 17

MATCH LINE SEE SHEET 18

LOT NO. 1

PROPOSED FACILITY NO. 1
±596,165 S.F.
FF=810.50
GF=810.00
DOCK=806.50

OFFICE W/BATHROOMS 36,457 S.F. (2 STORIES)

20 EXTERIOR DOCKS

27 EXTERIOR DOCKS

COMPACTOR

PATIO

DETENTION BASIN B
HWL=798.50
NWL=794.00

DETENTION BASIN A
HWL=793.00
NWL=790.00

DETENTION BASIN A1
HWL=793.00
NWL=790.00

WISCONSIN CENTRAL RAILROAD

PETERSON ROAD

FIRE HYDRANT (TYP.)

VALVE VAULT(TYP.)

RELOCATE EXISTING HYDRANT

EX. 16" CLCJAWA WM

RELOCATE EXISTING VENT

STUB OUT SAN TO PROPERTY LINE

STUB OUT WM TO PROPERTY LINE

MONUMENT SIGN

AUGER PIT

EX. VENT

EX.16" BUTTERFLY VALVE VAULT

EX.AIR RELEASE VALVE/VAULT

INSTALL 4 HEAVY DUTY BOLLARDS AT EACH HYDRANT LOCATION ALONG THE TRUCK DOCK (TYP.)

AUGER AND JACK 12" WATER MAIN UNDER PETERSON ROAD

AUGER AND JACK 8" SANITARY SEWER UNDER PETERSON ROAD

SEE HIGHWAY PLANS PREPARED BY MANHARD CONSULTING FOR PETERSON ROAD IMPROVEMENTS.

RECEIVING PIT

EX SMH 788.60 G 784.60

N

0 30 60 120

SCALE: 1"=60'

09-19-25

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DRAWN BY	REVISIONS	DATE
JSE/GAW	CURSORY REVIEW REVISIONS	12-1-25

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BATH CONCEPTS

VILLAGE OF LIBERTYVILLE, ILLINOIS

UTILITY PLAN - SOUTH

PROJ. MGR.:	JSE
PROJ. ASSOC.:	MSL
DRAWN BY:	MK
DATE:	09-19-25
SCALE:	1"=60'

SHEET 16 OF 25

BCALYIL01

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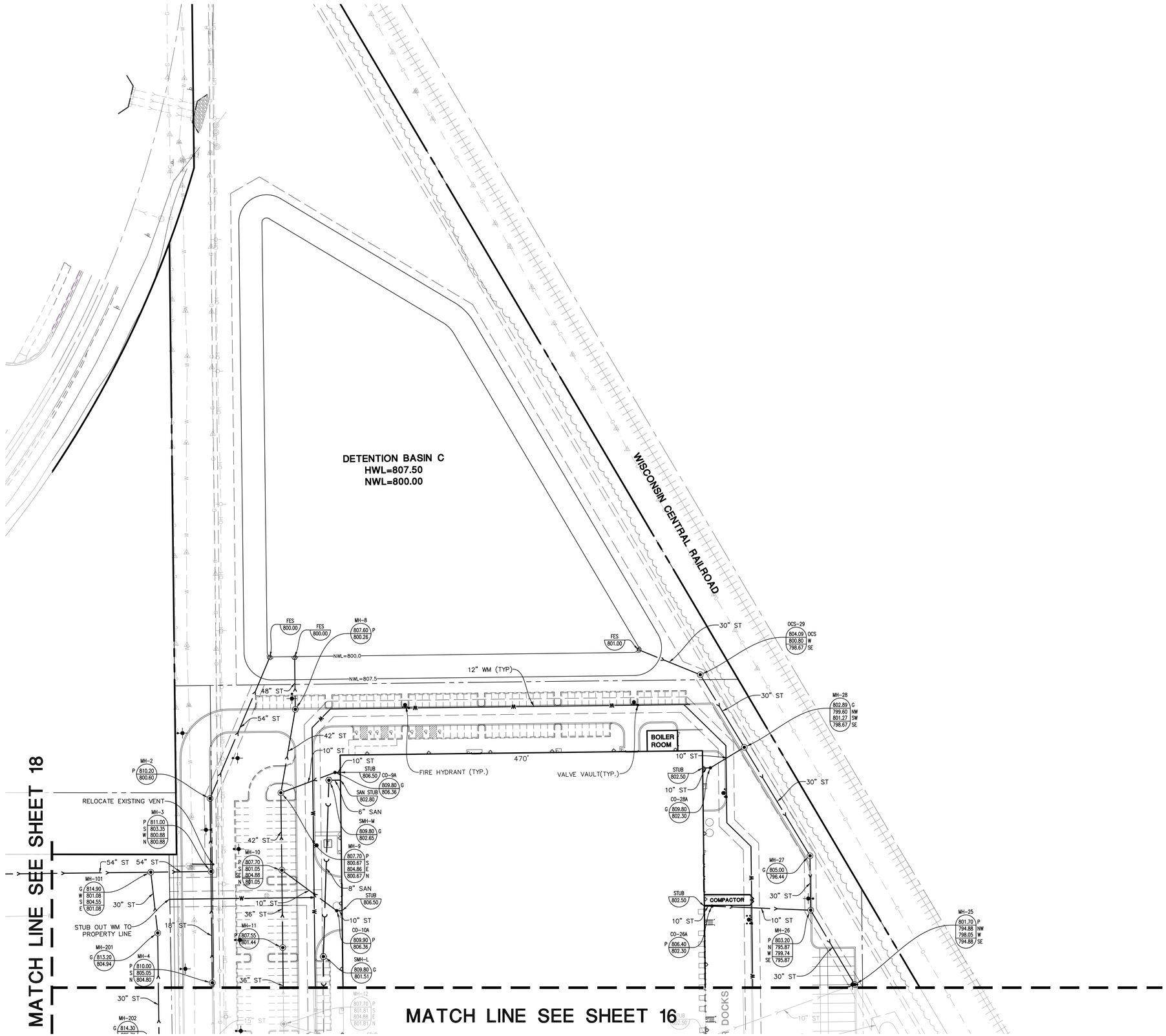
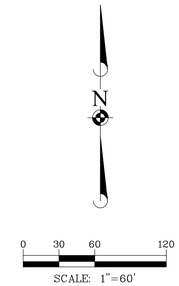
January 5, 2026 - 11:59 Data Name: P:\Bcal\01\Civil\Exh\Preliminary\Plan Set\UTILITY.dwg Updated By: dwisniewski





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12-1-25	CURSORY REVIEW REVISIONS	JSE/GAW

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BATH CONCEPTS
VILLAGE OF LIBERTYVILLE, ILLINOIS
UTILITY PLAN - NORTH

PROJ. MGR.:	JSE
PROJ. ASSOC.:	MSL
DRAWN BY:	MK
DATE:	09-19-25
SCALE:	1"=60'

SHEET
17 OF 25
BCALYILO1

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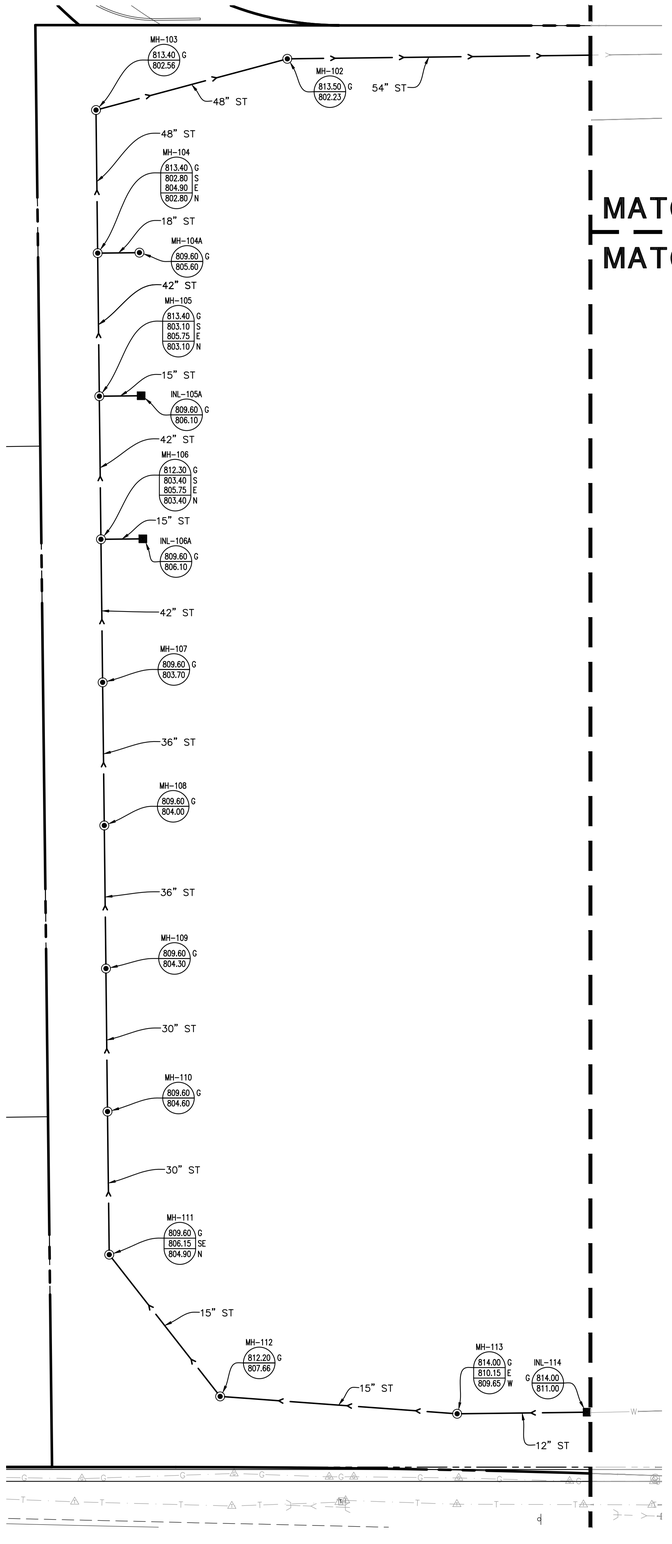

MATCH LINE SEE SHEET 17

MATCH LINE SEE SHEET 16

N

0 30 60 120

SCALE: 1"=60'

9-17-25

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BATH CONCEPTS

VILLAGE OF LIBERTYVILLE, ILLINOIS

UTILITY PLAN - WEST

PROJ. MGR.:	JSE
PROJ. ASSOC.:	MSL
DRAWN BY:	MSL
DATE:	09-19-25
SCALE:	1"=60'

SHEET

18 OF 25

BCALYIL01

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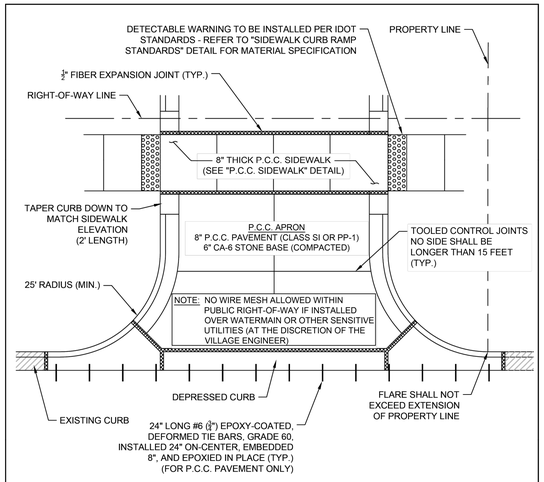
January 5, 2026 - 10:05 Dwg. Name: P:\Bcal\01\Varq\Cad\Preliminary\Plan Set\UTILITY.dwg Updated By: dwaldelewski



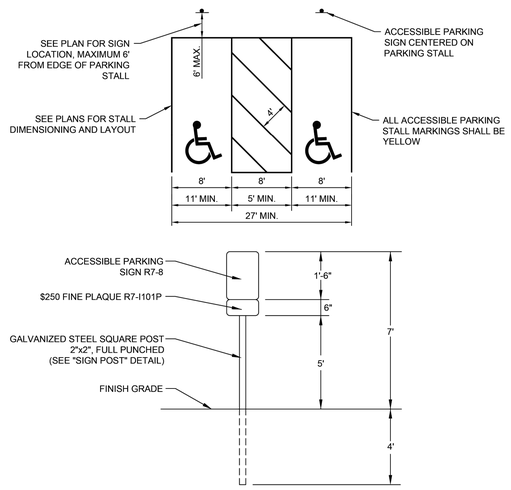
NOTES:

1. ALL EXISTING ABUTTING EXPANSION JOINT MATERIAL SHALL BE REMOVED AND REPLACED.
2. WHITE CURING COMPOUND, PER IDOT SECTION 1022.01(C), SHALL BE APPLIED TO THE CONCRETE IMMEDIATELY AFTER IT HAS BEEN FINISHED OR PER MANUFACTURER'S RECOMMENDATION.
3. DRIVEWAY FLARE SHALL BE A MAXIMUM OF 2-FEET WIDE AS MEASURED FROM THE SIDEWALK TO THE BACK-OF-CURB. IF NO SIDEWALK EXISTS, THE WIDTH OF THE FLARE SHALL BE MEASURED FROM A POINT 6-FEET BEHIND THE BACK-OF-CURB TO THE BACK-OF-CURB.
4. PRE-POUR INSPECTION REQUIRED BY THE ENGINEERING DIVISION PRIOR TO PLACEMENT OF PAVEMENT AFTER FORMING IS IN PLACE. PLEASE CALL (847) 918-2020 TO SCHEDULE INSPECTIONS.

COMMERCIAL DRIVEWAY APRON

Libertyville

LAST REVISED: 02/15/2023 | STANDARD DETAIL # PAV - 08



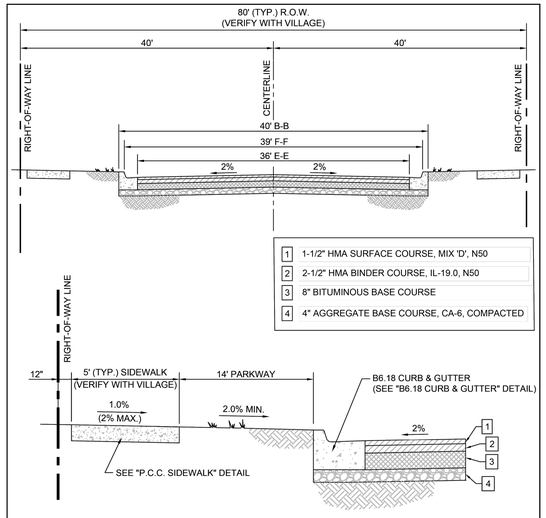
NOTES:

1. ALL ACCESSIBLE PARKING PAVEMENT MARKINGS TO BE "YELLOW" IN COLOR.
2. THE SIGN MUST BE SUPPLEMENTED WITH A "VAN ACCESSIBLE" SIGN AS APPLICABLE.
3. THE ACCESS AISLE MAY BE ON EITHER SIDE OF THE PARKING STALL, EXCEPT FOR ANGLED PARKING SPACES WHICH SHALL HAVE THE ACCESS AISLE LOCATED ON THE PASSENGER SIDE OF THE PARKING STALL.

ACCESSIBLE PARKING & SIGNAGE

Libertyville

LAST REVISED: 02/15/2023 | STANDARD DETAIL # PAV - 09



NOTES:

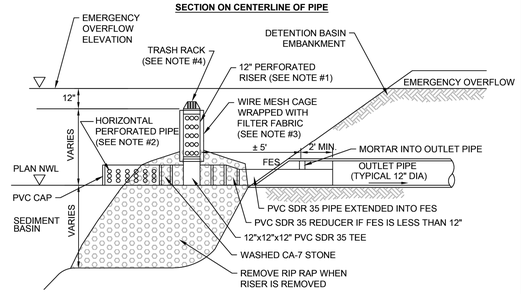
1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. SIDEWALK WIDTHS & CURB TYPES SHALL BE CONSISTENT WITH ADJACENT AREAS AND MUST BE COORDINATED WITH THE VILLAGE OF LIBERTYVILLE DURING INITIAL DESIGN STAGES.

TYPICAL NON-RESIDENTIAL ROADWAY SECTION

Libertyville

LAST REVISED: 02/15/2023 | STANDARD DETAIL # PAV - 13

SECTION ON CENTERLINE OF PIPE



MAINTENANCE:

1. REPLACE FILTER FABRIC.
2. CLEAN OR REPLACE STONE.
3. REMOVE TRASH.
4. CLEAN OUTFALL.

NOTES:

1. 12" DIAMETER PERFORATED RISER SHALL CONSIST OF THIRTY 1" DIAMETER HOLES (± 24 SQ INCHES) PER LINEAR FOOT OF PIPE. USE OF 1"x4" SLOTS ARE PERMITTED. TOP OF PERFORATED RISER TO BE SET 12" BELOW EMERGENCY OVERFLOW ELEVATION. (ADS HICKENBOTTOM 1"/SLOTTED HOLE MODEL OR APPROVED EQUAL)
2. PROVIDE 4 LINEAR FEET OF HORIZONTAL PERFORATED PIPE. CHICKEN COOP WIRE SHALL BE WRAPPED DIRECTLY AROUND HORIZONTAL PERFORATED PIPE A MINIMUM OF THREE TIMES AND FASTENED WITH WIRE OR PLASTIC TIES. THEN CHICKEN COOP WIRE SHALL BE WRAPPED A MINIMUM OF TWO TIMES WITH WEVTEX 403 FABRIC OR APPROVED EQUAL. FABRIC SHALL BE FASTENED TO EACH END OF PVC PIPE AND AT 12" SPACING USING PLASTIC TIES.
3. 15"-18" DIAMETER WIRE MESH CAGE WRAPPED A MINIMUM OF TWO TIMES WITH WEVTEX 403 WOVEN FABRIC OR APPROVED EQUAL. FABRIC SHALL BE FASTENED TO WIRE MESH CAGE ONLY WITH WIRE OR PLASTIC TIES. WIRE CAGE TO BE SET INTO WASHED CA-7 STONE AND SIZED TO MATCH TOP OF PERFORATED RISER. WIRE CAGE MAY BE CONSTRUCTED USING FOUR LAYERS OF CHICKEN COOP WIRE FASTENED TO ITSELF OR AN 18" DIAMETER REBAR LIGHT STANDARD CAGE WRAPPED TWICE WITH CHICKEN COOP WIRE.
4. METAL TRASH RACK SHALL FIT FIRMLY AND CONSIST OF 12" ADS BAR GUARD. (NEENAH R-4351-B OR APPROVED EQUAL)
5. ALL PIPE AND FITTINGS MAY BE CONSTRUCTED OF STANDARD PVC SDR 35 PIPE. LOCAL SUPPLIERS ARE ADVANCED DRAINAGE SYSTEMS, INC (ADS) AND ERO-TEX.
6. CONTRACTOR TO MAINTAIN RISER SUCH THAT THE POND CAN RETURN TO NWL.

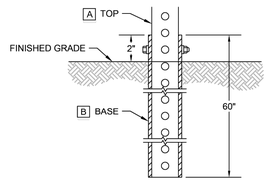
TEMPORARY PERFORATED RISER

Libertyville

LAST REVISED: 02/15/2023 | STANDARD DETAIL # EROS - 03

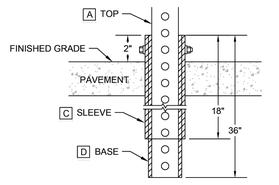
ALL SIGN POSTS TO BE GALVANIZED STEEL SQUARE POSTS, 2"x2", FULL PUNCHED.

GROUND MOUNT DETAIL



A	TOP - 2" x 2" x VARIABLE LENGTH
B	BASE FOR GROUND MOUNT - 2" x 2" x 60"
C	SLEEVE FOR PAVEMENT MOUNT - 2-1/2" x 2-1/2" x 18"
D	BASE FOR PAVEMENT MOUNT - 2-1/4" x 2-1/4" x 36"

PAVEMENT MOUNT DETAIL



NOTES:

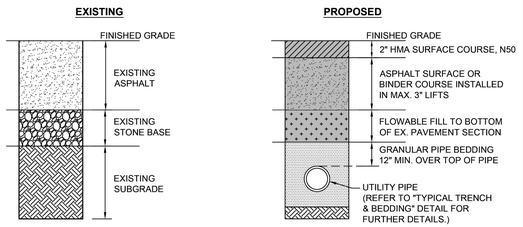
1. INSTALLATION HEIGHTS OF ALL SIGNAGE SHALL BE IN ACCORDANCE STATE OR OTHER APPLICABLE REGULATIONS.
2. ALL BOLTS AND OTHER ASSEMBLY MATERIAL SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. IF A SURFACE ANCHOR BOLT MOUNT IS REQUIRED, INSTALLATION SHALL BE PERFORMED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

SIGN POST

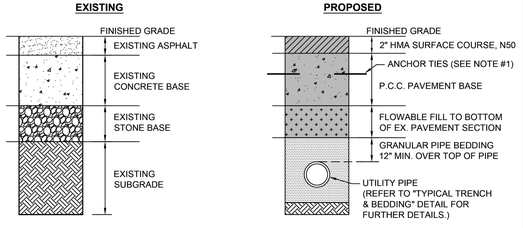
Libertyville

LAST REVISED: 02/15/2023 | STANDARD DETAIL # PAV - 10

ROADWAYS WITH FULL-DEPTH ASPHALT



ROADWAYS WITH CONCRETE BASE



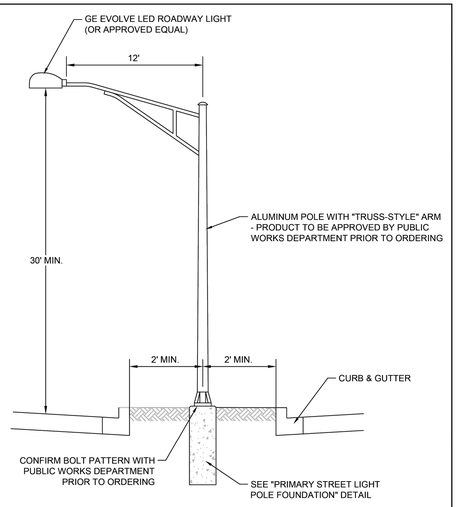
NOTES:

1. 1/2" EPOXY-COATED THREADED BARS TO BE EMBEDDED 12" AND SPACED AT 36" MAX. ON-CENTER TO BE PROVIDED BETWEEN NEW CONCRETE AND EXISTING CONCRETE BASES (FOR CONCRETE BASE ROADS ONLY).
2. INSPECTIONS ARE REQUIRED BY THE ENGINEERING DIVISION FOR EACH LAYER OF PAVEMENT RESTORATION. PLEASE CONTACT (847) 918-2020 TO SCHEDULE INSPECTIONS ACCORDINGLY.
3. REFER TO "TYPICAL TRENCH & BEDDING" DETAIL FOR FURTHER INFORMATION ON SEWER INSTALLATIONS.

UTILITY TRENCH PAVEMENT PATCH

Libertyville

LAST REVISED: 02/15/2023 | STANDARD DETAIL # PAV - 11



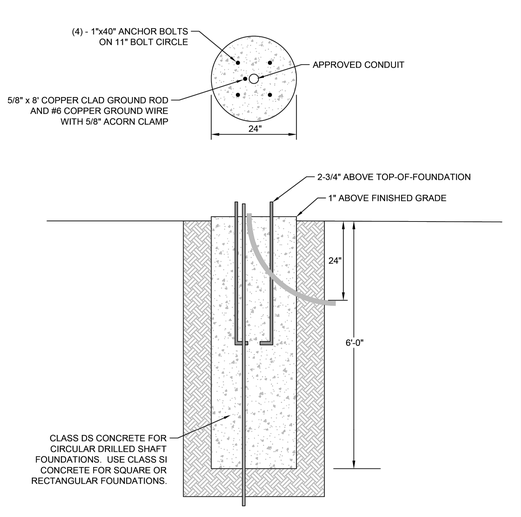
NOTES:

1. VERIFY FIXTURE & POLE SPECIFICATION WITH THE VILLAGE PRIOR TO ORDERING.
2. SETBACK SHALL BE 2' FROM BACK-OF-CURB IF CURB IS PRESENT OR 4' FROM EDGE-OF-PAVEMENT IF NO CURB IS PRESENT.
3. AT ROADWAY INTERSECTIONS WITH SIGNS, LIGHT POLES SHALL BE SET BACK AS TO NOT OBSTRUCT STOP SIGNS, ETC.
4. EACH POLE SHALL HAVE INDIVIDUAL FUSE PROTECTION, SIZED APPROPRIATELY FOR THE FIXTURE
5. EACH STREETLIGHT CIRCUIT MUST HAVE A STREET LIGHT CONTROL BOX BEFORE IT CONNECTS TO THE COMED POWER SOURCE. REFER TO THE VILLAGE'S "STREET LIGHTING CONTROL BOX" DETAIL.

PRIMARY STREET LIGHT

Libertyville

LAST REVISED: 02/15/2023 | STANDARD DETAIL # SL - 02



NOTE:

1. REFER TO "PRIMARY STREET LIGHT" DETAIL FOR FURTHER INFORMATION ON POLE AND LIGHT FIXTURE.

PRIMARY STREET LIGHT POLE FOUNDATION

Libertyville

LAST REVISED: 02/15/2023 | STANDARD DETAIL # SL - 03

SHOULD A CONFLICT ARISE BETWEEN MANHARD DETAILS AND THE VILLAGE DETAILS, THE VILLAGE DETAILS SHALL TAKE PRECEDENCE.

Manhard CONSULTING
One Overlook Point, Suite 250, Lincolnshire, IL 60069 | p:847.634.0200 | f:847.634.0066 | manhard.com
Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

DRAWN BY	DATE	REVISIONS
JSE/GAW	12-1-25	CURSORY REVIEW REVISIONS

BATH CONCEPTS
VILLAGE OF LIBERTYVILLE, ILLINOIS
VILLAGE OF LIBERTYVILLE CONSTRUCTION DETAILS

PROJ. MGR.: JSE
PROJ. ASSOC.: MSL
DRAWN BY: MK
DATE: 09-19-25
SCALE: N.T.S.

SHEET 19 OF 25
BCALYIL01

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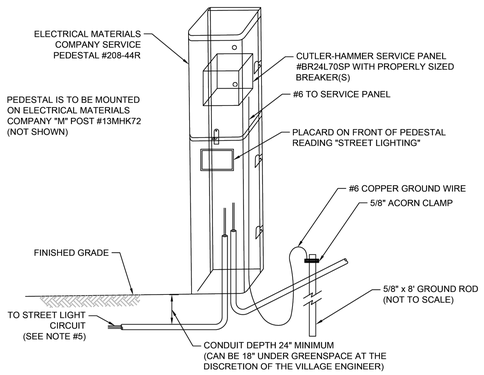
January 5, 2026 – 15:52 Dwg Name: P:\Regular\01\Data\Engr\Preliminary\Plan Set\DETAILS.dwg Updated By: dpostolowski



NOTES:

1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. NO DIRECT CONNECTION OF PUBLIC STREET LIGHT CABLING TO A COMED POWER SOURCE SHALL BE PERMITTED
3. A FULLY RATED SERVICE PANEL WITH 70 AMP BUS AND MAIN BONDING JUMPER SHALL BE PROVIDED WITHIN THE ELECTRICAL MATERIALS CO. SERVICE PEDESTAL. AN "M" POST SHALL BE PROVIDED FOR MOUNTING THE PEDESTAL. ANY OF THE PRODUCTS LISTED ABOVE MAY BE SUBSTITUTED WITH APPROVED EQUALS AT THE DISCRETION OF THE VILLAGE ENGINEER
4. THE PEDESTAL SHALL BE GROUNDED WITH A 5/8" x 8' COPPER CLAD GROUND ROD AND #6 COPPER GROUND WIRE WITH 5/8" ACORN CLAMP.
5. STREET LIGHTING CIRCUIT MUST BE RUN IN AN APPROVED CONDUIT, INCLUDING A PROPER EQUIPMENT GROUNDING CONDUCTOR.

STREET LIGHTING CONTROL BOX

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	SL - 04

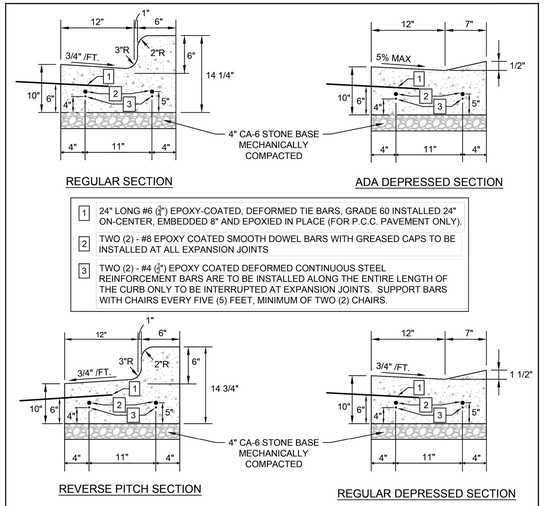
ITEM	FRAME & GRATE / LID (OR APPROVED EQUAL)	I.D.O.T. TYPE	DESCRIPTION	OPTIONS	APPLICABLE TO CURRENT PROJECT? "X"
WATERMAIN					
VALVE VAULT (MAINTAINED BY VILLAGE) FRAME & CLOSED LID	NEENAH R-1713	1	FLAT, ROUND, CLOSED LID	"VILLAGE OF LIBERTYVILLE" AND "WATER" IMPRINTED ON COVER. LID SHALL HAVE CONCEALED PICKHOLE.	
VALVE VAULT (PRIVATELY MAINTAINED) FRAME & CLOSED LID	NEENAH R-1713	1	FLAT, ROUND, CLOSED LID	ONLY "WATER" IMPRINTED ON COVER. LID SHALL HAVE CONCEALED PICKHOLE.	
SANITARY SEWER					
SANITARY MANHOLE (MAINTAINED BY VILLAGE) FRAME & CLOSED LID	NEENAH R-1713	1	FLAT, ROUND, CLOSED LID	"VILLAGE OF LIBERTYVILLE" AND "SANITARY" IMPRINTED ON COVER. LID SHALL HAVE CONCEALED PICKHOLE.	
SANITARY MANHOLE (PRIVATELY MAINTAINED) FRAME & CLOSED LID	NEENAH R-1713	1	FLAT, ROUND, CLOSED LID	ONLY "SANITARY" IMPRINTED ON COVER. LID SHALL HAVE CONCEALED PICKHOLE.	
STORM SEWER					
STORM MANHOLE (MAINTAINED BY VILLAGE) FRAME & CLOSED LID	NEENAH R-1713	1	FLAT, ROUND, CLOSED LID	"VILLAGE OF LIBERTYVILLE" AND "STORM" IMPRINTED ON COVER. LID SHALL HAVE CONCEALED PICKHOLE.	
STORM MANHOLE (PRIVATELY MAINTAINED) FRAME & CLOSED LID	NEENAH R-1713	1	FLAT, ROUND, CLOSED LID	ONLY "STORM" IMPRINTED ON COVER. LID SHALL HAVE CONCEALED PICKHOLE.	
FLAT, ROUND, OPEN GRATE *	NEENAH R-1713	1	FLAT, ROUND, OPEN TYPE D GRATE		
CURB DRAINAGE STRUCTURE (FOR BARRIER CURB) *	NEENAH R-3278-A (IN ROADWAY SAGS)	3	INLET FRAME & CURB BOX FOR BARRIER CURB, RECTANGULAR	STANDARD GRATE	
	NEENAH R-3278-AL (DIRECTIONAL FLOW)	3V		TYPE L VANE GRATE	
CURB DRAINAGE STRUCTURE (FOR ROLL-TYPE CURB) *	NEENAH R-3501-P	N/A	INLET FRAME ROLL-TYPE CURB, RECTANGULAR, OPEN GRATE		
BEEHIVE GRATE *	NEENAH R-4340-B	8	BEEHIVE TYPE INLET, ROUND, OPEN GRATE	FOR LAWN AREAS ONLY	

* **NOTE: DRAINAGE STRUCTURES SHALL HAVE "NO DUMPING - DRAINS TO RIVER" IMPRINTED ON FRAME/GRATE**

FRAME & GRATE / LID STANDARDS

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	UTIL - 02



1	24" LONG #6 ($\frac{3}{4}$") EPOXY-COATED, DEFORMED TIE BARS, GRADE 60 INSTALLED 24" ON-CENTER, EMBEDDED 8" AND EPOXIED IN PLACE (FOR P.C.C. PAVEMENT ONLY).
2	TWO (2) - #8 EPOXY COATED SMOOTH DOWEL BARS WITH GREASED CAPS TO BE INSTALLED AT ALL EXPANSION JOINTS
3	TWO (2) - #4 ($\frac{1}{2}$") EPOXY COATED DEFORMED CONTINUOUS STEEL REINFORCEMENT BARS ARE TO BE INSTALLED ALONG THE ENTIRE LENGTH OF THE CURB ONLY TO BE INTERRUPTED AT EXPANSION JOINTS. SUPPORT BARS WITH CHAIRS EVERY FIVE (5) FEET, MINIMUM OF TWO (2) CHAIRS.

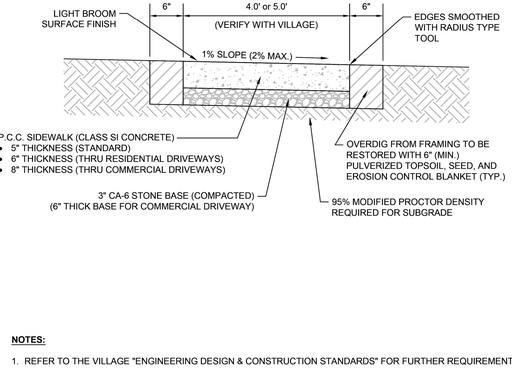
NOTES:

1. EXPANSION JOINTS TO BE SET AT ALL PC'S, PT'S, FIVE (5) FEET ON EITHER SIDE OF ANY FRAMES, AND AT 45' MAX. INTERVALS. ADDITIONAL LOCATIONS MAY BE SPECIFIED BY THE ENGINEER.
2. CONTRACTION JOINTS ARE TO BE CONSTRUCTED AT 15' MAX. INTERVALS AND AT ADDITIONAL LOCATIONS AS MAY BE SPECIFIED BY ENGINEER.
3. ANY CONTINUOUS CURB REMOVALS OF TEN (10) FEET OR GREATER IN LENGTH SHALL HAVE CONTINUOUS STEEL REINFORCEMENT BARS PER [3] ABOVE. REMOVALS LESS THAN TEN (10) FEET IN LENGTH SHALL ONLY HAVE DOWEL BARS INSTALLED AT ENDS PER [2] ABOVE.

B6.12 CURB & GUTTER

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	PAV - 01



NOTES:

1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. PROVIDE $\frac{1}{2}$" THICK FIBER EXPANSION JOINTS AT POINTS ABUTTING CURB OR PAVEMENT AND AT 50-FOOT MAXIMUM INTERVALS.
3. CONTROL JOINTS SHALL BE $\frac{1}{4}$" TO $\frac{1}{2}$" WIDE AND 1/4 OF THE SIDEWALK THICKNESS DEEP. THE EDGE OF THE CONTROL JOINTS SHALL BE GIVEN A $\frac{1}{4}$" RADIUS.
4. CONTROL JOINTS TO BE PROVIDED AT 5' ON-CENTER SPACING. SPACING CAN BE INCREASED FOR SIDEWALKS IN EXCESS OF 5-FOOT IN WIDTH AS DIRECTED BY THE ENGINEER.
5. PLACING, FINISHING, AND CURING OF P.C.C. SIDEWALK SHALL MEET THE REQUIREMENTS OF SECTION 424 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

P.C.C. SIDEWALK

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	PAV - 05

ILLINOIS DEPARTMENT OF TRANSPORTATION (I.D.O.T.) STANDARDS TO BE UTILIZED FOR ALL CURB RAMPS.

PLEASE "X" ANY STANDARDS LISTED BELOW THAT ARE APPLICABLE TO THIS PROJECT, AND INCLUDE THE CORRESPONDING I.D.O.T. STANDARD DETAIL ON THE PLANS.

STANDARD	DESCRIPTION	APPLICABLE TO CURRENT PROJECT? "X"
424001	PERPENDICULAR RAMPS FOR SIDEWALKS	
424006	DIAGONAL CURB RAMPS FOR SIDEWALKS	
424011	CORNER PARALLEL CURB RAMPS FOR SIDEWALKS	
424016	MID-BLOCK CURB RAMPS FOR SIDEWALKS	
424021	DEPRESSED CORNER FOR SIDEWALKS	
424026	ENTRANCE / ALLEY PEDESTRIAN CROSSINGS	
424031	MEDIAN PEDESTRIAN CROSSINGS	

NOTES:

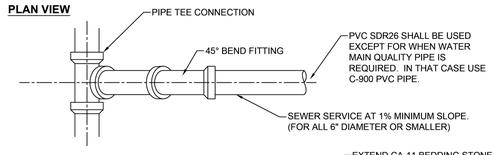
1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. ALL DETECTABLE WARNINGS ON PUBLIC SIDEWALK SHALL BE ARMOR TILE "CAST IN PLACE" POLYMER COMPOSITE, "BRICK RED" COLOR, OR APPROVED EQUAL
3. USE LATEST REVISION OF STANDARDS.

SIDEWALK CURB RAMP STANDARDS

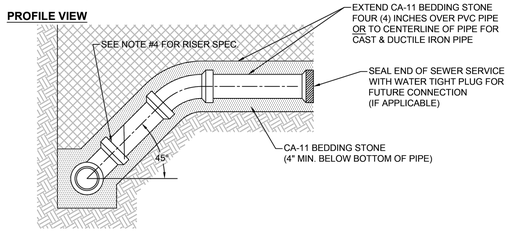
Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	PAV - 06

PLAN VIEW



PROFILE VIEW



NOTES:

1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. TRENCH BACKFILL FOR PAVED AREAS SHALL BE CA-6 CRUSHED LIMESTONE OR APPROVED EQUAL.
3. TRENCH BACKFILL FOR NON-PAVED AREAS SHALL BE FINELY DIVIDED EXCAVATED MATERIAL FREE OF ROCKS AND DEBRIS.
4. RISER REQUIRED WHEN SEWER DEPTH EXCEEDS NINE (9) FEET. MAXIMUM SLOPE OF 1:1 ON RISERS.
5. FOR DEVELOPMENTS WITH NEW MAIN CONSTRUCTION, A TEE OR WYE CONNECTION SHALL BE PROVIDED.
6. FOR PROPERTIES WITH NO EXISTING SERVICE LINE THAT ARE CONNECTING TO AN EXISTING MAIN, THE CONNECTION SHALL BE MADE VIA A ROMAC CB OR FORD FSS SEWER SADDLE.

FOR PROPERTIES WITH AN EXISTING SERVICE:

1. IF EXISTING SERVICE IS CLAY, THE EXISTING WYE OR TEE CONNECTION AT THE MAIN MUST BE REMOVED AND REPLACED ENTIRELY.
2. IF EXISTING SERVICE IS PVC OR IRON, SEWER TELEVISING VIDEOS OF THE ENTIRE SERVICE CAN BE PROVIDED TO THE VILLAGE FOR REVIEW AND DETERMINATION OF POSSIBLE RE-USE.
3. IF NEW SERVICE IS PROPOSED, THE CONNECTION TO THE EXISTING MAIN SHALL BE ONE OF THE FOLLOWING:
   - 3.1. NEW PVC WYE OR TEE CONNECTION INSTALLED ALONG EXISTING MAIN; OR
   - 3.2. ROMAC CB OR FORD FSS SEWER SADDLE ON EXISTING MAIN (IF PROPOSED AT DIFFERENT LOCATION THAN EXISTING CONNECTION); OR
   - 3.3. LMT STYLE SADDLE SYSTEM INSTALLATION (OR APPROVED EQUAL) WHEN TAPPING A LINED SANITARY MAIN.

SANITARY SERVICE

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	SAN - 03

ILLINOIS DEPARTMENT OF TRANSPORTATION (I.D.O.T.) STANDARDS TO BE UTILIZED FOR ALL STORM MANHOLES.

PLEASE "X" ANY STANDARDS LISTED BELOW THAT ARE APPLICABLE TO THIS PROJECT, AND INCLUDE THE CORRESPONDING I.D.O.T. STANDARD DETAIL ON THE PLANS.

STANDARD	DESCRIPTION	APPLICABLE TO CURRENT PROJECT? "X"
602401	MANHOLE TYPE A, 4' DIAMETER	
602402	MANHOLE TYPE A, 5' DIAMETER	
602406	MANHOLE TYPE A, 6' DIAMETER	
602411	MANHOLE TYPE A, 7' DIAMETER	
602416	MANHOLE TYPE A, 8' DIAMETER	
602421	MANHOLE TYPE A, 9' DIAMETER	
602426	MANHOLE TYPE A, 10' DIAMETER	
602601	PRECAST REINFORCED CONCRETE FLAT SLAB TOP	

NOTES:

1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. USE LATEST REVISION OF STANDARDS.

STORM MANHOLE STANDARDS

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	STM - 01

ILLINOIS DEPARTMENT OF TRANSPORTATION (I.D.O.T.) STANDARDS TO BE UTILIZED FOR ALL STORM CATCH BASINS.

PLEASE "X" ANY STANDARDS LISTED BELOW THAT ARE APPLICABLE TO THIS PROJECT, AND INCLUDE THE CORRESPONDING I.D.O.T. STANDARD DETAIL ON THE PLANS.

STANDARD	DESCRIPTION	APPLICABLE TO CURRENT PROJECT? "X"
602001	CATCH BASIN, TYPE A	
602011	CATCH BASIN, TYPE C	
602601	PRECAST REINFORCED CONCRETE FLAT SLAB TOP	

NOTES:

1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. USE LATEST REVISION OF STANDARDS.

CATCH BASIN STANDARDS

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	STM - 02

SHOULD A CONFLICT ARISE BETWEEN MANHARD DETAILS AND THE VILLAGE DETAILS, THE VILLAGE DETAILS SHALL TAKE PRECEDENCE.

DATE	REVISIONS	DRAWN BY
12-1-25	CURSORY REVIEW REVISIONS	JSE/GAW

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Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

BATH CONCEPTS

VILLAGE OF LIBERTYVILLE, ILLINOIS

VILLAGE OF LIBERTYVILLE CONSTRUCTION DETAILS

PROJ. MGR.:	JSE
PROJ. ASSOC.:	MSL
DRAWN BY:	MK
DATE:	09-19-25
SCALE:	N.T.S.

SHEET

20 OF 25

BCALYIL01

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January 5, 2026 - 1:15:32 Dwg. Name: P:\Projects\Vgrk\Grafx\Presentation\Plan Set\DETAILS.dwg Updated By: dwalderewski

ILLINOIS DEPARTMENT OF TRANSPORTATION (I.D.O.T.) STANDARDS TO BE UTILIZED FOR ALL STORM INLETS.

PLEASE "X" ANY STANDARDS LISTED BELOW THAT ARE APPLICABLE TO THIS PROJECT, AND INCLUDE THE CORRESPONDING I.D.O.T. STANDARD DETAIL ON THE PLANS.

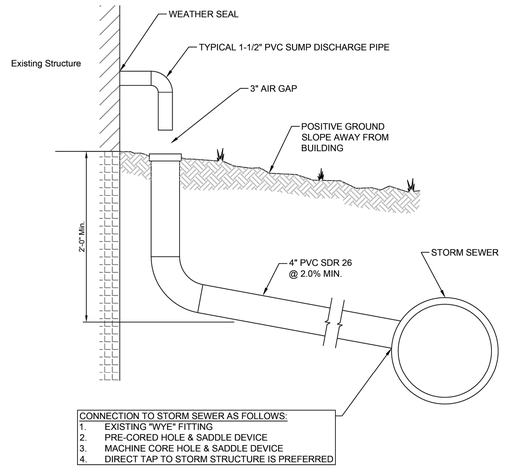
STANDARD	DESCRIPTION	APPLICABLE TO CURRENT PROJECT? "X"
602001	INLET, TYPE A	
602601	PRECAST REINFORCED CONCRETE FLAT SLAB TOP	

NOTES:
1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. USE LATEST REVISION OF STANDARDS.

STORM INLET STANDARDS

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	STM - 03

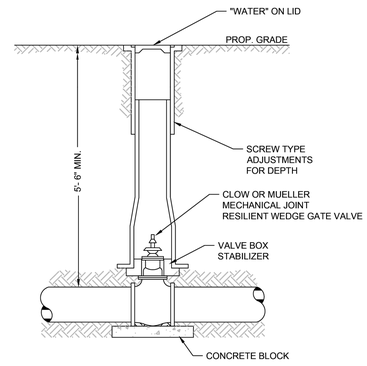


NOTES:
1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. CONTRACTOR ASSUMES FULL RESPONSIBILITY AND LIABILITY FOR ANY DAMAGE TO UTILITIES.
3. IN NO EVENT SHALL THE SUMP PUMP DISCHARGE INTO THE SANITARY SEWER SYSTEM.

SUMP PUMP CONNECTION

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	STM - 04

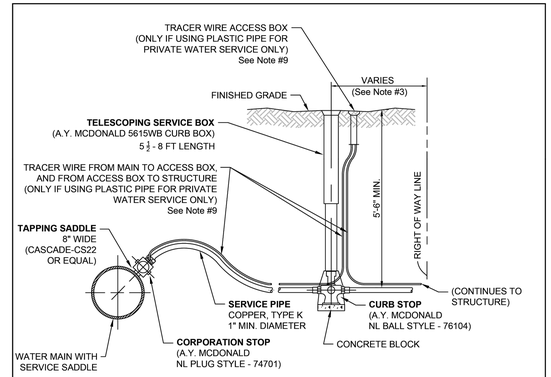


NOTES:
1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. VALVE BOXES SHALL BE TYLER #664, FOUR INCH (4") DIAMETER, SCREW TYPE, OR APPROVED EQUAL.
3. ALL BELOW GRADE FASTENERS TO BE STAINLESS STEEL:
   A. BOLTS & THREADED RODS - GRADE #304
   B. NUTS & WASHERS - GRADE #316

VALVE BOX

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	WM - 05

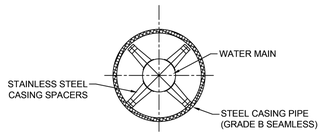


NOTES:
1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. THIS DETAIL APPLIES TO WATER SERVICES 2" IN DIAMETER OR SMALLER. ANY WATER SERVICE WHICH IS 3" OR LARGER SHALL CONFIRM TO VILLAGE WATERMAIN STANDARDS.
3. B-BOX SHALL BE LOCATED IN THE GRASS PARKWAY WITHIN THE PUBLIC RIGHT-OF-WAY (WHENEVER POSSIBLE) AND A MINIMUM OF 4 FEET BEHIND THE BACK-OF-CURB.
4. SERVICE PIPE TO BE WEAVED IN TRENCH TO ALLOW AT LEAST ONE (1) FOOT EXTRA LENGTH IN ITS LENGTH.
5. UPON COMPLETION OF WATER SERVICE CONSTRUCTION, ALL BOXES ARE TO BE FULLY EXTENDED AND LEFT PROTRUDING ABOVE THE FINISHED GRADE. FINAL ADJUSTMENT TO BE MADE DURING FINISHED GRADING OF PARKWAY.
6. COMPACTED GRANULAR TRENCH BACKFILL IS REQUIRED WHERE ANY PORTION OF THE EXCAVATION ACTIVITY IS WITHIN THREE (3) FEET HORIZONTALLY OF EXISTING OR PROPOSED PAVEMENTS, DRIVEWAYS, OR SIDEWALKS.
7. TAPS SHALL BE AT THE 10 O'CLOCK POSITION ON THE WATER MAIN AT LEAST 18" FROM ANY EXISTING TAP AND AT LEAST 12" FROM ANY BELL.
8. IF A NEW SERVICE CONNECTION OF 2" OR SMALLER IS BEING MADE TO AN EXISTING WATER MAIN THAT IS OWNED AND MAINTAINED BY THE VILLAGE, THE SERVICE TAP SHALL BE PERFORMED BY THE VILLAGE'S PUBLIC WORKS DEPARTMENT. THE VILLAGE SHALL BE CONTACTED ACCORDINGLY TO SCHEDULE THE REQUIRED TAP (CALL UTILITIES DIVISION AT 847-362-3434).
9. IF PLASTIC PIPE IS PROPOSED FROM THE B-BOX TO THE METER (I.E. THE "PRIVATE SERVICE"), TRACER WIRE IS REQUIRED AND SHALL COMPLY WITH THIS DETAIL. PLEASE NOTE: FROM THE B-BOX TO THE MAIN, THE SERVICE MATERIAL SHALL BE TYPE K COPPER.

WATER SERVICE

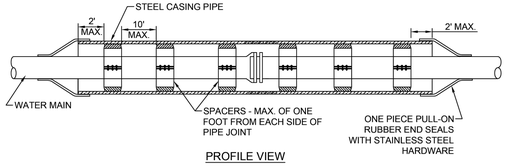
Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	WM - 06



CROSS-SECTION VIEW

WATERMAIN DIA.	MIN. CASING PIPE DIA.
6"	16"
8"	16"
10"	20"
12"	24"
16"	30"
24"	36"
30"	42"



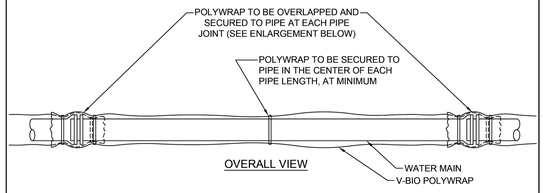
PROFILE VIEW

NOTES:
1. CASING PIPE TO BE BITUMINOUS COATED STEEL PER IDOT WALL THICKNESS GUIDE OR AS SPECIFIED ON THE PLANS.
2. CASING SPACERS SHALL BE STAINLESS STEEL BY CASCADE OR APPROVED EQUAL.
3. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, CASING SPACERS MUST BE CENTERED AND RESTRAINED.
4. JOINTS LOCATED INSIDE OF CASING PIPE MUST BE RESTRAINED SO TAHT JOINT PRESSURE LIMIT IS NO LESS THAN 350 PSI FOR PIPE LESS THAN OR EQUAL TO 24" DIAMETER AND NO LESS THAN 250 PSI FOR PIPE LARGER THAN 24" DIAMETER. NO FIELD CUT JOINTS WILL BE ALLOWED WITHOUT CONSENT OF ENGINEER.
5. ALL DUCTILE IRON WATER MAIN LOCATED INSIDE OF CASING PIPE MUST BE POLYETHYLENE ENCASED IN ACCORDANCE WITH THE VILLAGE STANDARDS.
6. CASING ENDS TO BE SEALED WITH ONE PIECE PULL-ON RUBBER END SEALS WITH STAINLESS STEEL HARDWARE, MODEL ESC BY CCI PIPELINE SYSTEMS OR APPROVED EQUAL.

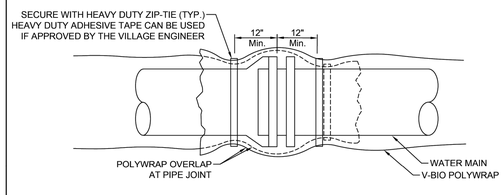
WATER MAIN CASING PIPE

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	WM - 07



OVERALL VIEW



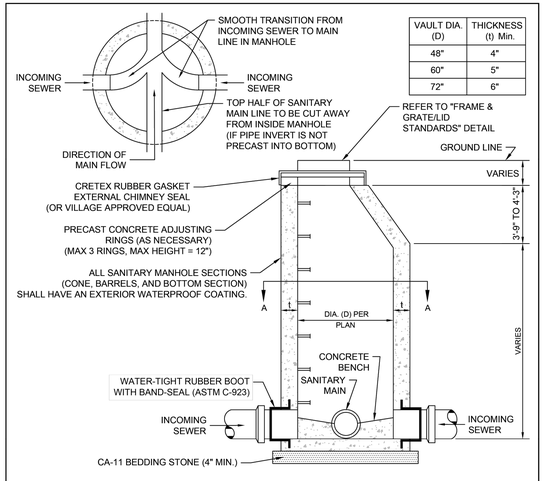
PIPE JOINT ENLARGEMENT VIEW

NOTES:
1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. ALL DIP WATER MAINS SHALL BE ENCASED IN AN 8-MIL V-BIO POLYWRAP, OR APPROVED EQUAL.
3. THE POLYWRAP IS TO BE SECURED TO THE PIPE IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS. MATERIAL AND INSTALLATION SHALL ADHERE TO APPLICABLE AWWA AND ANSI STANDARDS.
4. FOR INSTALLATION IN AREAS OF UNSUITABLE OR CORROSIVE SOILS, THE VILLAGE MAY REQUIRE WATER MAIN TO BE WRAPPED IN TWO LAYERS OF POLYETHYLENE ENCASEMENT (POLYWRAP).

WATER MAIN POLYETHYLENE ENCASEMENT

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	WM - 08



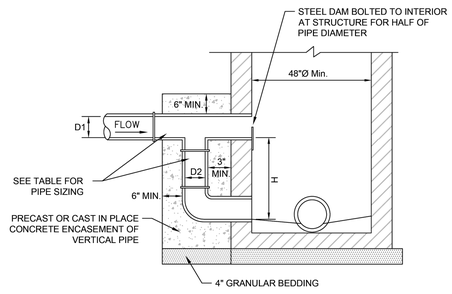
VAULT DIA. (D)	THICKNESS (t) Min.
48"	4"
60"	5"
72"	6"

NOTES:
1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. EXTERIOR NEOPRENE CHIMNEY SEAL STAINLESS STEEL TRIM PER ASTM C-923.
3. PIPE OPENINGS SHALL BE PRECAST INTO WALLS.
4. PRECAST REINFORCED CONCRETE SECTIONS PER ASTM C-478 WITH INTEGRAL PRECAST BOTTOMS.
5. ALL MANHOLE SECTIONS, ADJUSTING RINGS, AND FRAME SHALL BE SET IN FULL WITH PRE-FORMED BITUMINOUS GASKETS.
6. STEPS TO BE STEEL REINFORCED PLASTIC.
   A. EMBEDDED 3" INTO STRUCTURE WALL.
   B. SPACED AT 16" CENTER TO CENTER.
   C. FIRST STEP LOCATED 8"-12" BELOW FRAME.
7. PRECAST PCC BENCH SHALL EXTEND TO CROWN AND SLOPE TO OUTSIDE WALL, SMOOTH FINISH.

SANITARY MANHOLE

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	SAN - 01



INCOMING SEWER	DROP SEWER
D1	D2
6"	8"
8"	8"
10"	8"
12"	8"
15"	10"
18"	12"
21"	15"
24"	18"

NOTES:
1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. REFER TO 'SANITARY MANHOLE' DETAIL FOR MANHOLE SPECIFICATIONS.
3. IF H > 12 INCHES, A DROP PIPE TO SANITARY MAIN IS REQUIRED.
3. CONCRETE FOR ENCASEMENT SHALL BE 4,000 PSI @ 28 DAYS.
4. FORCEMAIN NOT ALLOWED AS INCOMING SEWER.
5. VILLAGE RESERVES THE RIGHT TO REQUIRE AN INTERNAL DROP CONNECTION BASED ON FIELD CONDITIONS OR OTHER CONSIDERATIONS.

SANITARY MANHOLE DROP CONNECTION

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	SAN - 02

SHOULD A CONFLICT ARISE BETWEEN MANHARD DETAILS AND THE VILLAGE DETAILS, THE VILLAGE DETAILS SHALL TAKE PRECEDENCE.

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Construction Managers • Environmental Scientists • Landscape Architects • Planners

DRAWN BY | REVISIONS | DATE

BATH CONCEPTS

VILLAGE OF LIBERTYVILLE, ILLINOIS

VILLAGE OF LIBERTYVILLE CONSTRUCTION DETAILS

PROJ. MGR.: JSE
PROJ. ASSOC.: MSL
DRAWN BY: ____
DATE: 09-19-25
SCALE: 1"=XX'

SHEET 21 OF 25

BCALYIL01

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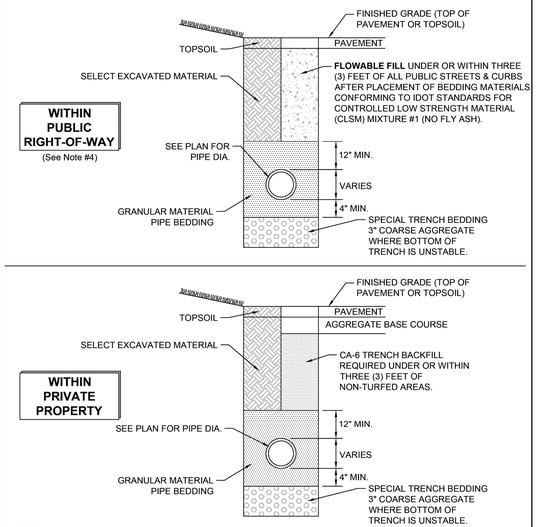
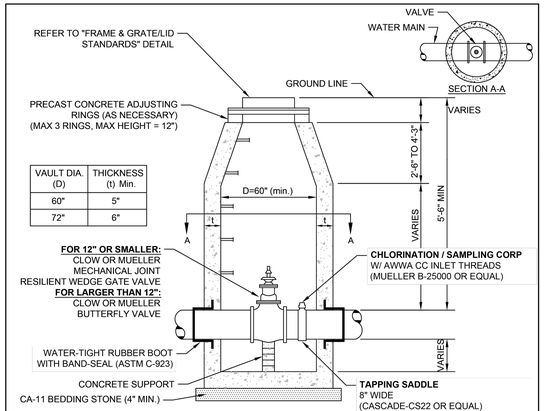


NOTES:
1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. SEE "UTILITY TRENCH PAVEMENT PATCH" DETAIL FOR FURTHER REQUIREMENTS ON PAVEMENT RESTORATION.
3. TRENCH WIDTH
   a.) MAXIMUM WIDTH (TRENCH DEPTH ≤ 5 FT) = 9" + O.D. + 9"
   b.) MAXIMUM WIDTH (TRENCH DEPTH > 5 FT) = 18" + O.D. + 18"
4. IF EXPRESSLY APPROVED BY THE VILLAGE ENGINEER, AND ON A CASE-BY-CASE BASIS, CA-6 MAY BE USED IN PLACE OF FLOWABLE FILL WITHIN THE PUBLIC RIGHT-OF-WAY

TYPICAL TRENCH & BEDDING

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	UTIL - 01



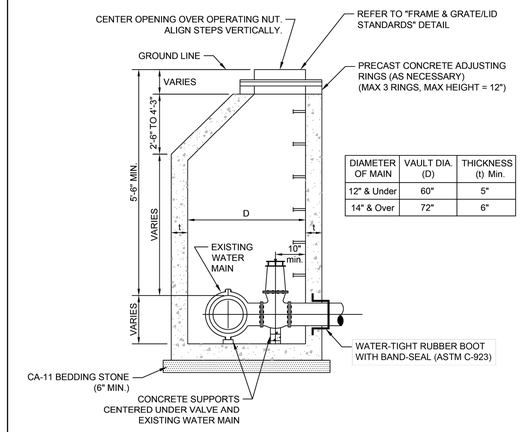
VAULT DIA. (D)	THICKNESS (t) Min.
60"	5"
72"	6"

NOTES:
1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. DIMENSION "D" SHALL BE 60" MINIMUM FOR ALL VALVE VAULTS.
3. PRECAST REINFORCED CONCRETE SECTIONS PER ASTM C-478 WITH INTEGRAL PRECAST BOTTOMS.
4. ALL MANHOLE SECTIONS, ADJUSTING RINGS, AND FRAME SHALL BE SET IN FULL WITH PRE-FORMED BITUMINOUS GASKETS.
5. MASTIC SHALL BE APPLIED OVER EXTERIOR OF JOINTS BETWEEN SECTIONS AND LIFT HOLES.
6. PIPE OPENINGS SHALL BE PRECAST INTO WALLS.
7. I.D.O.T #602601 FOR FLAT TOPS.
8. STEPS TO BE STEEL REINFORCED PLASTIC.
   A. EMBEDDED 3" INTO STRUCTURE WALL.
   B. SPACED AT 16" CENTER TO CENTER.
   C. FIRST STEP LOCATED 8"-12" BELOW FRAME.
7. ALL BELOW GRADE FASTENERS TO BE STAINLESS STEEL:
   A. BOLTS & THREADED RODS - GRADE #304
   B. NUTS & WASHERS - GRADE #316
8. VALVES 12" OR LARGER MAY REQUIRE OFFSET CONES.
9. IF VALVE VAULT IS TO BE PRIVATELY OWNED AND/OR MAINTAINED, LID SHALL ONLY READ "WATER" WITH NO REFERENCES TO THE VILLAGE. IF THE UTILITY IS TO BE MAINTAINED BY THE VILLAGE, THE COVER SHALL ALSO INCLUDE "VILLAGE OF LIBERTYVILLE" IMPRINTED AS WELL.

VALVE VAULT

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	WM - 01



DIAMETER OF MAIN	VAULT DIA. (D)	THICKNESS (t) Min.
12" & Under	60"	5"
14" & Over	72"	6"

NOTES:
1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. PRECAST REINFORCED CONCRETE SECTIONS PER ASTM C-478 WITH INTEGRAL PRECAST BOTTOMS.
3. ALL MANHOLE SECTIONS, ADJUSTING RINGS, AND FRAME SHALL BE SET IN FULL WITH PRE-FORMED BITUMINOUS GASKETS.
4. MASTIC SHALL BE APPLIED OVER EXTERIOR OF JOINTS BETWEEN SECTIONS AND LIFT HOLES.PIPE OPENINGS SHALL BE PRECAST INTO WALLS.
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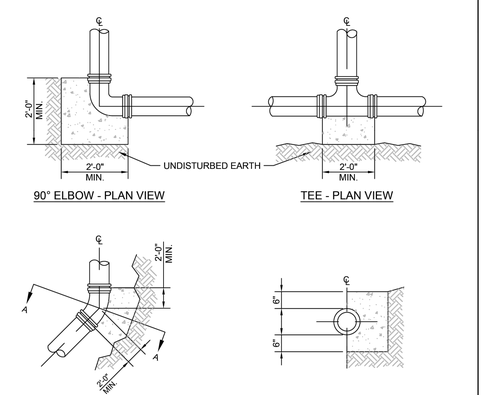
6. STEPS TO BE STEEL REINFORCED PLASTIC.
   A. IMBEDDED 3" INTO STRUCTURE WALL.
   B. SPACED AT 16" CENTER TO CENTER.
   C. FIRST STEP LOCATED 8"-12" BELOW FRAME.
7. ALL BELOW GRADE FASTENERS TO BE STAINLESS STEEL:
   A. BOLTS & THREADED RODS - GRADE #304
   B. NUTS & WASHERS - GRADE #316

PRESSURE CONNECTION & VAULT

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	WM - 02

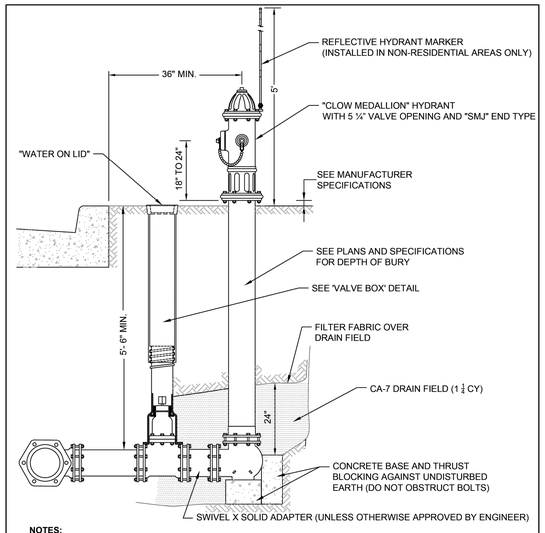


NOTES:
1. CONTRACTOR'S DISCRETION TO INSTALL MONOLITHIC CONCRETE BLOCK OR POURED-IN-PLACE CONCRETE THRUST BLOCKS.
2. ALL THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH.
3. ALL MONOLITHIC CONCRETE BLOCKS SHALL BE 3000 P.S.I. CONCRETE.
4. ALL POURED-IN-PLACE CONCRETE THRUST BLOCKS SHALL BE IDOT CLASS SI CONCRETE OR APPROVED EQUAL.

THRUST BLOCKING

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	WM - 03

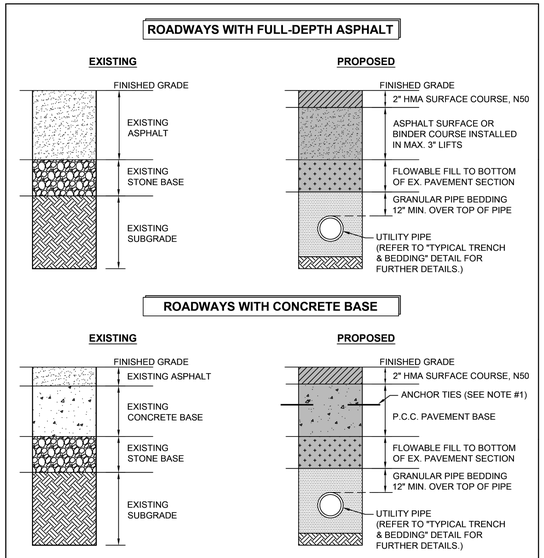


NOTES:
1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. ALL HYDRANTS TO INCLUDE THE FOLLOWING:
   A. 6" MECHANICAL JOINT CONNECTION WITH RETAINER GLANDS
   B. 5 ¼" VALVE OPENING
   C. ONE 4 ½" PUMPER NOZZLE AND TWO 2 ½" HOSE NOZZLES
   D. 6" AUXILIARY VALVE AND BOX WITH VALVE BOX STABILIZER ON LATERAL
3. ALL BELOW GRADE FASTENERS TO BE STAINLESS STEEL:
   A. BOLTS & THREADED RODS - GRADE #304
   B. NUTS & WASHERS - GRADE #316

HYDRANT ASSEMBLY

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	WM - 04

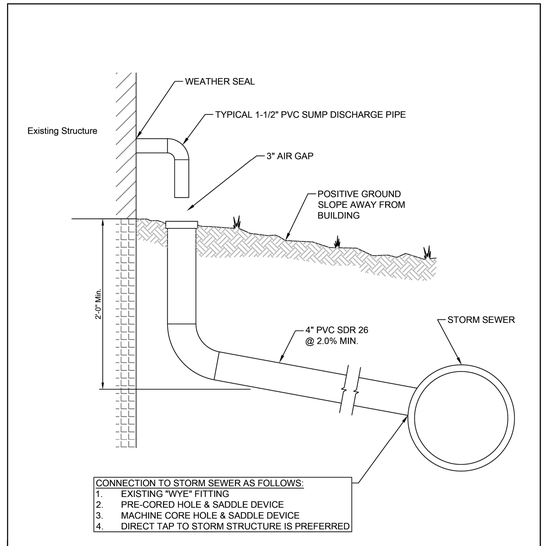


NOTES:
1. 1/2" EPOXY-COATED THREADED BARS TO BE EMBEDDED 12" AND SPACED AT 36" MAX. ON-CENTER TO BE PROVIDED BETWEEN NEW CONCRETE AND EXISTING CONCRETE BASES (FOR CONCRETE BASE ROADS ONLY).
2. INSPECTIONS ARE REQUIRED BY THE ENGINEERING DIVISION FOR EACH LAYER OF PAVEMENT RESTORATION. PLEASE CONTACT (847) 918-2020 TO SCHEDULE INSPECTIONS ACCORDINGLY.
3. REFER TO "TYPICAL TRENCH & BEDDING" DETAIL FOR FURTHER INFORMATION ON SEWER INSTALLATIONS.

UTILITY TRENCH PAVEMENT PATCH

Libertyville

LAST REVISED:	STANDARD DETAIL #
02/15/2023	PAV - 11



NOTES:
1. REFER TO THE VILLAGE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR FURTHER REQUIREMENTS.
2. CONTRACTOR ASSUMES FULL RESPONSIBILITY AND LIABILITY FOR ANY DAMAGE TO UTILITIES.
3. IN NO EVENT SHALL THE SUMP PUMP DISCHARGE INTO THE SANITARY SEWER SYSTEM.

SUMP PUMP CONNECTION

Libertyville

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SHOULD A CONFLICT ARISE BETWEEN MANHARD DETAILS AND THE VILLAGE DETAILS, THE VILLAGE DETAILS SHALL TAKE PRECEDENCE.

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DRAWN BY | REVISIONS | DATE

BATH CONCEPTS
VILLAGE OF LIBERTYVILLE, ILLINOIS
VILLAGE OF LIBERTYVILLE CONSTRUCTION DETAILS

PROJ. MGR.: JSE
PROJ. ASSOC.: MSL
DRAWN BY: ----
DATE: 09-19-25
SCALE: 1"=XX'

SHEET 22 OF 25
BCALYILO1

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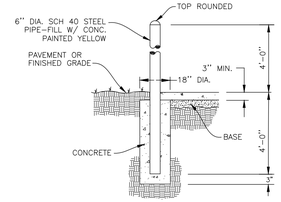
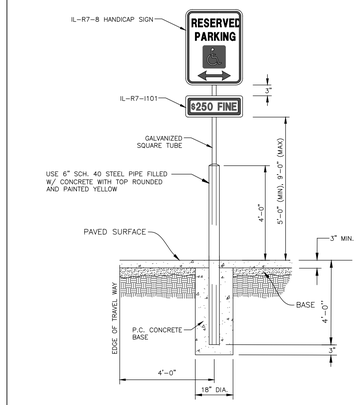
January 5, 2026 – 15:52 Dwg Name: P:\Bcal\d01\Utwk\Engr\Preliminary\Plan Set\VDETAILS.dwg Updated By: dwasielewski



06-01-15

BOLLARD PIPE DETAIL #1

S-RD-BOLLARD-1



SIGN ON BOLLARD

N.T.S.

NOTES:
1. ALL SIGNS SHALL COMPLY WITH U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", LOCAL CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

06-01-15

SIGN ON BOLLARD AND BASE

S-RD-BOLLARD-SIGN

MATERIAL STANDARDS

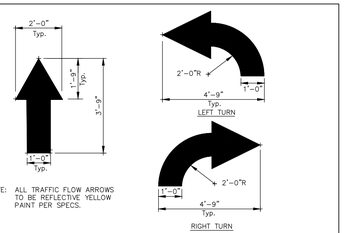
ITEM	BRAND	PRODUCT
FIRE HYDRANTS (TRAFFIC MODEL)	MUELLER SUPER CENTURION WATEROUS PACER	A-423 WB-67
GATE VALVES SPECIFY SIZE NON-RISING STEM, 2" NUT, M.J., OPEN LEFT	MUELLER (SIZE) AMERICAN FLOW CONTROL	A-2360-20L SERIES 2500
VALVE BOXES 3 PIECE	EAST JORDAN TYLER/UNION	SCREW ADJUSTING EXTENSION TYPE
CURB STOPS (SPECIFY SIZE)	MUELLER FORD	300 BALL VALVE BALL VALVE
CORPORATION VALVE (SPECIFY SIZE)	MUELLER FORD	H-15000 FB600 (AWWA/CC THREAD)
MANHOLES/CATCHBASINS/INLETS IN OPEN AREAS AND PAVEMENT (SELF-SEALING LID WITH PROPER UTILITY MARKINGS)	NEENAH CLOSED LID OPEN LID *1 SWALES AND DITCHES	 R-1772 R-2502 A R-4340 B
MANHOLES/CATCH BASINS/INLETS IN COMBINATION CURB & GUTTER (BICYCLE SAFE)	NEENAH ROLL/MOUNTABLE CURB B6.12 CURB	R-3501-D2A R-3281A *-3281-AL
WATER SERVICE SADDLES (ALL SERVICE SADDLES SHALL BE DOUBLE STRAP; BRONZE; NYLON COATED OR STAINLESS STEEL)	MUELLER FORD SMITH-BLAIR 3/4" & 1"	DR2S FS 303 # 317
B-BOX (AT LEAST 1 1/4" TOP SECTION) ARCH PATTERN PLUG STYLE LID	FORD MUELLER	EA2 CURB BOX

*1 WHEREVER STORMWATER COULD POSSIBLY ENTER STORM STRUCTURE

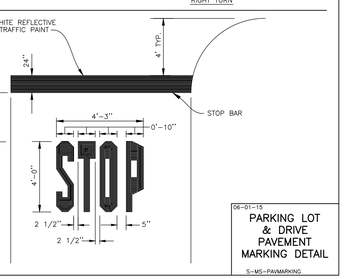
06-01-15

MATERIAL STANDARDS

S-MS-MATERIALSTNDS



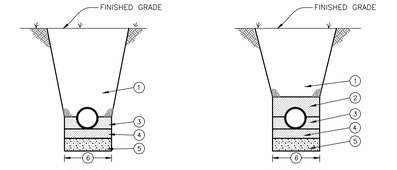
NOTE: ALL TRAFFIC FLOW ARROWS TO BE REFLECTIVE YELLOW PAINT PER SPECS.



06-01-15

PARKING LOT & DRIVE PAVEMENT MARKING DETAIL

S-MS-PAVMARKING



1. MECHANICALLY COMPACTED SELECTED GRANULAR BACKFILL IN 6 INCH LIFTS UNDER OR WITHIN 2 FEET OF ANY PAVEMENT, CURB & GUTTER OR SIDEWALK. MACHINE COMPACTION OF EXCAVATED MATERIAL IN OTHER LOCATIONS WHERE SUITABLE.
2. MECHANICALLY COMPACTED SELECTED GRANULAR BACKFILL IN 6 INCH LIFTS TO 12" ABOVE TOP OF PIPE.
3. RIGID PIPE:
   WELL-COMPACTED HAUNCHING MATERIAL PLACED IN MAXIMUM 6 INCH LIFTS TO SPRING LINE OF PIPE
   FLEXIBLE PIPE:
   WELL-COMPACTED HAUNCHING MATERIAL PLACED IN MAXIMUM 6 INCH LIFTS TO SPRING LINE OF PIPE.
4. 4" WELL-COMPACTED BEDDING MATERIAL
5. UNSUITABLE MATERIAL TO BE REMOVED AND REPLACED WITH GRANULAR FOUNDATION MATERIAL WHERE SOIL CONDITIONS WARRANT
6. TRENCH WIDTH:
   TRENCH DEPTH OF 5 FEET AND LESS, WITHOUT PROTECTION
   OUTSIDE DIAMETER + 12 INCHES ON EACH SIDE OF THE PIPE.
   TRENCH DEPTH OF 5 FEET AND LESS, WITH PROTECTION
   OUTSIDE DIAMETER + 18 INCHES ON EACH SIDE OF THE PIPE.
   TRENCH DEPTH OF GREATER THAN 5 FEET
   OUTSIDE DIAMETER + 18 INCHES ON EACH SIDE OF THE PIPE.

06-01-15

PIPE INSTALLATION DETAIL

S-MS-PIPEINSTALL

06-01-15

PRECAST CONCRETE WHEEL STOP DETAIL

S-MS-WHEELSTOP

NOTE:
1. EXPANSION JOINTS TO BE LOCATED AT HIGH POINTS, UTILITY STRUCTURES, CURB RETURNS, COLD JOINTS OR 60' MAX. (SEE DETAIL)
2. CONTRACTION JOINTS ARE TO BE SAW CUT 2" DEEP AT 20' INTERVALS MAX.
3. INSTALL 2–#4 DEFORMED BARS X 10'–0" LONG OVER ALL TRENCHES.
4. TRANSITION CURB AND GUTTER AS NECESSARY TO MEET DRAINAGE STRUCTURE FRAME AND GRATE

06-01-17

MODIFIED B-6.12 CURB & GUTTER DETAIL

S-RD-B612-CURB

SHEET 1 OF 2

TYPICAL
EXPANSION JOINT DETAIL
CROSS SECTION

06-01-17

CURB EXPANSION JOINT

S-RD-EXPANSION-JOINT

SHEET 2 OF 2

STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS, LATEST EDITION.

41–2.01 PROTECTION OF WATER MAIN AND WATER SERVICE LINES

41–2.01A GENERAL

Water mains and water service lines shall be protected from sanitary sewers, storm sewers, combined sewers, house sewer service connections and drains as follows:

41–2.01B HORIZONTAL SEPARATION – WATER MAINS AND SEWERS

(1.) Water mains shall be located at least ten (10) feet (3.1 m) horizontally from any existing or proposed drain, storm sewer, sanitary sewer, combined sewer or sewer service connection.

(2.) Water mains may be located closer than ten (10) feet (3.1 m) to a sewer line when:

(a) local conditions prevent a lateral separation of ten (10) feet (3.1 m); and

(b) the water main invert is at least eighteen (18) inches (460 mm) above the crown of the sewer; and

(c) the water main is either in a separate trench or in the same trench on an undisturbed earth shelf located to one side of the sewer.

(3.) When it is impossible to meet (1) or (2) above, both the water main and drain or sewer shall be constructed of slip–on or mechanical joint cast or ductile iron pipe, prestressed concrete pipe, or PVC pipe equivalent to water main standards of construction. The drain or sewer shall be pressure tested to the maximum expected surcharge head before backfilling. See Standard Drawing No. 18.

02-01-19

WATER AND SEWER SEPARATION REQUIREMENTS (HORIZONTAL SEPARATION)

S-WM-SEP-HORIZONTAL

STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS, LATEST EDITION.

41–2.01C VERTICAL SEPARATION – WATER MAINS AND SEWERS

(1.) A water main shall be separated from a sewer so that its invert is a minimum of eighteen (18) inches (460mm) above the crown of the drain or sewer whenever water mains cross storm sewers, sanitary sewers or sewer service connections. The vertical separation shall be maintained for that portion of the water main located within ten (10) feet (3.1m) horizontally of any sewer or drain crossed. A length of water main pipe shall be centered over the sewer to be crossed with joints equidistant from the sewer or drain.

(2.) Both the water main and sewer shall be constructed of slip–on or mechanical joint cast or ductile iron pipe, prestressed concrete pipe, or PVC pipe equivalent to water main standards of construction when:

(a) it is impossible to obtain the proper vertical separation as described in (1) above; or

(b) the water main passes under a sewer or drain.

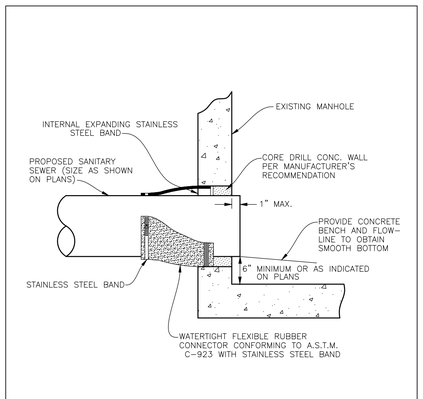
(3.) A vertical separation of eighteen (18) inches (460 mm) between the invert of the sewer or drain and the crown of the water main shall be maintained where a water main crosses under a sewer. Support the sewer or drain lines to prevent settling and breaking the main, as shown on the Plans or as approved by the ENGINEER.

(4.) Construction of water main quality pipe shall extend on each side of the crossing until the perpendicular distance from the water main to the sewer or drain line is at least ten (10) feet (3.1 m) See Standard Drawings No. 19–23.

02-01-19

WATER AND SEWER SEPARATION REQUIREMENTS (VERTICAL SEPARATION)

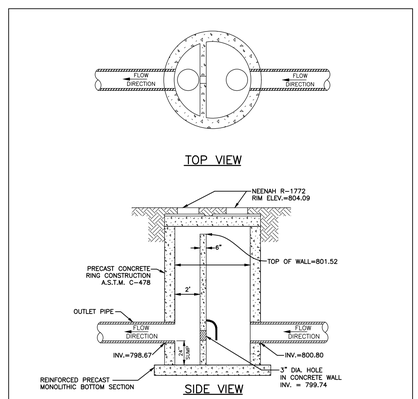
S-WM-SEP-VERTICAL



06-01-15

PIPE TO EXISTING SANITARY MANHOLE CONNECTOR DETAIL

S-SAN-PIPE TO EX SMH

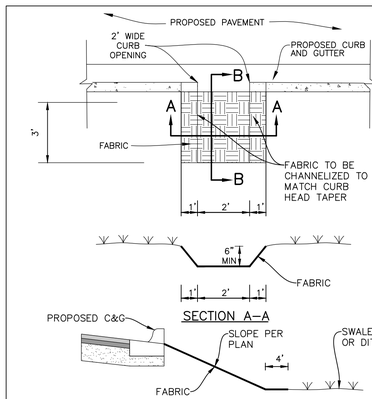


NOTES:
1. CONSTRUCT MANHOLE AS PER STORM MANHOLE DETAIL.
2. PROVIDE MINIMUM 4" OF CA6 BEDDING MATERIAL UNDER MANHOLE BOTTOM SECTION AND FILL ENTIRE EXCAVATION ALL AROUND MANHOLE UP TO C.L. OF SEWER WITH BEDDING MATERIAL.

02-12-20

RESTRICTOR MANHOLE DETAIL #2

S-ST-RESTRICTOR MANHOLE #2

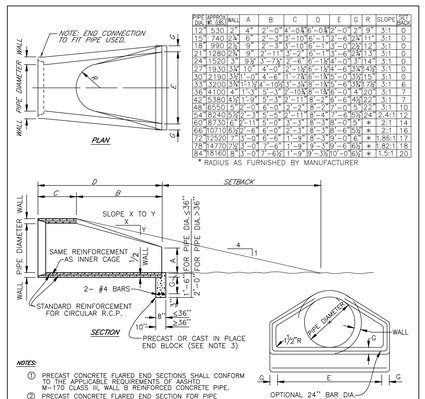


1. RIP RAP SHALL BE CONSTRUCTED BASED ON 12" DIA PIPE (SEE RIP RAP DETAIL)
2. FABRIC TO BE NORTH AMERICAN GREEN C350 OR APPROVED EQUAL

2' CURB CUT FABRIC DETAIL

N.T.S.

S-ST-CURB-CUT-FABRIC



PIPE (APPROX DIA. IN.)	CLASS OR WALL	A	B	C	D	E	G	R	SLOPE	SETBACK
12	1,500	2	4"	2'–0"	4'–6"	9'–0"	2'–0"	2' 9"	3:1	0
15	740	2	6"	2'–3"	5'–0"	10'–0"	1'–10"	2' 6"	3:1	0
18	990	2	9"	2'–6"	5'–6"	11'–0"	1'–10"	2' 3"	3:1	0
21	1280	2	9"	2'–11"	6'–0"	12'–0"	1'–6"	2' 0"	3:1	0
24	1650	2	9"	3'–3"	6'–6"	13'–0"	1'–6"	1' 9"	3:1	0
27	1950	3	10"	4'–0"	7'–0"	14'–0"	1'–6"	1' 6"	3:1	0
30	2190	3	10"	4'–6"	7'–6"	15'–0"	1'–6"	1' 3"	3:1	0
33	2200	4	11"	5'–0"	8'–0"	16'–0"	1'–6"	1' 0"	3:1	6
36	4100	4	1'–3"	5'–3"	8'–6"	16'–0"	1'–6"	1' 0"	3:1	7
42	5380	4	1'–3"	6'–0"	9'–6"	18'–0"	2'–6"	1' 6"	3:1	7
48	6500	5	1'–6"	6'–6"	10'–6"	20'–0"	2'–6"	1' 3"	3:1	10
54	8240	5	1'–6"	7'–0"	11'–6"	21'–0"	2'–6"	1' 0"	3:1	11
60	8730	6	2'–1"	8'–0"	13'–0"	24'–0"	3'–0"	1' 0"	3:1	12
66	10150	6	2'–1"	8'–6"	13'–6"	25'–0"	3'–0"	1' 0"	3:1	14
72	12520	7	2'–6"	9'–0"	14'–6"	27'–0"	3'–0"	1' 0"	3:1	16
78	14720	8	2'–6"	9'–6"	15'–0"	28'–0"	3'–0"	1' 0"	3:1	17
84	16160	8	3'–0"	10'–0"	16'–0"	30'–0"	3'–0"	1' 0"	3:1	18

* RADIUS AS FURNISHED BY MANUFACTURER

NOTES:
1. PRECAST CONCRETE FLARED END SECTIONS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M–170 CLASS III, WALL B REINFORCED CONCRETE PIPE.
2. PRECAST CONCRETE FLARED END SECTION FOR PIPE DIAMETER REQUIRED SHALL BE AS INDICATED ON DETAIL PLAN FOR EACH INDIVIDUAL INSTALLATION.
3. THE END BLOCK SHALL BE PLACED PRIOR TO THE INSTALLATION OF THE FLARED END SECTION. THE END BLOCK SHALL BE CONSTRUCTED IN ACCORDANCE WITH IDOT STANDARD SPECIFICATIONS
4. ALL FLARED END SECTIONS SHALL HAVE GRATINGS AS PER IDOT STANDARD.
5. PROVIDE CLAY DAM UNDER COLLAR AND AROUND UPSTREAM END OF FES AND FIRST PIPE THE FULL WIDTH OF TRENCH AND 10 FEET LONG AT LOCATIONS WHERE THEY DISCHARGE INTO A DETENTION BASIN.
6. PROVIDE SETBACK FROM NORMAL WATER LEVEL OR TOE OF SIDE SLOPE ON DRY BASINS, STREAMS OR CHANNELS FOR PIPE 33" AND LARGER.

06-01-15

CONCRETE FLARED END SECTION DETAIL

S-ST-FLARED-END

SHOULD A CONFLICT ARISE BETWEEN MANHARD DETAILS AND THE VILLAGE DETAILS, THE VILLAGE DETAILS SHALL TAKE PRECEDENCE.

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DRAWN BY | REVISIONS | DATE

Manhard CONSULTING
One Overlook Point, Ste 250, Lincolnshire, IL 60069 | p:847.634.5500 | manhard.com
Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

BATH CONCEPTS
VILLAGE OF LIBERTYVILLE, ILLINOIS
CONSTRUCTION DETAILS

PROJ. MGR.: JSE
PROJ. ASSOC.: MSL
DRAWN BY: ----
DATE: 09-19-25
SCALE: 1"=XX'

SHEET 23 OF 25

BCALYIL01

January 5, 2026 - 15:32 Dwg Name: P:\Revit\01 Work\Family\Preliminary\Plan Sys\DETAILS.dwg Updated By: rpastrana

Bio-Skirt™ Installation Instructions

1. Select the appropriate number of Bio-Skirts according to the size of the SNOUT® as follows: For 12" and 18" SNOUTs or NP1218 or NP1524 (use one Bio-Skirt); For 24" and 30" SNOUTs or NP1830 or NP2430 (use two Bio-Skirts); 36" to 54" SNOUT (use three Bio-Skirts); for SNOUT sizes over 54" consult with BMP application engineer.

2. To optimally position the Bio-skirt, it should be centered across the width of the Snout, and placed vertically so that the blue webbing stripe with grommets will float approximately at the same elevation as the static waterline (see photo 3). To do this, place one anchor bolt on each side of the SNOUT at the invert of the pipe the SNOUT covers. If this is an existing Snout installation, follow the instructions below to secure the mounting bolts and clips, directly onto the structure wall to which the Snout is attached (see photo 1). You may also utilize existing bolts on either side of the Snout if it will allow the Bio-skirt to float at the static waterline.

3. Install the Anchor Assemblies and Clips s follows.
   For Concrete Structures:
   Mark the location of where the anchors will be placed:
   (1) Drill a 3/4"hole into the base material to the required depth (approximately 1-1/4" deep.)
   (2) Blow the hole clean of dust and other material.
   (3) Insert the anchor into the hole. Narrow end of cone must point out, lead shield slides over cone.
   (4) Position the setting tool or a 9/16 socket against the anchor outer sleeve. (The outer rim of the tool or socket should seat onto the lead shield rim.) Set the anchor by driving the lead sleeve over the cone using several sharp hammer blows. Be sure the anchor is at the required embedment depth (flush or slightly below face of concrete)
   (5) Attach the clip, aligned vertically, onto anchor with the supplied bolt and washer. (see photo 1)

   Plastic Structure Install:
   (1) Mark and pre-drill (To match holes in SNOUT®) six pilot holes (3/16") for the 14 x 1 1/4" SS self tapping hex drive screws provided in kit. Install ¼ x 1" Neoprene Backed Washers on each screw and tighten to approximately 10-15 pounds.
   (2) Attach the clip, vertically, onto anchor via supplied bolt and washer. (see photo 1).

3. Assemble the Bio-skirt tether, using the provided black adjustable hooks and blue elastomeric cord (see photo 2). Cut cord to length as needed.

4. Attach the Bio-Skirt using the two tethers, one per side, and four hooks, two per side, one hook attached to grommet and one hook to clip on each side.

5. For applications where multiple Bio-Skirts are deployed together for larger SNOUTs (e.g. on 24" and larger SNOUTs per schedule below), connect skirts grommet to grommet with hooks and cord as supplied in installation kit. Trim cord sections to length between Bio-Skirts to loosely span circumference of SNOUT.

Bio-Skirt Installation Kit Items :
- 2- 3/8"expansion anchor assemblies (anchors, stainless bolts & stainless washers)
- 4- Plastic Hooks(1) 1" or 2" female pipe adapter
- 2- Stainless Steel Connector Tabs
- 1- 6' Length Elastomeric Cord (cut two pieces to length)

Photo 1. Clip on SNOUT (Align vertically)

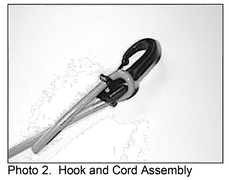


Photo 2. Hook and Cord Assembly

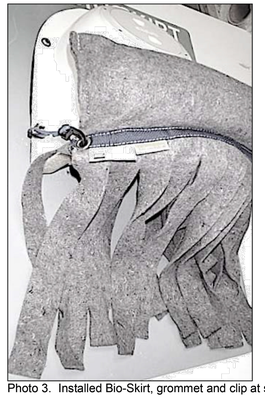
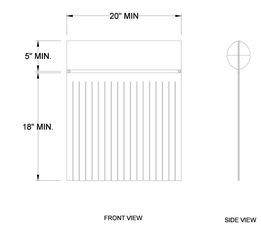


Photo 3. Installed Bio-Skirt, grommet and clip at static water line.

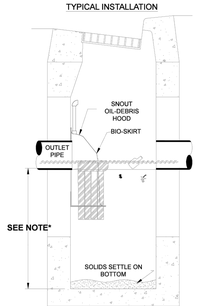
Maintenance Note: Should Bio-Skirt become saturated with oil, it can be wrung out and re-deployed. It can also be washed in a washing machine and re-deployed. The Anti-microbial properties that protect the fabric will stay intact, even after washing. Dispose of any captured oils or the Bio-Skirt themselves according to local regulations.

CONFIGURATION DETAIL



The BIO-SKIRT
HYDROCARBON ADSORBING SKIRTED BOOM

TYPICAL INSTALLATION



*NOTE- ATTACH BIO-SKIRT STRUTURE WALL SUCH THAT IT IS APPROXIMATELY AT SAME ELEVATION AS STATIC WATER LEVEL

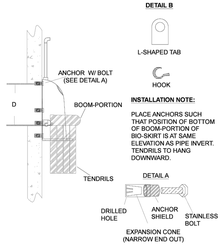
NOTES:

1. All new and/or existing catch basins or water quality structures shall be outfitted with the Bio-Skirt(R) Hydrocarbon reducing skirted boom as manufactured by:
   BEST MANAGEMENT PRODUCTS, INC.
   53 MT. ARCHER RD.
   LYME, CT 06371
   (860) 434-0277, (860) 434-3195 FAX
   TOLL FREE: (800) 504-8008 OR (888) 434-0277
   WEB SITE: www.bmpinc.com
   or pre-approved equal.
2. The skirted boom shall be comprised of an upper boom portion that is an adsorbent fabric covered floating boom of 9" minimum diameter with an integral lower skirt portion comprised of fabric tendrils of an 18" minimum length that hang beneath the boom.
3. All booms shall be made from geo-textile quality needle-woven filtration fabric manufactured from 100% recycled select fibers with a .125" minimum thickness.
4. All fabric shall be protected with a covalently surface bonded non-leaching antimicrobial agent and booms shall display a tag indicating "Antimicrobial" which preserves the service life of the unit.
5. The Bio-Skirt shall be positioned in front of the exit pipe and SNOUT® Oil-Debris Separator if so equipped (the preferred application of the Bio-Skirt is to be deployed with the SNOUT).
6. The skirted boom shall be securely attached to the structure wall on each side of the exit pipe with 3/8" stainless steel bolts, stainless steel tabs, plastic-composite hooks and elastomeric cord as found in manufacturer supplied in installation kit.
7. For applications where multiple Bio-Skirts are deployed together for larger SNOUTs (e.g. on 24" and larger SNOUTs per schedule below"), connect skirts grommet to grommet with hooks and cord as supplied in the installation kit.

Typical Deployment Schedule:
12-18" SNOUT- One Bio-Skirt
24-30" SNOUT- Two Bio-Skirts
36-52" SNOUT- Three Bio-Skirts
72" and up, Call 800-504-8008 for guidance.

SNOUT US Patent # 6126817

INSTALLATION DETAIL

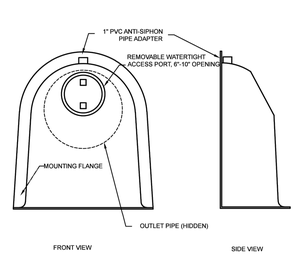


INSTALLATION NOTE:
PLACE ANCHORS SUCH THAT POSITION OF BOTTOM OF BOOM-PORTION OF BIO-SKIRT IS AT SAME ELEVATION AS PIPE INVERT. TENDRILS TO HANG DOWNWARD.

OIL ADSORBENT SPECIFICATION FOR CATCH BASINS AND WATER QUALITY STRUCTURES

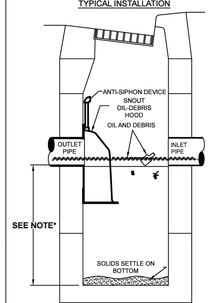
DESCRIPTION	DATE	SCALE
BIO-SKIRT (TM) SPECIFICATION AND INSTALLATION (TYPICAL)	10/29/14	NONE
	DRAWING NUMBER	SP-BIO

CONFIGURATION DETAIL



SNOUT OIL-WATER-DEBRIS SEPARATOR

TYPICAL INSTALLATION



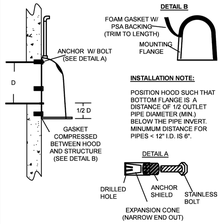
*NOTE- SUMP DEPTH OF 36" MIN. FOR UP TO 12" ID PIPE OUTLET. FOR PIPES 15" ID AND ABOVE SUMP DEPTH OF 2.5 TO 3 TIMES PIPE ID RECOMMENDED (E.G. 5' DEEP for 24" PIPE)

NOTES:

1. ALL HOODS AND TRAPS FOR CATCH BASINS AND WATER QUALITY STRUCTURES SHALL BE AS MANUFACTURED BY:
   BEST MANAGEMENT PRODUCTS, INC.
   53 MT. ARCHER RD.
   LYME, CT 06371
   (860) 434-0277, (860) 434-3195 FAX
   TOLL FREE: (800) 504-8008 OR (888) 434-0277
   WEB SITE: www.bmpinc.com
   OR PRE-APPROVED EQUAL
2. ALL HOODS SHALL BE CONSTRUCTED OF A GLASS REINFORCED RESIN COMPOSITE WITH ISO GEL COAT EXTERIOR FINISH WITH A MINIMUM 0.125" LAMINATE THICKNESS.
3. ALL HOODS SHALL BE EQUIPPED WITH A WATERTIGHT ACCESS PORT, A MOUNTING FLANGE, AND AN ANTI-SIPHON VENT PIPE AND ELBOW AS DRAWN. (SEE CONFIGURATION DETAIL)
4. THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY OUTLET PIPE SIZE AS PER MANUFACTURER'S RECOMMENDATION (SNOUT SIZE ALWAYS LARGER THAN PIPE SIZE).
5. THE BOTTOM OF THE HOOD SHALL EXTEND DOWNWARD A MINIMUM DISTANCE EQUAL TO 1/2 THE OUTLET PIPE DIAMETER WITH A MINIMUM DISTANCE OF 6" FOR PIPES <12" I.D.
6. THE ANTI-SIPHON VENT SHALL EXTEND ABOVE HOOD BY MINIMUM OF 3" AND A MAXIMUM OF 12" ACCORDING TO STRUCTURE CONFIGURATION.
7. THE SURFACE OF THE STRUCTURE WHERE THE HOOD IS MOUNTED SHALL BE FINISHED SMOOTH AND FREE OF LOOSE MATERIAL AND PIPE SHALL BE FINISHED FLUSH TO WALL.
8. ALL STRUCTURE JOINTS SHALL BE WATERTIGHT.
9. THE HOOD SHALL BE SECURELY ATTACHED TO STRUCTURE WALL WITH 2" STAINLESS STEEL BOLTS AND OIL-RESISTANT GASKET AS SUPPLIED BY MANUFACTURER. (SEE INSTALLATION DETAIL)
10. INSTALLATION INSTRUCTIONS SHALL BE FURNISHED WITH MANUFACTURER SUPPLIED INSTALLATION KIT.
    INSTALLATION KIT SHALL INCLUDE:
    A. INSTALLATION INSTRUCTIONS
    B. PVC ANTI-SIPHON VENT PIPE AND ADAPTER
    C. OIL-RESISTANT CRUSHED CELL FOAM GASKET WITH PSA BACKING
    D. 3/8" STAINLESS STEEL BOLTS
    E. ANCHOR SHIELDS

US Patent # 6126817, 7951294, 7857966, 8512556
Canada Patent # 2285146, 2690156, 2690156 others pending

INSTALLATION DETAIL

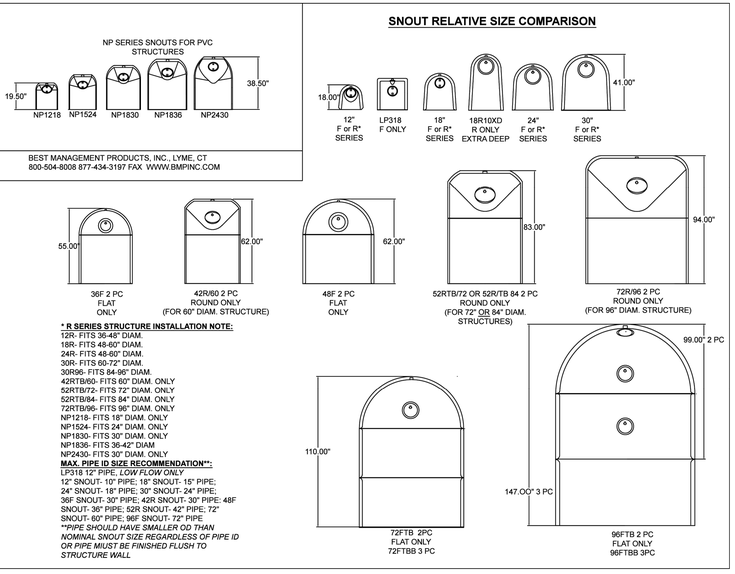


INSTALLATION NOTE:
POSITION HOOD SUCH THAT BOTTOM FLANGE IS A DISTANCE OF 1/2 OUTLET PIPE DIAMETER (MIN.) BELOW THE PIPE INVERT. MINIMUM DISTANCE FOR PIPES < 12" I.D. IS 6".

HOOD SPECIFICATION FOR CATCH BASINS AND WATER QUALITY STRUCTURES

DESCRIPTION	DATE	SCALE
OIL- DEBRIS HOOD SPECIFICATION AND INSTALLATION (TYPICAL)	09/08/15	NONE
	DRAWING NUMBER	SP-SN

SNOUT RELATIVE SIZE COMPARISON



BEST MANAGEMENT PRODUCTS, INC., LYME, CT
800-504-8008 877-434-3197 FAX WWW.BMPINC.COM

36F 2 PC FLAT ONLY
42R/60 2 PC ROUND ONLY (FOR 60" DIAM. STRUCTURE)
48F 2 PC FLAT ONLY
52RTB/72 OR 52R/TB 84 2 PC ROUND ONLY (FOR 72" OR 84" DIAM. STRUCTURES)
72R/96 2 PC ROUND ONLY (FOR 96" DIAM. STRUCTURE)
72FTB 2PC FLAT ONLY 72FTBB 3 PC
96FTB 2 PC FLAT ONLY 96FTBB 3PC

*** R SERIES STRUCTURE INSTALLATION NOTE:**
12R- FITS 36-48" DIAM.
18R- FITS 48-60" DIAM.
24R- FITS 48-60" DIAM.
30R- FITS 60-72" DIAM.
30R96- FITS 84-96" DIAM.
42RTB/60- FITS 60" DIAM. ONLY
52RTB/72- FITS 72" DIAM. ONLY
52RTB/84- FITS 84" DIAM. ONLY
72RTB/96- FITS 96" DIAM. ONLY
NP1218- FITS 18" DIAM. ONLY
NP1524- FITS 24" DIAM. ONLY
NP1830- FITS 30" DIAM. ONLY
NP1836- FITS 36-42" DIAM
NP2430- FITS 30" DIAM. ONLY
MAX. PIPE ID SIZE RECOMMENDATION:**
LP318 12" PIPE, *LOW FLOW ONLY*
12" SNOUT- 10" PIPE; 18" SNOUT- 15" PIPE;
24" SNOUT- 18" PIPE; 30" SNOUT- 24" PIPE;
36F SNOUT- 30" PIPE; 42R SNOUT- 30" PIPE; 48F SNOUT- 36" PIPE; 52R SNOUT- 42" PIPE; 72" SNOUT- 60" PIPE; 96F SNOUT- 72" PIPE.
***PIPE SHOULD HAVE SMALLER OD THAN NOMINAL SNOUT SIZE REGARDLESS OF PIPE ID OR PIPE MIUST BE FINISHED FLUSH TO STRUCTURE WALL*

SHOULD A CONFLICT ARISE BETWEEN MANHARD DETAILS AND THE VILLAGE DETAILS, THE VILLAGE DETAILS SHALL TAKE PRECEDENCE.

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DRAWN BY | REVISIONS | DATE

Manhard CONSULTING
One Overlook Point, Suite 250, Lincolnshire, IL 60069 | p:847.634.0200 | manhardcom
Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

BATH CONCEPTS
VILLAGE OF LIBERTYVILLE, ILLINOIS
CONSTRUCTION DETAILS

PROJ. MGR.:	JSE
PROJ. ASSOC.:	MSL
DRAWN BY:	----
DATE:	09-19-25
SCALE:	1"=XX'

SHEET 24 OF 25
BCALYIL01

January 5, 2026 - 10:32 Data Name: P:\Bid Jobs\Vlgof\Cad\Preliminary\Plan Set\DETAILS.dwg Updated By: dwiedewski

VILLAGE OF LIBERTYVILLE

GENERAL NOTES

Date: 2-15-2023

1. ALL WORK AND MATERIALS SHALL BE IN CONFORMANCE WITH THE VILLAGE OF LIBERTYVILLE'S REGULATIONS AND "ENGINEERING DESIGN & CONSTRUCTION STANDARDS". IN CASE OF A DISCREPANCY BETWEEN THE PLANS AND THE VILLAGE DESIGN STANDARDS/CODE, THE MORE STRINGENT REQUIREMENT WILL GOVERN, AS DETERMINED BY THE VILLAGE ENGINEER.

2. THE OWNER OR THEIR REPRESENTATIVE IS SOLELY RESPONSIBLE TO OBTAIN ANY AND ALL PERMITS REQUIRED BY APPLICABLE GOVERNMENTAL AGENCIES.

3. THE CONTRACTOR/DEVELOPER ASSUMES ALL RESPONSIBILITY AND LIABILITY FOR ANY ACTION RESULTING FROM THEIR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.

4. THE CONTRACTOR/DEVELOPER SHALL INDEMNIFY AND HOLD HARMLESS THE VILLAGE OF LIBERTYVILLE.

5. ALL CONSTRUCTION MEANS AND METHODS, TECHNIQUES, PROCEDURES, SCHEDULING, SEQUENCING, AND JOB SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR/DEVELOPER.

6. A SET OF PLANS AND SPECIFICATIONS WITH THE LATEST REVISION DATE APPROVED BY THE VILLAGE SHALL BE KEPT ON THE JOB SITE AT ALL TIMES DURING THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL OBTAIN FURTHER VILLAGE AUTHORIZATION PRIOR TO BEGINNING ANY WORK THAT IS NOT INDICATED ON THE APPROVED DOCUMENTS.

7. NO EXCAVATIONS SHALL COMMENCE UNTIL ALL EXISTING PUBLIC AND PRIVATE UTILITIES ARE FIELD LOCATED. CALL JULIE (811 OR 800-892-0123) AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE.

8. THE SOIL EROSION AND SEDIMENT CONTROL (SESC) MEASURES INDICATED ON THESE PLANS ARE THE MINIMUM REQUIREMENTS, AND THE CONTRACTOR SHALL PROMPTLY ADDRESS ANY SESC ISSUE WITH APPROPRIATE MEASURES. ADDITIONAL SESC MEASURES MAY BE REQUIRED, AS DETERMINED BY THE CONTRACTOR, ENGINEER, SESC INSPECTOR, VILLAGE STAFF, OR WDO ENFORCEMENT OFFICER.

9. PRIOR TO COMMENCEMENT OF SITE DISTURBANCE ACTIVITIES, SEDIMENT/EROSION CONTROL MEASURES MUST INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND MADE AVAILABLE FOR INSPECTION/APPROVAL BY THE VILLAGE. CONTACT THE ENGINEERING DIVISION (847-918-2100) AT LEAST TWENTY-FOUR (24) HOURS IN ADVANCE TO SCHEDULE INSPECTION.

10. THE CONTRACTOR SHALL MAKE ALL SITE MODIFICATIONS AND ALL REQUIRED TESTING AVAILABLE FOR VILLAGE STAFF INSPECTION AND OBSERVATION, IN ACCORDANCE WITH THE APPLICABLE PERMITS, REGULATIONS AND STANDARDS. THE CONTRACTOR SHALL VERIFY ALL APPLICABLE INSPECTION REQUIREMENTS WITH THE VILLAGE BEFORE BEGINNING THE SUBJECT INSTALLATION.

11. SUITABLE TRAFFIC CONTROL MEASURES SHALL BE PROVIDED FOR CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION. TRAFFIC CONTROL MUST BE PROVIDED FOR ANY ACTIVITY THAT IMPACTS TRAFFIC FLOW. THIS INCLUDES, BUT IS NOT LIMITED TO, ROAD CLOSURES REQUIRING DETOURS, DAILY LANE CLOSURES, LONG TERM LANE CLOSURES, NARROW LANES, AND CONSTRUCTION VEHICLES ENTERING AND EXITING THE PUBLIC ROADWAY.
NOTE: ROAD CLOSURES AND DETOURS WILL ONLY BE PERMITTED WITH PRIOR REVIEW AND WRITTEN APPROVAL BY THE VILLAGE.

12. ACCESS FOR MAIL DELIVERY, GARBAGE COLLECTION, SCHOOL BUSES, AND EMERGENCY VEHICLES MUST BE MAINTAINED ALONG PUBLIC STREETS AT ALL TIMES.

13. PEDESTRIANS MUST BE PROVIDED WITH A SAFE ALTERNATE ROUTE IF PEDESTRIAN FACILITIES ARE TO BE CLOSED AS A RESULT OF CONSTRUCTION ACTIVITIES. GUIDANCE MUST BE PROVIDED TO PEDESTRIANS SO THAT THEY MAY AVOID THE WORK ZONE.

14. PRIOR TO COMMENCEMENT OF ANY OFF-SITE CONSTRUCTION, THE CONTRACTOR SHALL SECURE WRITTEN AUTHORIZATION THAT ALL OFF-SITE EASEMENTS HAVE BEEN SECURED AND THAT PERMISSION HAS BEEN GRANTED TO ENTER ONTO PRIVATE PROPERTY.

15. ANY USE OF VILLAGE WATER MUST BE REQUESTED THROUGH PUBLIC WORKS, 600 NORTH AVENUE, 847-362-3434, AND METERED AT THE PUBLIC WORKS BUILDING OR, IF AUTHORIZED BY PUBLIC WORKS, WITH A HYDRANT METER.

16. EXCEPT FOR EMERGENCY REPAIRS, NO WORK REQUIRING REMOVAL OF STREET PAVEMENT SHALL BE SCHEDULED WHEN HOT MIX ASPHALT WILL BE UNAVAILABLE FOR PERMANENT PAVEMENT RESTORATION.

17. FULL DEPTH SAWCUT IS REQUIRED FOR PRIOR TO ANY REMOVAL OF EXISTING PUBLIC PAVEMENT OR CURB & GUTTER.

18. UTILITY EXCAVATION AND INSTALLATION AFFECTING THE PUBLIC SYSTEM OR WITHIN THE PUBLIC RIGHT-OF-WAY SHALL OCCUR ONLY ON WEEKDAYS (MONDAY TO FRIDAY, EXCLUDING HOLIDAYS) BETWEEN 7:00 AM AND 3:30 PM. WRITTEN CONSENT FROM THE PUBLIC WORKS DEPARTMENT WOULD BE REQUIRED PRIOR TO ANY SUCH WORK OCCURRING ON SATURDAY, SUNDAY, OR OUTSIDE THE SPECIFIED HOURS. IN THE CASE OF EMERGENCY REPAIR WORK, THE REQUIREMENT FOR WRITTEN CONSENT DOES NOT APPLY; HOWEVER, THE CONTRACTOR SHALL NOTIFY PUBLIC WORKS IMMEDIATELY AND COOPERATE WITH ALL REQUIREMENTS AS DIRECTED.

19. PRIOR TO ALL TRENCHLESS INSTALLATIONS (INCLUDING ANY DRY UTILITY/CONDUIT INSTALLATION BY THE CONTRACTOR, EVEN IF IT IS NOT SHOWN ON THE PLANS), POTHOLING OF ALL EXISTING VILLAGE UTILITIES AND/OR SERVICE LATERALS IS REQUIRED TO DETERMINE ACTUAL LOCATION(S) AND DEPTH(S); SUCH POTHOLING SHALL BE MADE AVAILABLE FOR ENGINEERING DIVISION INSPECTION. FOR TRENCHLESS INSTALLATIONS INSTALLED AT THE APPROXIMATE DEPTH OF EXISTING VILLAGE UTILITIES AND/OR SERVICE LATERALS, APPLICANT SHALL ARRANGE FOR POST-CONSTRUCTION CLOSED CIRCUIT TELEVISING OF THESE EXISTING SANITARY AND STORM SEWER FACILITIES (MAINS AND LATERALS/PRIVATE SERVICES, AS APPLICABLE). THE VIDEO FOOTAGE SHALL BE PROVIDED TO ENGINEERING DIVISION FOR REVIEW. IF A RECORDING CANNOT BE MADE AVAILABLE, THE APPLICANT SHALL PROVIDE AT LEAST 24 HOURS NOTICE SO AN ENGINEERING DIVISION INSPECTOR CAN BE PRESENT FOR THE TELEVISING. ANY OBSERVED DAMAGE ATTRIBUTABLE TO THE SUBJECT INSTALLATION SHALL BE PROMPTLY REPAIRED BY THE APPLICANT ACCORDING TO THE APPLICABLE STANDARDS.

20. ALL NECESSARY PRECAUTIONS SHALL BE TAKEN AGAINST DAMAGE TO EXISTING UTILITIES. IN THE EVENT OF A BREAK IN AN EXISTING WATER MAIN, GAS MAIN, SEWER, OR UNDERGROUND CABLE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY A RESPONSIBLE OFFICIAL FROM THE ORGANIZATION OPERATING THE UTILITY INTERRUPTED. THE CONTRACTOR OR DEVELOPER SHALL LEND ALL POSSIBLE ASSISTANCE IN RESTORING SERVICE AND SHALL ASSUME ALL COSTS, CHARGES, OR CLAIMS CONNECTED WITH THE INTERRUPTION AND REPAIR OF SUCH SERVICES. SHOULD REPAIR WORK NEED TO BE PERFORMED BY THE VILLAGE FOR ANY REASON, THE COST OF SUCH REPAIR WORK WILL BE BILLABLE TO THE CONTRACTOR OR DEVELOPER ON A TIME AND MATERIAL BASIS PLUS, FRINGE, OVERHEAD, AND ADMINISTRATIVE COSTS.

21. BURIED SPLICES ARE STRICTLY PROHIBITED. THEREFORE, ANY DAMAGE TO UNDERGROUND ELECTRICAL CONDUIT SHALL RESULT IN A FULL REPLACEMENT OF ELECTRICAL CABLE BY A VILLAGE-APPROVED CONTRACTOR. THE COST OF SUCH REPAIR WORK WILL BE BILLED TO THE CONTRACTOR OR DEVELOPER ON A TIME AND MATERIAL BASIS PLUS, FRINGE, OVERHEAD, AND ADMINISTRATIVE COSTS.

22. HYDRAULIC CEMENT SHALL BE USED IN PLACE OF TRADITIONAL MORTAR FOR SEALING ALL UTILITY STRUCTURES, PIPE CONNECTIONS, OR SIMILAR APPLICATIONS.

23. ANY AREAS AFFECTED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO THEIR PRE-CONSTRUCTION CONDITION OR BETTER. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL UTILITIES, PAVEMENTS, CURBS, DRIVEWAYS, TREES, AND PARKWAYS. NEWLY CONSTRUCTED WORK SHALL ALSO BE PROTECTED FROM DAMAGE UNTIL THE PROJECT HAS BEEN COMPLETED.

24. CONTRACTOR SHALL RESTORE ALL DISTURBED PUBLIC PARKWAY AREAS WITH A MINIMUM 4" TOPSOIL, WITH EITHER SEEDING AND BLANKETING OR SOD. INSPECTION IS REQUIRED TO VERIFY THAT THE PARKWAY HAS BEEN PROPERLY GRADED AND RESTORED. ESTABLISHED GRASS GROWTH IS REQUIRED PRIOR TO FINAL APPROVAL.

25. AS-BUILT RECORD DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE VILLAGE OF LIBERTYVILLE, IN ACCORDANCE WITH THE APPROVED PERMIT(S) AND THE APPLICABLE VILLAGE STANDARDS. PLEASE REFER TO THE "ENGINEERING DESIGN & CONSTRUCTION STANDARDS" FOR AS-BUILT SUBMITTAL REQUIREMENTS.

SHOULD A CONFLICT ARISE BETWEEN THE MANHARD SPECIFICATIONS AND THE VILLAGE SPECIFICATIONS, THE VILLAGE SPECIFICATIONS TAKE PRECEDENCE.

DATE	REVISIONS	DRAWN BY
12-1-25	CURSORY REVIEW REVISIONS	JSE/GAW

Manhard CONSULTING
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Civil Engineers • Surveyors • Water Resource Engineers • Water Resource Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

BATH CONCEPTS

VILLAGE OF LIBERTYVILLE, ILLINOIS

VILLAGE OF LIBERTYVILLE GENERAL NOTES

PROJ. MGR.: JSE
PROJ. ASSOC.: MSL
DRAWN BY: MK
DATE: 09-19-25
SCALE: N.T.S.

SHEET
25 OF 25
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December 15, 2025 - 11:25 Dwg Name: P:\Shared\01\Data\Civil\Preliminary\Plan Set\SHEETS.dwg Updated By: jlwentzel

06-01-16

MANHARD CONSULTING
STANDARD SPECIFICATIONS

GENERAL CONDITIONS

CONTRACTOR acknowledges and agrees that the use and reliance of these Plans and Specifications is sufficient consideration for CONTRACTOR'S covenants stated herein.

DEFINITION OF TERMS

a. "CLIENT" shall mean [redacted], which is the person or entity with whom Manhard Consulting has contracted with to prepare Civil Engineering PLANS and SPECIFICATIONS.

b. "ENGINEER" shall mean Manhard Consulting, a Civil Engineering consultant on the subject project.

c. "PLANS and SPECIFICATIONS" shall mean the Civil Engineering PLANS and SPECIFICATIONS prepared by the ENGINEER, which may be a part of the contract documents for the subject project.

d. "CONTRACTOR" shall mean any person or entity performing any work described in the PLANS and SPECIFICATIONS.

e. "JURISDICTIONAL GOVERNMENTAL ENTITY" shall mean any municipal, county, state or federal unit of government from whom an approval, permit and/or review is required for any aspect of the subject project.

INTENT OF THE PLANS AND SPECIFICATIONS

The intent of the PLANS and SPECIFICATIONS is to set forth certain requirements of performance, type of equipment and structures, and standards of materials and construction. They may also identify labor and materials, equipment and transportation necessary for the proper execution of the work but are not intended to be infinitely determined so as to include minor items obviously required as part of the work. The PLANS and SPECIFICATIONS require new material and equipment unless otherwise indicated, and to require complete performance of the work in spite of omissions of specific references to any minor component part. It is not intended, however, that materials or work not covered by or properly inferred from any heading, branch, class or trade of the SPECIFICATIONS shall be supplied unless distinctly so noted. Materials or work described in words, which so applied have a well-known technical or trade meaning, shall be held to refer to such recognized standards.

INTERPRETATION OF PLANS AND SPECIFICATIONS

a. The CLIENT and/or CONTRACTOR shall promptly report any errors or ambiguities in the PLANS and SPECIFICATIONS to the ENGINEER. Questions as to meaning of PLANS and SPECIFICATIONS shall be interpreted by the ENGINEER, whose decision shall be final and binding on all parties concerned.

b. The ENGINEER will provide the CLIENT with such information as may be required to show revised or additional details of construction.

c. Should any discrepancies or conflicts on the PLANS or SPECIFICATIONS be discovered either prior to or after award of the contract, the ENGINEER's attention shall be called to the same before the work is begun thereon and the proper corrections made. Neither the CLIENT nor the CONTRACTOR may take advantage of any error or omissions in the PLANS and SPECIFICATIONS. The ENGINEER will provide information when errors or omissions are discovered.

GOVERNING BODIES

All works herein proposed shall be completed in accordance with all requirements of any JURISDICTIONAL GOVERNMENTAL ENTITY, and all such pertinent laws, directives, ordinances and the like shall be considered to be a part of these SPECIFICATIONS. If a discrepancy is noted between the PLANS and SPECIFICATIONS and requirements of any JURISDICTIONAL GOVERNMENTAL ENTITY, the CLIENT and/or the CONTRACTOR shall immediately notify the ENGINEER in writing.

LOCATION OF UNDERGROUND FACILITIES AND UTILITIES

When the PLANS and SPECIFICATIONS include information pertaining to the location of existing underground facilities and utilities (including but not limited to water mains, sanitary sewers, storm sewers, electric, telephone, gas and cable TV lines), such information represents only the opinion of the ENGINEER as to the approximate location and elevation of such facilities and utilities. At the locations wherein detailed positions of these facilities and utilities become necessary to the new construction, including all points of connection, the CONTRACTOR shall furnish all labor and tools to verify or definitely establish the horizontal location, elevation, size and material (if appropriate) of the facilities and utilities. The CONTRACTOR shall notify the ENGINEER at least 48 hours prior to construction if any discrepancies in existing utility information or conflicts with existing utilities exist. The ENGINEER assumes no responsibility whatever with respect to the sufficiency or accuracy of the information shown on the PLANS and SPECIFICATIONS relative to the location of underground facilities and utilities, nor the manner in which they are removed or adjusted.

It shall be the CONTRACTOR's responsibility prior to construction, to notify all Utility Companies of the intent to begin construction and to verify the actual location of all such facilities and utilities. The CONTRACTOR shall also obtain from the respective Utility Companies the working schedules for removing or adjusting these facilities.

UNSUITABLE SOILS

The PLANS have been prepared by the ENGINEER based on the assumption that all soils on the project are suitable to support the proposed improvements shown. The CLIENT or CONTRACTOR shall immediately notify the ENGINEER if he discovers or encounters an obstruction that prevents the installation of the improvement according to the line and grades shown on the PLANS.

PROTECTION OF TREES

All trees that are not to be removed shall be protected from damage. Trees shall not be removed unless requested to do so in writing by the CLIENT.

NOTIFICATION OF OWNERS OF FACILITIES AND UTILITIES

The CONTRACTOR shall notify all applicable Jurisdictional Governmental Entities or utility companies, i.e., water, sewer, electric, telephone, gas and cable TV prior to beginning any construction so that said entity or company can establish the location and elevation of underground pipes, conduits or cables adjoining or crossing proposed construction.

TRAFFIC CONTROL

The CONTRACTOR shall provide when required by any JURISDICTIONAL GOVERNMENTAL ENTITY, all signs, equipment, and personnel necessary to provide for safe and efficient traffic flow in all areas where the work will interrupt, interfere or cause to change in any form, the conditions of traffic flow that existed prior to the commencement of any portions of the work. The CLIENT may, at his discretion, require the CONTRACTOR to furnish traffic control under these or other circumstances where in his opinion it is necessary for the protection of life and property. Emergency vehicle access shall be maintained at all times. Unless authorized by the CLIENT or CLIENT's consultant representative, all existing access points shall be maintained at all times by the CONTRACTOR. The need for traffic control shall be anticipated by the CLIENT.

WORK AREA

The CONTRACTOR, his agents and employees and their employees and all equipment, machinery and vehicles shall confine their work within the boundaries of the project or work area specified by the Client. The CONTRACTOR shall be solely liable for damage caused by him or his agents and employees and their equipment, machinery and vehicles on adjacent property or areas outside designated work areas.

UTILITY POLES

It shall be the responsibility of the CONTRACTOR to arrange for the relocation or bracing of existing utility poles that may be within the working limits of this contract. It is expressly understood that all work and costs connected with the maintenance of these utility poles, their temporary relocations, etc., shall be the responsibility of the CLIENT or the CONTRACTOR.

RESTORATION

It is the intent of these SPECIFICATIONS that clean-up and final restoration shall be performed immediately upon completion of each phase of the work, both inside and outside the Project, or when so directed by the CLIENT so that these areas will be restored as nearly as possible to their original condition or better, and shall include but not be limited to, restoration of maintained lawns and rights-of-way, roadways, driveways, sidewalks, ditches, bushes, hedges, trees, shrubs, fences, mailboxes, sewers, drain tiles, water mains, etc.

CLEANING UP

The CONTRACTOR shall at all times keep the premises free from accumulations of waste material or rubbish caused by his employees or work, and at the completion of the work he shall remove all his rubbish, tools, scaffolding and surplus materials and shall leave his work "broom clean" or its equivalent, unless more exactly specified.

ROAD CLEANING

The CONTRACTOR shall maintain roadways adjoining the project site free from mud and debris at all times. If mud and/or debris is carried onto the roadways from vehicles entering onto the highway from either the CONTRACTOR's trucks, his employees' vehicles, or his material suppliers, the CONTRACTOR shall immediately remove said mud and/or debris.

SAFETY AND PROTECTION

The CONTRACTOR shall be solely and completely responsible for the conditions of the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours. The CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR's duties and responsibilities for safety and for protection of the work shall continue until such time as all work is completed and the CLIENT has notified CONTRACTOR that the work is acceptable. The duties of the ENGINEER do not include review of the adequacy of either the CONTRACTOR's or the general public's safety in, on, or near the construction site.

HOLD HARMLESS

To the fullest extent permitted by law, any CONTRACTOR; material supplier or other entity by use of these plans and specifications hereby waives any right of contribution and agrees to indemnify, defend, save and hold harmless the CLIENT and ENGINEER and its agents, employees and consultants from and against all manner of claims, causes, causes of action, damages, losses and expenses, including but not limited to, attorneys' fees arising out of, resulting from or in connection with the performance of any work, pursuant to or with respect to these plans and specifications. However, this indemnity shall not be construed to indemnify ENGINEER, its consultants, agents or employees against its own negligence.

Claims, damages, losses and expenses as these words are used in the Agreement shall mean and include, but not be limited to (1) injury or damage occurring by reason of the failure of or use or misuse of any hoist, riggings, blocking, scaffolding or any and all other kinds of items of equipment, whether or not the same be owned, furnished or loaned by any part or entity, including any contractor; (2) all attorneys' fees and costs incurred in bringing an action to enforce the provisions of this indemnity; (3) costs for time expended by the indemnified party and its employees, at its usual rates plus costs or travel, long distance telephone and reproduction of documents and (4) consequential damages.

In any and all claims against the CLIENT or ENGINEER or any of their agents or employees and consultants by any party, including any employee of the CONTRACTOR or any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount of type of damages, compensation or benefits payable by or for the CONTRACTOR or any Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts or any insurance maintained by CONTRACTOR or any Subcontractor or any other party.

INSURANCE

Any party using or relying on these plans, including any contractor, material supplier, or other entity shall obtain, (prior to commencing any work) general public liability insurance insuring against all damages and claims for any bodily injuries, death or property damage arising out of any work, including the construction work provided for in these plans, and shall name the CLIENT and ENGINEER and its consultants, agents and representatives as additional insureds under such insurance policy; provided that any party using or relying on these plans having obligations to maintain specific insurance by reason of any agreement with CLIENT or any CONTRACTOR or ENGINEER shall provide evidence and certificates of insurance as required by such contract or agreement. Such insurance must contain a clause stating that the insurance is primary coverage for ENGINEER and ENGINEER's other applicable coverage is considered secondary. Such insurance shall not limit any liability of any party providing work or services or providing materials.

THIRD PARTY BENEFICIARY

Manhard Consulting, Ltd., the ENGINEER, is intended to be a third party beneficiary of this willing agreement and requirement.

Note: These Specifications are for Northern Illinois.

DETAILED SPECIFICATIONS

I. DEMOLITION

The CONTRACTOR shall coordinate with respective utility companies prior to the removal and/or relocation of utilities. The CONTRACTOR shall coordinate with the utility company concerning portions of work which may be performed by the Utility Company's forces and any fees which are to be paid to the utility company for their services. The CONTRACTOR is responsible for paying for all fees and charges.

Should removal and/or relocation activities damage features indicated to remain, the CONTRACTOR shall provide new materials/structures in accordance with the contract documents. Except for materials designed to be relocated on this plan, all other construction materials shall be new.

Prior to demolition occurring, all erosion control devices are to be installed.

All existing utility lines and conduits located under proposed buildings shall be removed and properly backfilled. All utility lines and conduits located under drives, on-site roads, parking lots or sidewalks shall be filled with a flowable backfill and end plugged. All existing structures shall be removed. All existing utility lines located under landscape areas shall be left in place and plugged at all structures.

The CONTRACTOR is responsible for demolition, removal and disposal (in a location approved by all JURISDICTIONAL GOVERNING ENTITIES) of all structures, pads, walls, flumes, foundations, road, parking lots, drives, drainage structures, utilities, etc., such that the improvements shown on these plans can be constructed. All demolition work shall be in accordance with all applicable federal, state and local requirements. All facilities to be removed shall be undercut to suitable material and brought to grade with suitable compacted fill material per the specifications.

The CONTRACTOR is responsible for obtaining all permits required for demolition and disposal.

Electrical, telephone, cable, water, fiber optic cable and/or gas lines needing to be removed shall be coordinated by the CONTRACTOR with the affected utility company.

CONTRACTOR must protect the public at all times with fencing, barricades, enclosures, and other appropriate best management practices.

Continuous access shall be maintained for surrounding properties at all times during demolition.

All fire access lanes within the project area shall remain in service, clean of debris, and accessible for use by emergency vehicles.

The CONTRACTOR shall coordinate water main work with the Fire Department and the JURISDICTIONAL GOVERNING ENTITY to plan the proposed improvements and to ensure adequate fire protection is available to the facility and site throughout this specific work and through all phases of construction. CONTRACTOR shall be responsible for any required water main shut offs with the JURISDICTIONAL GOVERNING ENTITY during construction. Any costs associated with water main shut offs will be the responsibility of the CONTRACTOR and no extra compensation will be provided.

CONTRACTOR shall maintain all existing parking areas, sidewalks, drives, etc. clear and free from any construction activity and/or material to ensure easy and safe pedestrian and vehicular traffic to and from the site. CONTRACTOR shall coordinate/phase all construction activity within proximity of the building and utility interruptions with the facility manager to minimize disturbance and inconvenience to facility operations.

CONTRACTOR may limit saw-cut and pavement removal to only those areas where it is required as shown on these construction plans, however if any damage is incurred on any of the surrounding pavement, etc. the CONTRACTOR shall be responsible for IT'S removal and repair.

Any existing wells encountered shall be exposed and sealed 3' below proposed finish grade by the CONTRACTOR in accordance with Section 920.120 (latest edition) of the Illinois Water Well Construction Code, Department of Public Health, and all applicable local rules and regulations. CONTRACTOR is responsible for obtaining all permits required by JURISDICTIONAL GOVERNMENTAL ENTITIES for abandoning existing wells.

Any existing septic tanks and grease traps encountered shall have all liquids and solids removed and disposed of by a licensed commercial hauler in accordance with JURISDICTIONAL GOVERNING ENTITY regulations, and the tank and grease traps shall then be filled with suitable materials or removed from the site and disposed of by the CONTRACTOR.

Voids left by any item removed under any proposed building, pavement, walk, etc. or within 24" thereof shall be filled and compacted with suitable materials by the CONTRACTOR.

The CONTRACTOR shall be responsible for the disconnection of utility services to the existing buildings prior to demolition of the buildings.

Any material containing asbestos found within existing structures shall be removed from the site and disposed of off-site by the CONTRACTOR in accordance with County, State and Federal regulations.

CONTRACTOR shall develop and implement a daily program of dust control and shall submit and obtain JURISDICTIONAL GOVERNING ENTITY approval of dust control procedures prior to demolition of any structures. Modification of dust control procedures shall be performed by the CONTRACTOR to the satisfaction of the JURISDICTIONAL GOVERNING ENTITY as requested.

The CONTRACTOR shall coordinate all demolition with the JURISDICTIONAL GOVERNING ENTITY and CLIENT to ensure protection and maintenance of sanitary sewer and water utilities as necessary and to provide stormwater conveyance until new facilities are constructed, tested and placed into operation.

The locations of all existing utilities shown on this plan have been determined from the best information available and are given for the convenience of the CONTRACTOR and are not to be interpreted as the exact location, or as the only obstacles that may occur on the site. The ENGINEER assumes no responsibility for their accuracy. Prior to the start of any demolition activity, the CONTRACTOR shall notify the utility companies for location of existing utilities and shall verify existing conditions and proceed with caution around any anticipated features.

The CONTRACTOR is responsible for removing the existing irrigation system in the areas of proposed improvements. The contractor shall cap the existing irrigation system to remain such that the remaining system shall continue to function properly.

The parking lot shall be completed in sections such that it does not interrupt the facility operations. The CONTRACTOR shall coordinate with the construction manager for work to be performed.

II.EARTHWORK

STANDARDS

This work shall be completed in conformance with the applicable sections of the Standard Specifications for Road and Bridge Construction, Department of Transportation, State of Illinois, latest edition except as modified below.

SOIL BORING DATA

Copies of results of soil boring and reports, if such borings were taken by the CLIENT in the vicinity of the proposed construction site, should be made available by the CLIENT to the CONTRACTOR. These borings are presented for whatever purpose the CONTRACTOR chooses to make of them. The ENGINEER makes no representation or warranty regarding the number, location, spacing or depth of borings taken, nor of the accuracy or reliability of the information given in the results thereof.

Further, the ENGINEER does not assume responsibility for the possibility that during construction, the soil and groundwater condition may be different than indicated. Neither does the ENGINEER assume responsibility for variations of soil and groundwater at location between borings. The CONTRACTOR is required to make its own borings, explorations and observations to determine soil and groundwater conditions.

EARTHWORK CALCULATIONS AND CROSS SECTIONS

The CONTRACTOR understands that any earthwork calculations, quantities or cross sections that have been furnished by the ENGINEER are for information only and are provided without any guarantee by the CLIENT or ENGINEER whatsoever as to their sufficiency or accuracy. CONTRACTOR warrants that he has performed his own subsurface investigations as necessary and his own calculations and cross sections to determine site soil conditions and earthwork volumes. The ENGINEER makes no representation or guarantee regarding earthwork quantities or that the earthwork for this project will balance due to the varying field conditions, changing soil types, allowable construction to tolerances and construction methods that are beyond the control of the ENGINEER.

CLEARING, GRUBBING AND TREE REMOVAL

The site shall be cleared, grubbed, and trees and stumps removed where designated on the PLANS. Trees designated to remain shall be protected from damage.

TOPSOIL STRIPPING

Upon completion of demolition, clearing, grubbing and tree removal, all topsoil shall be stripped from under all buildings and pavements areas, and other areas necessary to complete the work. Topsoil stripped shall be placed in stockpiles in locations as designated by the CLIENT.

TOPSOIL RESPREAD

Upon completion of roadway and/or parking lot improvements and installation of underground utilities a minimum of six inches (6") of topsoil shall be respread over all unpaved areas which have been disturbed by earthwork construction, except building pads and other designated areas, which shall be kept free from topsoil.

SEEDING

Upon completion of topsoil respread, the CONTRACTOR shall apply seed and fertilizer to all respread areas in accordance with IDOT standards or as designated on landscape drawings and specifications provided by the CLIENT.

SODDING

Upon completion of topsoil respread, the CONTRACTOR shall install sod to all areas designated on the plans or as designated on the landscape drawings and specifications provided by the CLIENT.

EXCAVATION AND EMBANKMENT

Upon completion of topsoil stripping, all excavation and embankments shall be completed as shown on the PLANS. All suitable excavated materials shall be hauled, placed (moisture conditioned if necessary) and compacted in the embankment areas. The CONTRACTOR shall include all dewatering, temporary ditching and culverts necessary to complete the excavation and embankment.

Specifically included in the scope of Excavation and Embankments is grading and shaping of all cut or fill areas including swales and ditches; handling of sewer spoil, etc., and all work required to provide positive drainage at the end of each working day and upon completion of a section.

The CONTRACTOR shall be responsible for the excavation of all swales and ditches and for the excavation or filling of the roads, building pads and parking lots within the work limits to lines & grades shown on the plans. He shall be responsible for obtaining compaction in accordance with the minimum values listed in the table below for all embankments unless more stringent values are listed in the soils report or are approved by the CLIENT, and to use any method approved by the CLIENT necessary to obtain this compaction (i.e., soil fabric or any undercutting that may be required).

Type Material	Percent Compaction Standard	Pavement & Floor Slabs	Grass Areas
Sandy Soils	Modified Proctor	95%	90%
Clayey Soils	Standard Proctor	95%	90%

The CONTRACTOR shall notify the CLIENT if proper compaction cannot be obtained so that the CLIENT may determine what remedial measures may be needed.

A soils testing firm employed by the CLIENT shall determine which soils are unsuitable. Materials in their natural state being defined as unsuitable that would be suitable material if moisture conditioned, shall be conditioned by the CONTRACTOR and used as suitable embankment material or hauled from the site.

For purposes of definition, unsuitable material shall be as follows unless determined otherwise by the Soils Engineer:

1. Any soil whose optimum moisture content exceeds 25%.
2. Any cohesive soil with an unconfined compressive strength of 1.5 tons per square foot or less.
3. Any soil whose silt content exceeds 60% by weight.
4. Any soil whose maximum density is less than 100 pounds per cubic foot.
5. Any soil containing organic, deleterious, or hazardous material.

Upon completion of excavation and shaping of the water retention areas intended to maintain a permanent pool of water, all silt seams and granular or sandy soils shall be removed to a minimum depth of three feet below the subgrade and replaced with an impermeable clay liner, including adjacent to and under storm sewer inlets and outlets. It is the intent of these PLANS and SPECIFICATIONS that the CONTRACTOR shall prepare the lake bottoms, side slopes, and compaction thereof such that the lakes will maintain the proposed normal water level and that leakage does not exceed ½ inch per week.

Ditches and swales are to be excavated to the lines and grades indicated on the PLANS. All suitable materials excavated from the ditches shall be used in construction of the embankments.

The CONTRACTOR shall notify the CLIENT immediately upon encountering groundwater during excavation. If in the opinion of the CLIENT or the JURISDICTIONAL GOVERNING ENTITY this condition necessitates the installation of perforated drain tile bedded in washed gravel or open storm sewer joints wrapped with fabric, the CONTRACTOR shall install the same.

During excavation and embankment, grades may be adjusted to achieve an overall site earthwork balance. The CONTRACTOR shall cooperate fully with the CLIENT in adjustment of grades, construction methods and placement of material to meet the above goals and shall immediately advise CLIENT if he believes that the earthwork will not balance.

It is the intent of these PLANS that storm waters falling on the site be diverted into sedimentation / lake / detention basins during construction. The CONTRACTOR shall construct and maintain any temporary ditches or swales that are necessary to accomplish this prior to beginning mass excavation.

EROSION CONTROL

Suitable erosion control practices shall be maintained by the CONTRACTOR in accordance with Illinois Urban Manual and all applicable Soil Erosion and Sedimentation Control ordinances and the PLANS.

UNDERCUTTING DURING EARTHWORK

If the subgrade cannot be dried adequately by discing as outlined above for placement of material to planned grades and if the CLIENT determines that the subgrade does not meet the standards set forth above, the CLIENT may require undercutting.

MISCELLANEOUS CONTRACT ITEMS

The following items may be required at the CLIENT's option, as indicated on the PLANS or as required by the JURISDICTIONAL GOVERNING ENTITY:

(1) **GEOTEXTILE FABRIC**

Geotextile fabric or approved equal shall be provided in areas as designated by the CLIENT, as indicated on the PLANS or as required by the JURISDICTIONAL GOVERNING ENTITY where proper compaction of embankments over existing soft soils is not possible. Geotextile fabric shall meet the material specifications of and shall be installed in accordance with the above standards.

(2) **EROSION CONTROL BLANKET**

Erosion control blanket or approved equal shall be provided in areas as designated by the CLIENT, as indicated on the PLANS or as required by the JURISDICTIONAL GOVERNING ENTITY for the stabilization of disturbed areas. Erosion control blanket shall meet the material specifications of and shall be installed in accordance with the above standards, the Illinois Urban Manual and/or the details shown on the PLANS.

III.UNDERGROUND IMPROVEMENTS

A. GENERAL

STANDARDS

All underground improvements shall be constructed and tested in accordance with the Standard Specifications for Water and Sewer Construction in Illinois and Standard Specifications for Road and Bridge Construction, Department of Transportation, State of Illinois, latest edition. In the event of conflicting guidelines, the more restrictive shall govern.

SELECTED GRANULAR BACKFILL

Selected Granular Backfill shall be required for all sewer and water main trenches lying under existing or proposed streets, driveways, parking lots and within 24" thereof, and where noted on PLANS. All material placed in such trenches shall be in accordance with the above standards.

MANHOLES, CATCH BASINS, INLETS & VALVE VAULTS

All Manholes, Catch Basins, Inlets, and Valve Vaults shall be constructed of reinforced precast concrete ring construction with tongue and groove joints in conformance with the latest revision of ASTM designation C-478. All joints between sections and frames (except sanitary manholes, see Section IIIB Manholes, below) shall be sealed with mastic type bituminous jointing compound. CONTRACTOR shall remove all excess mastic on inside of structure and butter joints with mortar. Manholes are to have offset cones except that no cone shall be used on storm manholes 6'-0" deep or less in which case a reinforced concrete flat top section shall be used, and Valve Vaults shall have concentric cones. Only concrete adjustment rings will be permitted where necessary and shall be limited to two adjustment rings totaling not more than 8" in height. All manholes and catch basin steps shall be copolymer polypropylene with continuous ½" steel reinforcement as manufactured by MA Industries, or approved equal.

AUGER/BORING AND CASING

Casing pipe shall be welded steel pipe, installed where shown on the PLANS. The carrier pipe shall be securely blocked and banded and sanitary and storm sewers shall maintain the specified gradient. Upon installing the carrier pipe the ends shall be sealed with hydraulic cement.

AUGER (OPEN BORE)

The CONTRACTOR shall auger (open bore) where noted on PLANS.

HORIZONTAL AND VERTICAL SEPARATION OF WATER AND SEWER MAINS

Horizontal and vertical separation of water and sewer mains shall be in accordance with Standard Specifications for Water and Sewer Construction in Illinois Section 41-2.01A and 41-2.01B and Standard Drawing 18, 19, 20, 21, 22, 23 and 24.

STRUCTURE ADJUSTMENTS

Structures shall be adjusted to the finished grade as shown on PLANS.

B. SANITARY SEWERS AND APPURTENANCES

SANITARY SEWER PIPE

Sanitary sewer pipe including building services, shall conform to the following:

(1) Polyvinyl Chloride (PVC) Sewer Pipe shall conform to ASTM D3034 (4-inch thru 15-inch) or ASTM F679 (18-inch thru 48-inch) minimum SDR 26 with flexible elastomeric seal gasket gasketed joints conforming to ASTM D3212 and F477.

(2) Ductile Iron Sewer Pipe shall conform with ANSI/AWWA C151/A21.51 Class 50, cement lined with push on type joints conforming to ANSI/AWWA C111/A21.11.

(3) Extra Strength Clay Sewer Pipe shall conform with ASTM Specification C700 (glazed) with ASTM D1784 type joints conforming to Clow NO-BEL (ESVCP), with flexible gasket meeting ASTM C425 (MWRD only).

Sanitary sewers shall include bedding and backfilling.

MANHOLES

Manholes shall be constructed in conformance with Section IIIA Manholes, etc. above. The concrete base and bottom section shall be constructed of precast reinforced concrete monolithically cast sections including benches, pipe connection and invert flow lines. Manhole frame and lids shall be Neenah R-1772 or approved equal, with lids imprinted "SANITARY", with recessed pick holes. Manhole joints between adjustment rings and frames and between manhole sections shall be set on preformed plastic gasket consisting of a homogeneous blend of refined hydrocarbon resins and plasticizing compounds reinforced with inert mineral filler to provide a water tight seal. All pipe connection openings shall be precast with resilient rubber watertight pipe sleeves. A 10" elastomeric band (chimney seal) shall be installed extending from the manhole top to the manhole frame as shown on detail. Manholes shall include steps, frame & grate, bedding, and trench backfill.

FOUNDATION, BEDDING AND HAUNCHING

Foundation, Bedding and Haunching shall be wet coarse aggregate or moist fine aggregate in accordance with the above standards and placed as shown on the detail.

TESTING

Sanitary sewers shall be air tested and tested for deflection in accordance with the requirements of Section 31-1.12 "TESTING AND INSPECTION FOR ACCEPTANCE OF SANITARY SEWERS" of the Standard Specifications for Water and Sewer Construction in Illinois or the JURISDICTIONAL GOVERNING ENTITY, whichever is more restrictive. In addition, a televised inspection of the completed sanitary sewers shall be conducted and a copy of the videotape and report furnished to the JURISDICTIONAL GOVERNING ENTITY.

All sanitary manholes are to be tested for water tightness in accordance with ASTM C969 "Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines", or ASTM C1244 "Standard Test Method for Concrete Sewer Manholes by the Negative Pressure (Vacuum) Test".

SERVICES

A wye branch or "tee" and sanitary service line, properly plugged and sealed shall be constructed as shown on the PLANS. The ends of all services shall be marked with a 4"x4" post extending 36" above grade and painted red. The CONTRACTOR shall keep accurate records of all Wye or Tee locations as measured from the downstream manhole as well as the service lengths and furnish same to CLIENT.

RISERS

Risers shall be constructed in locations as shown on the PLANS and according to the detail.

DROP MANHOLE CONNECTIONS

Drop manhole connections to existing manholes shall be constructed according to the PLANS and the detail.

SANITARY SEWER FORCE MAIN

Sanitary sewer force main shall conform to the following:

(1) Polyvinyl Chloride (PVC) Pressure Pipe conforming to the latest revision of ANSI/AWWA C900, Class 150 with integral bell and flexible elastomeric gasket joints conforming to ASTM F477.

(2) Ductile iron cement lined pipe conforming to the latest revision of ANSI/AWWA C151/A21.51, Thickness Class 50, minimum 150 psi working pressure with "push on" type joints.

Force mains shall have a minimum of five feet six inches (5'-6") of cover and shall include bedding and trench backfill. Poured or monolithic concrete thrust blocks are required to brace all tees, plugs, caps, and bends of 11 1/4 degree deflection or greater.

Upon completion of installation, force mains are to be plugged and pressure tested at 2 times the working pressure or total dynamic head for a period of 10 minutes, with no loss of pressure or as required by the JURISDICTIONAL GOVERNING ENTITY, whichever is more stringent.

TELEVISION INSPECTION

Upon completion of construction a television inspection of the sanitary sewer system shall be performed on all portions of the sewer if required by the JURISDICTIONAL GOVERNING ENTITY. Videotapes and written report of all television inspections shall be provided to the CLIENT. The form of report and type and format of the videotape shall be approved by the JURISDICTIONAL GOVERNING ENTITY.

All sewers and appurtenances shall be cleaned prior to inspection and testing required by this section.

All defects and corrective work required as the result of television inspection shall be performed by the CONTRACTOR without delay. All dips, cracks, leaks, improperly sealed joints and departures from approved grades and alignment shall be repaired by removing and replacing the involved sections of pipe. Upon completion thereof, the sewer shall be retested and such further inspection made as may appear warranted by the CLIENT.

MISCELLANEOUS

All floor drains shall be connected to the sanitary sewer.

C. WATER MAINS AND APPURTENANCES

WATER MAIN PIPE (3" AND LARGER)

Water main pipe shall conform to the following:

(1) Ductile iron pipe shall be per ANSI/AWWA C151/A21.51, Thickness Class 52, minimum 150 psi working pressure, cement lined in accordance with ANSI/AWWA C104/A21.4, with "push on" type joints.(2)

(2) Polyvinyl Chloride Pipe (PVC) conforming to the latest revision of ANSI/AWWA C900 (4-inch thru 12-inch) or ANSI/AWWA C905 (14-inch thru 48-inch) with a pressure rating of 235 psi, SDR 18 in accordance with ASTM D2241. Joints shall be pressure rated in accordance with ASTM D3139 with elastomeric seals in accordance with ASTM F477.

Installation shall be in accordance with ANSI/AWWA C600 (Ductile Iron) or ANSI/AWWA C605 (PVC). All water main shall have mechanical joint cast iron or ductile iron fittings in accordance with ANSI/AWWA C110/A21.10 or compact ductile iron fittings in accordance with ANSI/AWWA C153/A21.53 with 250 psi working pressure.

Poured or monolithic concrete thrust blocks are required to brace all tees, plugs, caps, and bends of 11 1/4 degree deflection or greater. Minimum cover for all water mains, including services, shall be 5'-6" from the finished grade. Water main shall include bedding and backfilling.

WATER VALVES

All valves shall be resilient wedge gate valves conforming to the latest revision of ANSI/AWWA C515, with a rated working pressure of 200 psi in accordance with JURISDICTIONAL GOVERNING ENTITY requirements, except that butterfly valves conforming to ANSI/AWWA C504 shall be constructed on all water mains 16" diameter and larger. Valves shall be non-rising stem and shall close by turning clockwise.

VALVE VAULTS

Valve vaults shall be constructed in conformance with Section IIIA Manholes, etc. above. Frame and lids shall be as approved by the JURISDICTIONAL GOVERNING ENTITY and shall be imprinted "WATER".

VALVE BOXES

Valve boxes shall be constructed in conformance with the standard detail. Valve boxes shall be cast iron extension screw type having lids imprinted with the letters "WATER".

FIRE HYDRANTS

Fire Hydrants shall be per JURISDICTIONAL GOVERNING ENTITY requirements. All fire hydrants shall be located as shown on the PLANS and shall be painted in a manner acceptable to the JURISDICTIONAL GOVERNING ENTITY after installation and shall be adjusted to final grade.

TAP, STOPS AND BOX

The CONTRACTOR shall determine from the JURISDICTIONAL GOVERNING ENTITY as to the exact style, type, and manufacture of corporation stops, ground key stops and services boxes preferred by the JURISDICTIONAL GOVERNING ENTITY and shall furnish same.

SMALL WATER SERVICES (2" DIAMETER OR LESS)

Water services shall be type K copper size as shown on PLANS, and constructed where shown on the PLANS. The ends of all services shall be marked with a 4"x4" post extending 36" above grade and painted blue. The CONTRACTOR shall keep accurate records of tap locations and service box locations, as well as the service lengths and furnish same to CLIENT. Water services shall include bedding and backfilling.

DISINFECTION

Disinfections shall meet all of the requirements of the State of Illinois, Environmental Protection Agency, Public Water Supplies Division. The safe quality of the water supply shall be demonstrated by bacteriological analysis of samples collected at sampling taps on at least two consecutive days following disinfection of the mains and copies of the said report submitted to the JURISDICTIONAL GOVERNING ENTITY and the CLIENT.

PRESSURE TEST

Allowable leakage, test pressure and duration shall be as per the requirements of the JURISDICTIONAL GOVERNING ENTITY.

PRESSURE CONNECTION TO EXISTING WATER MAIN

The CONTRACTOR shall maintain system pressure on existing water main at all times. Existing water main shall be located and material excavated, and valve basin slab and main supports installed. The existing water main shall be cleaned and the exterior disinfected prior to installing the tapping tee (material to conform to AWWA C110). The tapping valve shall be installed (valve to conform to AWWA C500) and the pressure tap completed in accordance with the detail on the plans. Valve shall be constructed in conformance with the detail. Payment for pressure connection to existing water main shall include disinfection, tapping valve and tee, valve vault, frame and lid, bedding, and trench backfill.

DRY CONNECTION TO EXISTING WATER MAIN

A dry connection to existing water main shall include a connection to an existing water main stub where shown on the PLANS. The CONTRACTOR shall obtain approval of the JURISDICTIONAL GOVERNING ENTITY to shut down any main, including submittal of a schedule of the time of shut off and the time the line will be returned to service. All mains shut down that are opened to atmosphere must be disinfected prior to returning main into service.

POLYETHYLENE ENCASEMENT (FOR DUCTILE IRON WATER MAIN ONLY)

The CLIENT, or JURISDICTIONAL GOVERNING ENTITY may request that portions of the water main be enclosed in a polyethylene encasement in accordance with ANSI/AWWA C105/A21.5 should soil conditions so warrant its use.

FOUNDATION, BEDDING AND HAUNCHING

Foundation, Bedding and Haunching shall be wet coarse aggregate or moist fine aggregate in accordance with the above standards and placed as shown on the detail.

TRACER WIRE

If the distance between valves when installing PVC pipe exceeds 1,000', tracer wire stations will be required for current induction. Tracer wire stations in grass areas will be Rhino TriView Flex Tracing Wire Stations or approved equal. In paved areas, they will be Valvco Tracer Wire Access Box for H2O loading or approved equal.

For open cut construction, using PVC pipe, a continuous, insulated, 12 gauge copper wire suitable for direct burial shall be taped on top of all piping to provide for locating following construction. This wire shall be securely terminated inside every valve vault on stainless steel hardware with an exposed lead of at least 12". A mechanically secure and soldered connection shall be provided for all wire splices. Where construction is by directional drilling or similar trenchless technology the tracer wire shall be 3/16" 7x19 PVC coated stainless steel aircraft cable with minimum breaking strength of 3,700 lbs (Lexco, Chicago, IL). Or Trace-Safe water blocking tracerwire RT series 19 gauge conductor (RT 1802W water, RT 1803W sewer).

Before final approval of any water main, there will be a monitored tracer wire continuity test in order to confirm proper installation of any tracer wire.

D. STORM SEWERS AND APPURTENANCES

STORM SEWER PIPE

Storm sewer pipe shall conform to the following:

(1) Reinforced concrete pipe minimum Class IV in conformance with the latest revision of ASTM designation C76 with C443 flexible gasket joints, except that bituminous mastic joints may be used in grass areas.

(2) Polyvinyl Chloride (PVC) Pipe: ASTM D3034 (4-inch thru 15-inch) or ASTM F679 (18-inch thru 36-inch), rated SDR 35, continually marked with manufacturer's name, pipe size, cell classification, SDR rating. Joints shall be flexible elastomeric seals conforming to ASTM D3212.

(3) Ductile Iron Pipe (DIP) shall conform to ANSI/AWWA C151/21.5, Class 50 cement lined with push on type joints conforming to ANSI/AWWA C111/A21.11.

(4) Spiral Rib Metal Pipe Type 1R: 18-inch diameter and greater. Pipe ends shall be re-corrugated and installed with semi-corrugated Hugger type brands and "O" ring gaskets. (Only permitted with Municipality approval and/or when specifically indicated on PLANS).

(5) High Density Polyethylene Pipe (HDPE) Smooth Interior, AASHTO Designation M252 and M294, maximum diameter of 48 inches. Pipe joints and fittings shall be watertight gasketed joints. No band seals will be allowed. (Only permitted in landscape areas with Municipality Approval and/or when specifically indicated on PLANS).

(6) Polypropylene (PP) Pipe shall have a smooth interior and annular exterior corrugations and shall meet or

Aerial of Subject Property and Surrounding Area

Traffic Impact Study
Proposed Industrial Development
Libertyville, Illinois

Prepared For:

ATWELL

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.

January 7, 2026

1. Introduction

This report summarizes the methodologies, results, and findings of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for a proposed industrial development to be located in Libertyville, Illinois. The site, which is currently vacant, is located in the northeast quadrant of the intersection of Peterson Road with Midlothian Road. As proposed the plans call for a 596,165 square-foot industrial facility which includes office, production, and warehouse space. Access to the development will be provided via two full movement access drives on Peterson Road.

The purpose of this study was to examine background traffic conditions, assess the impact that the proposed development will have on traffic conditions in the area, and determine if any roadway or access improvements are necessary to accommodate traffic generated by the proposed development.

Figure 1 shows the location of the site in relation to the area roadway system. **Figure 2** shows an aerial view of the site.

The sections of this report present the following:

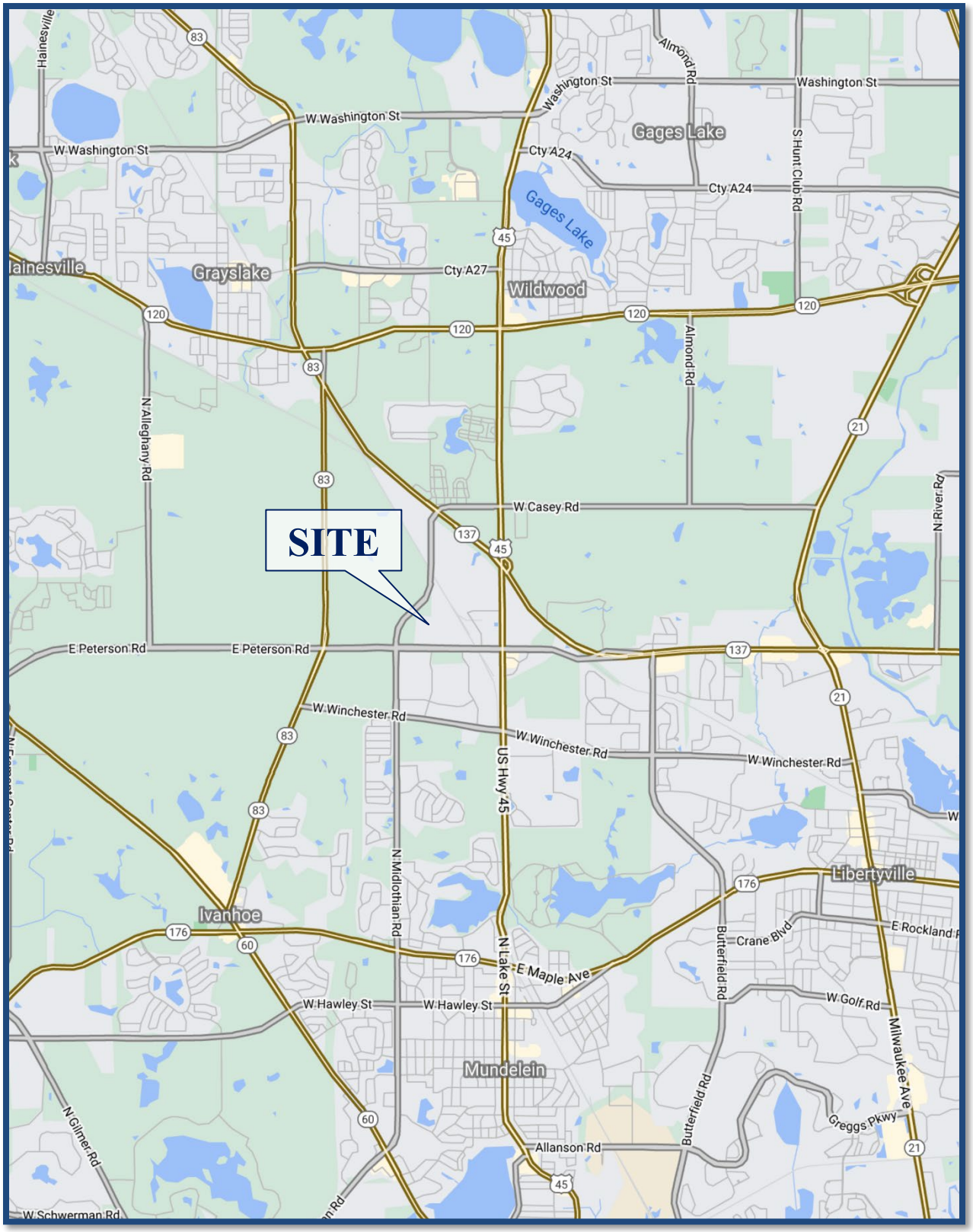
- Existing roadway conditions
- A description of the proposed development
- Directional distribution of the development traffic
- Vehicle trip generation for the development
- Future traffic conditions including access to the development
- Traffic analyses for the weekday morning and evening peak hours
- Recommendations with respect to adequacy of the site access and adjacent roadway system

Traffic capacity analyses were conducted for the weekday morning and weekday evening peak hours for the following conditions:

1. Existing Conditions – Analyzes the capacity of the existing roadway system using peak hour traffic volumes from traffic counts conducted in 2025.

2. Year 2027 No-Build Conditions – Analyzes the capacity of the future roadway system using existing traffic volumes increased by an ambient area growth factor as well as the traffic expected to be generated by other area developments.

3. Year 2027 Total Projected Conditions – Analyzes the capacity of the future roadway system using Year 2027 no-build traffic volumes increased by the traffic estimated to be generated by the proposed development.



Site Location **Figure 1**

Aerial View of Site **Figure 2**

2. Existing Conditions

Existing transportation conditions in the vicinity of the site were documented based on field visits conducted by KLOA, Inc. in order to obtain a database for projecting future conditions. The following provides a description of the geographical location of the site, physical characteristics of the area roadway system including lane usage and traffic control devices, and existing peak hour traffic volumes.

Site Location

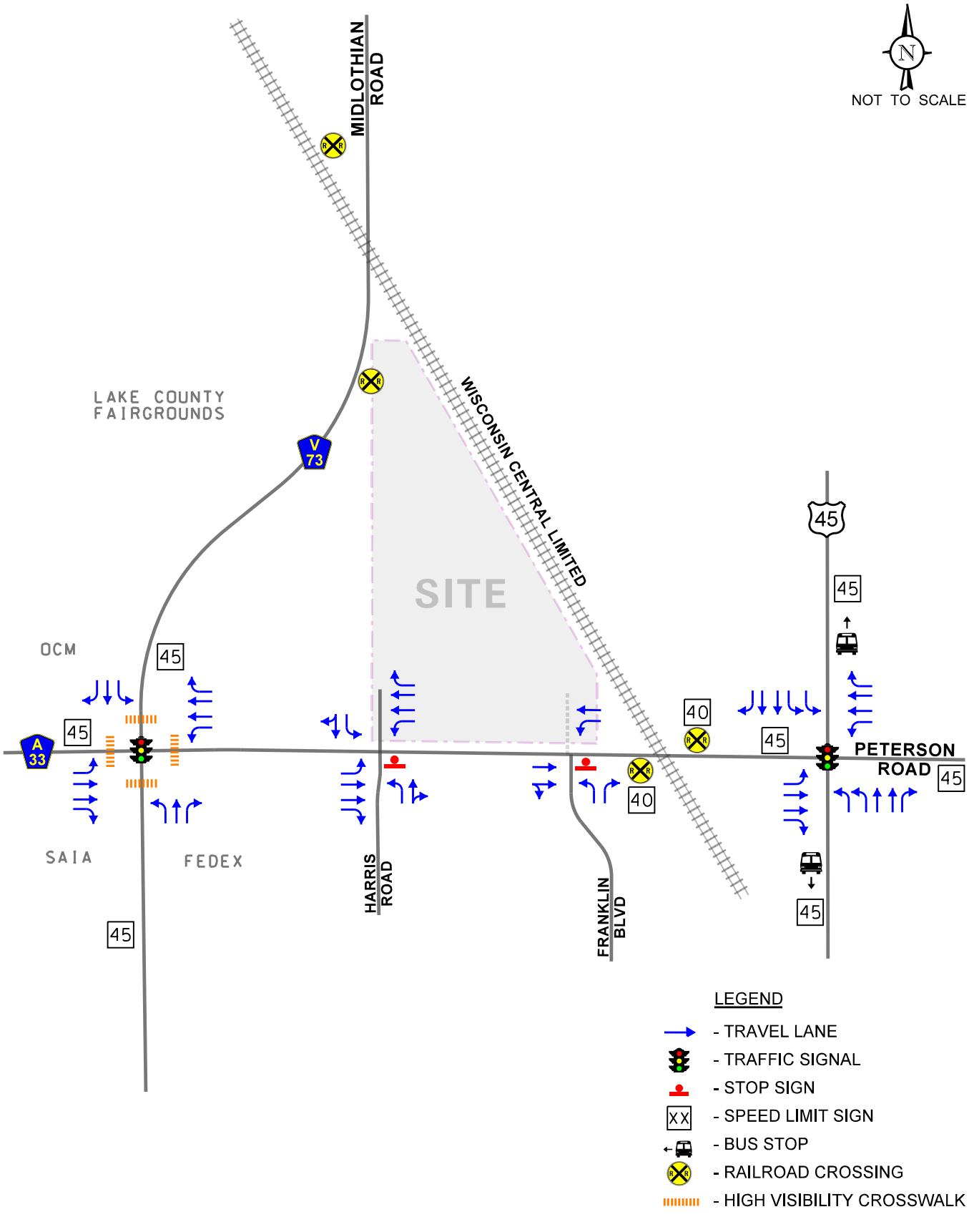
The development site is bounded by a Wisconsin Central Limited railroad to the east, Peterson Road to the south, and the east boundary of Grayslake to the west. Land uses in the vicinity of the site are primarily industrial, warehouse, and distribution. The Lake County Fairgrounds are located in the northwest corner of the intersection of Peterson Road with Midlothian Road.

Existing Roadway System Characteristics

The characteristics of the existing roadways near the development are described below and illustrated in **Figure 3**.

Peterson Road (Lake County Highway A33) is an east-west, principal arterial roadway that provides two lanes in each direction generally divided by a landscape median. At its signalized intersections with Midlothian Road and US Route 45 and its unsignalized intersection with Harris Road, Peterson Road provides an exclusive left-turn lane, two through lanes, and an exclusive right-turn lane on both approaches. At its unsignalized intersection with Franklin Boulevard, Peterson Road provides a through lane and a shared through/right-turn lane on the eastbound approach and an exclusive left-turn lane and two through lanes on the westbound approach. Peterson Road is under the jurisdiction of the Lake County Division of Transportation (LCDOT) and is designated as a Strategic Regional Arterial (SRA) route. Peterson Road carries an Annual Average Daily Traffic (AADT) volume of 20,000 vehicles between Midlothian Road and US Route 45 and 13,900 vehicles east of US Route 45 (Illinois Department of Transportation [IDOT] 2023). Peterson Road has a has a posted speed limit of 45 miles per hour west of US Route 45 and 50 miles per hour east of US Route 45.

Midlothian Road (Lake County Highway V73) is a north-south minor arterial roadway that extends south from Buckley Road and provides one lane in each direction. At its signalized intersections with Peterson Road, Midlothian Road provides an exclusive left-turn lane, a through lane, and an exclusive right-turn lane on both approaches. Midlothian Road is under the jurisdiction of LCDOT, is not classified as an SRA route, and has a posted speed limit of 45 miles per hour. Midlothian Road carries an AADT volume of 3,000 vehicles north of Peterson Road, 7,900 vehicles between Peterson Road and Winchester Road, and 12,200 vehicles south of Winchester Road (IDOT 2023).



Proposed Industrial Development
Libertyville, Illinois

Existing Roadway Characteristics

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 23-258 Figure: 3

US Route 45 is a north-south, principal arterial roadway that provides two lanes in each direction generally separated by a landscape median. At its signalized intersection with Peterson Road, US Route 45 provides dual left-turn lanes, two through lanes, and an exclusive right-turn lane on both approaches. US Route 45 is under the jurisdiction of IDOT, is not designated as an SRA Route, and has a posted speed limit of 45 miles per hour. US Route 45 carries an AADT of 25,900 vehicles north of Peterson Road and 21,600 vehicles south of Peterson Road (IDOT 2023).

Harris Road is a north-south local roadway that extends between Winchester Road and its terminus approximately 380 feet north of Peterson Road. Harris Road provides one lane in each direction. At its unsignalized intersection with Peterson Road, Harris Road provides an exclusive left-turn lane and a shared through/right-turn lane on both approaches and is under stop sign control. Harris Road is under the jurisdiction of the village of Libertyville.

Franklin Boulevard is a north-south local roadway that extends between Winchester Road and Peterson Road. Franklin Boulevard provides one lane in each direction. At its unsignalized intersection with Peterson Road, Franklin Boulevard provides an exclusive left-turn lane and an exclusive right-turn lane on both approaches and is under stop sign control. Harris Road is under the jurisdiction of the village of Libertyville.

Existing Traffic Volumes

In order to determine current traffic conditions within the study area, peak period traffic classification counts were conducted at the following intersections:

- Peterson Road with US Route 45
- Peterson Road with Franklin Boulevard
- Peterson Road with Harris Road
- Peterson Road with Midlothian Road

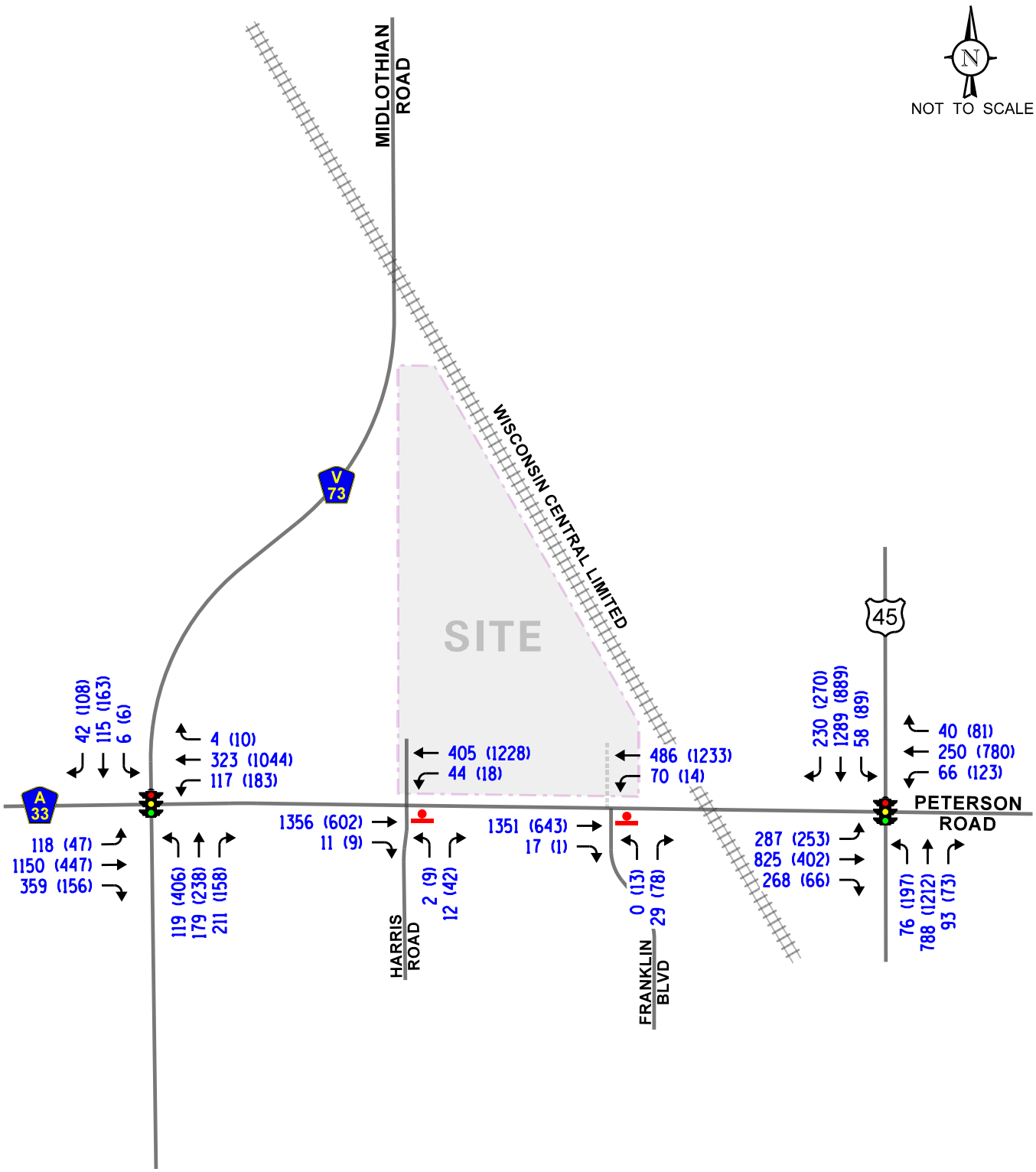
The traffic counts were conducted on Wednesday, September 10, 2025. The traffic counts were conducted during the weekday morning (7:00 A.M. to 9:00 A.M.) and weekday evening (4:00 P.M. to 6:00 P.M.) peak periods. The results of the traffic counts show that the peak hours of traffic generally occur from 7:15 to 8:15 A.M. during the weekday morning peak period and from 4:30 to 5:30 P.M. during the weekday evening peak period.

The existing traffic volumes, inclusive of heavy vehicles, are illustrated in **Figure 4.** The existing heavy vehicle traffic volumes are illustrated in **Figure 5**.

Crash Data Summary

KLOA, Inc. obtained crash data[1] for the most recent available five years (2020 to 2024) for the study area intersections. A review of the crash data indicated the intersection of Peterson Road with Franklin Boulevard experienced an average of less than one crash per year. Further, two fatalities were reported at the intersections during the review period. The crash data for the remaining intersections is summarized in **Tables 1** through **4.**

[1] IDOT DISCLAIMER: The motor vehicle crash data referenced herein was provided by the Illinois Department of Transportation. The author is responsible for any data analyses and conclusions drawn.



Proposed Industrial Development
Libertyville, Illinois

Existing Traffic Volumes

KLOA
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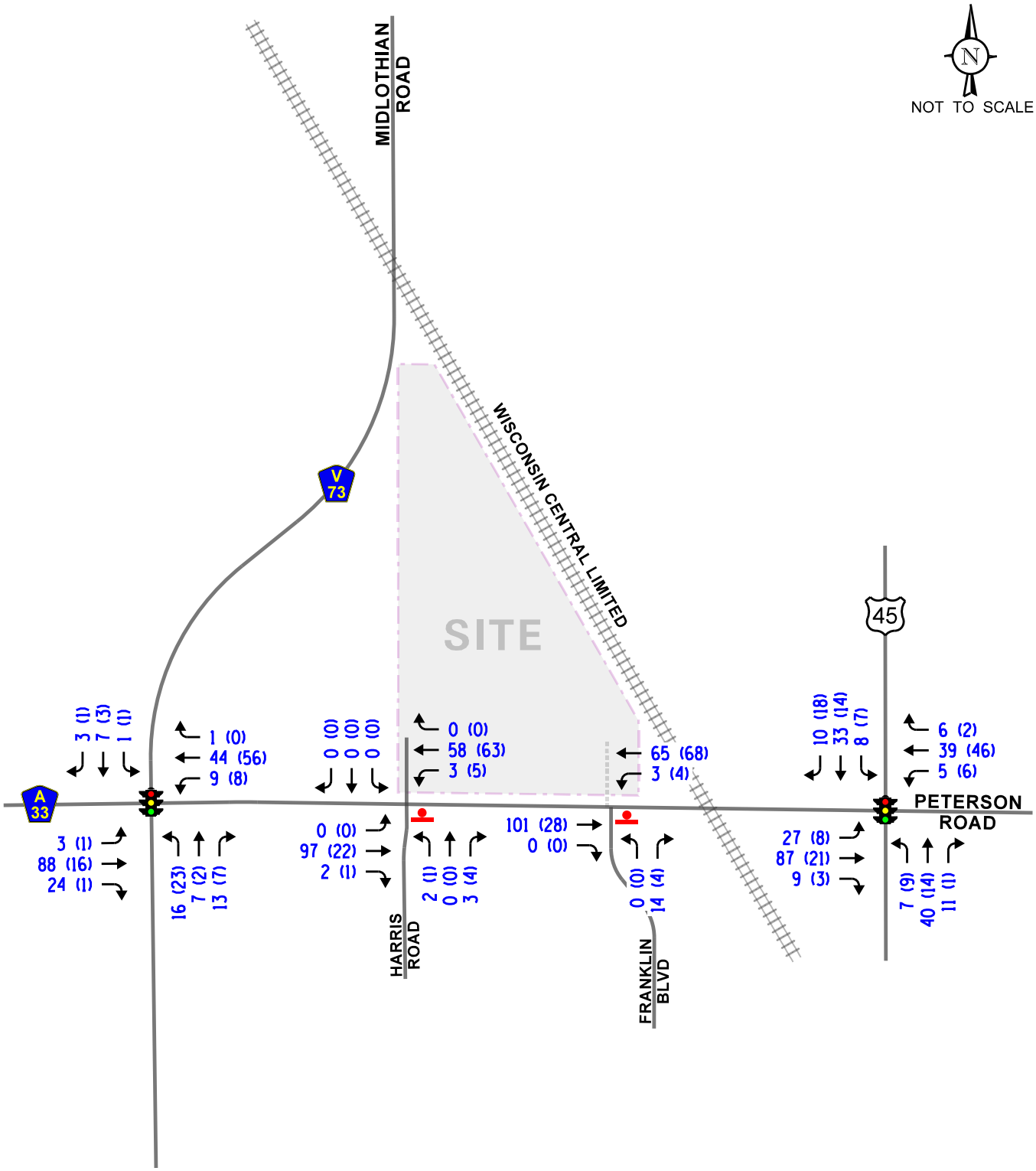
Job No: 23-258 Figure: 4



LEGEND

00 - AM PEAK HOUR (7:15-8:15 AM)

(00) - PM PEAK HOUR (4:30-5:30 PM)

Proposed Industrial Development Libertyville, Illinois	Existing Traffic Volumes Trucks	KLOA Kenig,Lindgren,O'Hara,Aboona,Inc. Job No: 23-258 Figure: 5

Table 1
PETERSON ROAD WITH IL 83– CRASH SUMMARY

Year	Type of Crash								Severity		
	A	HO	O	RE	S	T	Other	Total	PD	I	F
2020	1	0	0	2	0	2	0	5	3	2	0
2021	0	0	0	2	0	3	2	7	5	1	1
2022	1	0	0	4	0	2	0	7	4	3	0
2023	0	0	0	5	0	1	0	6	3	3	0
2024	3	0	0	2	0	2	0	7	4	3	0
Total	**5**	**0**	**0**	**15**	**0**	**10**	**2**	**32**	**19**	**12**	**1**
Avg	**1.0**	**--**	**--**	**3.0**	**--**	**2.0**	**<1.0**	**6.4**	**3.8**	**2.4**	**<1.0**

A – Angle; HO – Head On; O – Object; RE – Rear End; S – Sideswipe; T – Turning
PD – Property Damage; I – Injury; F - Fatal

Table 2
PETERSON ROAD WITH MIDLOTHIAN ROAD – CRASH SUMMARY

Year	Type of Crash								Severity		
	A	HO	O	RE	S	T	Other	Total	PD	I	F
2020	0	0	0	0	0	3	1	4	1	3	0
2021	1	0	0	0	0	1	1	3	0	3	0
2022	0	0	0	1	1	2	0	4	4	0	0
2023	4	0	0	2	0	2	0	8	3	5	0
2024	0	0	0	1	0	2	0	3	1	2	0
Total	**5**	**0**	**0**	**4**	**1**	**10**	**2**	**22**	**9**	**13**	**0**
Avg	**1.0**	**--**	**--**	**<1.0**	**<1.0**	**2.0**	**<1.0**	**4.4**	**1.8**	**2.6**	**--**

A – Angle; HO – Head On; O – Object; RE – Rear End; S – Sideswipe; T – Turning
PD – Property Damage; I – Injury; F - Fatal

Table 3
PETERSON ROAD WITH US ROUTE 45 – CRASH SUMMARY

Year	Type of Crash								Severity		
	A	HO	O	RE	S	T	Other	Total	PD	I	F
2020	1	0	0	4	1	5	0	11	7	4	0
2021	0	0	0	10	1	5	0	16	10	6	0
2022	2	1	0	5	0	4	0	12	8	4	0
2023	3	0	1	8	0	9	0	21	11	9	1
2024	2	0	0	4	2	6	0	14	12	2	0
Total	**8**	**1**	**1**	**31**	**4**	**29**	**0**	**74**	**48**	**25**	**1**
Avg	**1.6**	**<1.0**	**<1.0**	**6.2**	**<1.0**	**5.8**	**--**	**14.8**	**9.6**	**5.0**	**<1.0**

A – Angle; HO – Head On; O – Object; RE – Rear End; S – Sideswipe; T – Turning
PD – Property Damage; I – Injury; F – Fatal

Table 4
PETERSON ROAD WITH HARRIS ROAD– CRASH SUMMARY

Year	Type of Crash								Severity		
	A	HO	O	RE	S	T	Other	Total	PD	I	F
2020	0	0	0	0	0	2	0	2	2	0	0
2021	0	0	0	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0	0	0	0
2023	0	0	0	1	0	1	0	0	1	1	0
2024	0	0	0	0	0	1	0	0	1	0	0
Total	**0**	**0**	**0**	**1**	**0**	**4**	**0**	**5**	**4**	**1**	**0**
Avg	**--**	**--**	**--**	**<1.0**	**--**	**<1.0**	**--**	**1.0**	**<1.0**	**<1.0**	**--**

A – Angle; HO – Head On; O – Object; RE – Rear End; S – Sideswipe; T – Turning
PD – Property Damage; I – Injury; F - Fatal

3. Traffic Characteristics of the Proposed Development

In order to properly evaluate future traffic conditions in the surrounding area, it was necessary to determine the traffic characteristics of the proposed development, including the directional distribution and volumes of traffic that it will generate.

Proposed Site and Development Plan

As proposed, the site will be developed to contain a 596,165 square-foot industrial facility which includes 52,526 square feet of office area, 143,00 square feet of production area, and 400,639 square feet of warehouse area. Access to the development will be provided via the following two access drives:

- A proposed full movement access drive on Peterson Road opposite Harris Road that will serve passenger vehicles and truck traffic.
    - This road will replace the existing segment of Harris Road that terminates north of Peterson Road.
    - This access drive will provide one inbound lane and two outbound lanes striped for an exclusive left-turn lane and a through/right-turn lane.
    - Outbound movements will be under stop sign control.
    - The access drive will be wide enough to accommodate truck turning movements.
    - Inbound left-turn and right-turn movements from Peterson Road can be accommodated within the existing turn lanes.
- A proposed full movement access drive on Peterson Road opposite Franklin Boulevard that will serve passenger vehicles and truck traffic.
    - This access drive will provide one inbound lane and two outbound lanes striped for an exclusive left-turn lane and a through/right-turn lane.
    - Outbound movements will be under stop sign control.
    - The access drive will be wide enough to accommodate truck turning movements.
    - Franklin Boulevard should be restriped for an exclusive left-turn lane and a shared through/right-turn lane.
    - An exclusive eastbound left-turn lane will be warranted on Peterson Road serving this access drive and should be provided. This turn lane could be accommodated within the existing median. This turn lane should provide 215 feet of storage and a 220-foot taper.

A copy of the site plan is included in the Appendix.

Directional Distribution

The directions from which warehouse employees, trucks, and patrons of the commercial uses will approach and depart the development were estimated based on existing travel patterns, as determined from the traffic counts. **Figure 6** illustrates the directional distribution of the development-generated traffic. Figure 6 also shows the distance, in feet, between the existing and proposed access drives.

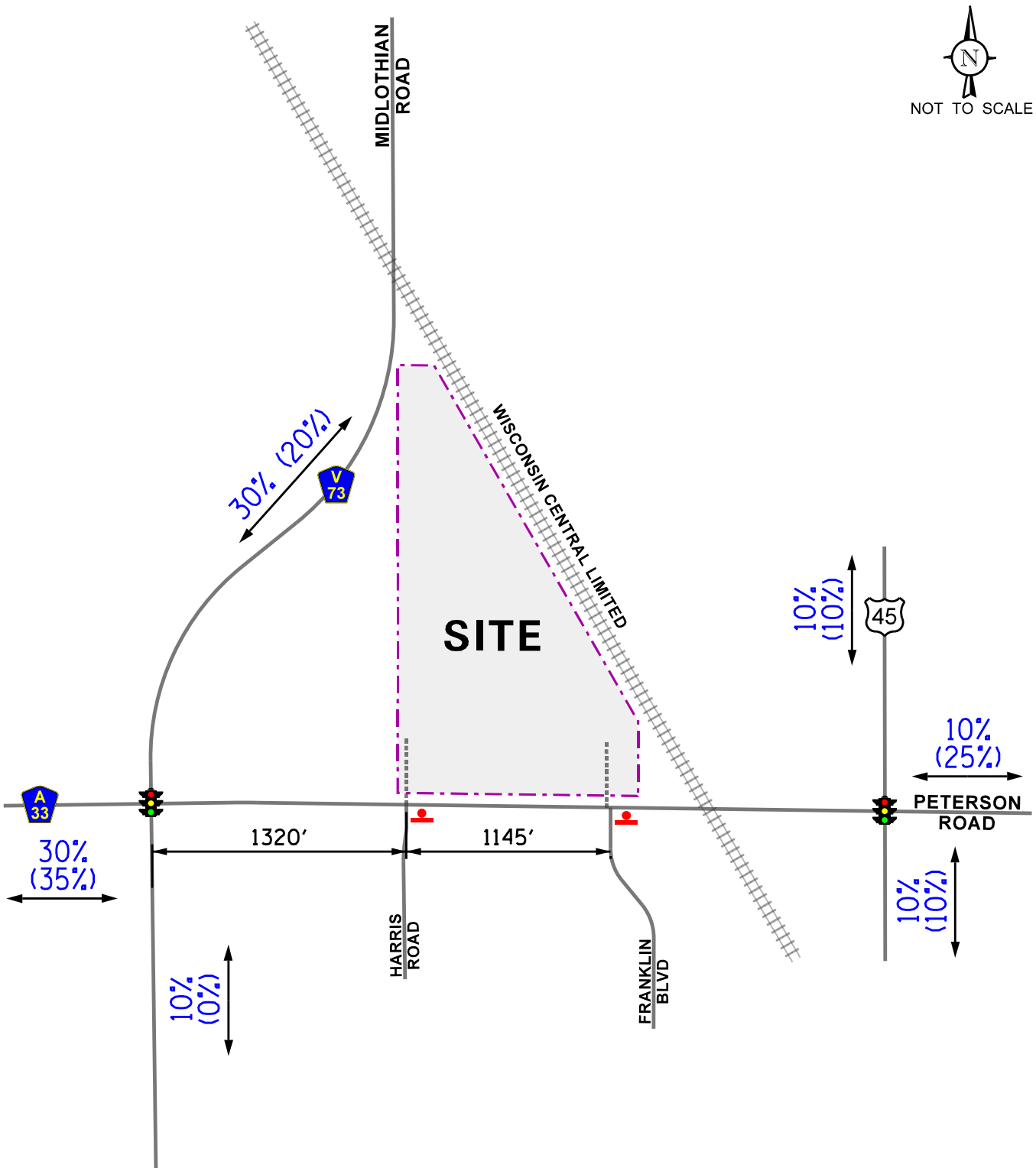
Peak Hour Traffic Volumes

Based on information provided by the operator, the facility will have approximately 411 employees that will rotate between the following three shifts:

- Tuesday to Friday from 4:00 A.M. to 2:00 P.M.
- Tuesday to Friday from 2:30 P.M. to 12:30 A.M.
- Saturday to Monday from 4:00 A.M. to 4:00 P.M.

It should be noted that beginning and end of these shifts occur outside of the peak hours of the roadway system. As such, to provide a conservative analysis, the total number of vehicle trips to be generated by the proposed facility was estimated using trip rates published by the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 12th Edition and surveys conducted by KLOA, Inc. The "Warehousing" rate (ITE Land-Use Code 150) was used. Copies of the ITE trip generation sheets are included in the Appendix.

The projected peak hour and daily trips estimated to be generated by the development are shown in **Table 5** and the hourly truck trips estimated to be generated by the warehouse buildings are shown in **Table 6**.



Proposed Industrial Development
Libertyville, Illinois

Directional Distribution

KLOA
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Job No: 23-258 Figure: 6

Table 5
ESTIMATED PEAK HOUR AND DAILY TRIP GENERATION

ITE Land-Use Code	Type/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Daily Trips		
		In	Out	Total	In	Out	Total	In	Out	Total
150	**Warehousing (596,165 s.f.)**	**56**	**17**	**73**	**24**	**61**	**85**	**416**	**416**	**832**
	Truck Trips	*6*	*6*	*12*	*6*	*6*	*12*	*128*	*128*	*256*
Passenger Vehicle Trips		*50*	*11*	*61*	*18*	*55*	*73*	*288*	*288*	*576*

Table 6
ESTIMATED 24-HOUR TRUCK TRIP GENERATION – WAREHOUSE BUILDINGS

Hour	Warehousing (ITE Land-Use Code 150) – 596,165 s.f.					
	Weekday Morning			Weekday Evening		
	In	Out	Total	In	Out	Total
12:00	5	4	**9**	14	17	**31**
1:00	6	6	**12**	13	15	**28**
2:00	8	7	**15**	12	12	**24**
3:00	7	8	**15**	12	212	**24**
4:00	11	9	**20**	10	10	**20**
5:00	13	11	**24**	8	9	**17**
6:00	16	15	**31**	8	8	**16**
7:00	16	16	**32**	7	6	**13**
8:00	15	16	**31**	6	6	**12**
9:00	18	16	**34**	5	6	**11**
10:00	19	20	**39**	5	5	**10**
11:00	17	18	**35**	5	4	**9**

Based on daily truck trips (Table 1) and ITE's Hourly Distribution of Entering and Exiting Truck Trips tables.

4. Projected Traffic Conditions

The total projected traffic volumes take into consideration the existing traffic volumes, increase in background traffic due to growth, and the traffic estimated to be generated by the proposed subject development.

Development Traffic Assignment

The estimated weekday morning and weekday evening traffic volumes that will be generated by the proposed development were assigned to the roadway system in accordance with the previously described directional distribution (Figure 6).

- **Figure 7** illustrates the traffic assignment of the new warehouse passenger vehicle trips.
- **Figure 8** illustrates the traffic assignment of the new warehouse truck traffic.

Background (No-Build) Traffic Conditions

The Year 2027 no-build traffic volumes include the following:

- The existing traffic volumes (Figure 4) were increased by a regional growth factor to account for the increase in existing traffic related to regional growth in the area (i.e., not attributable to any planned development). Based on LCDOT guidelines, the traffic volumes were increased by three percent for two years for a total of six percent.

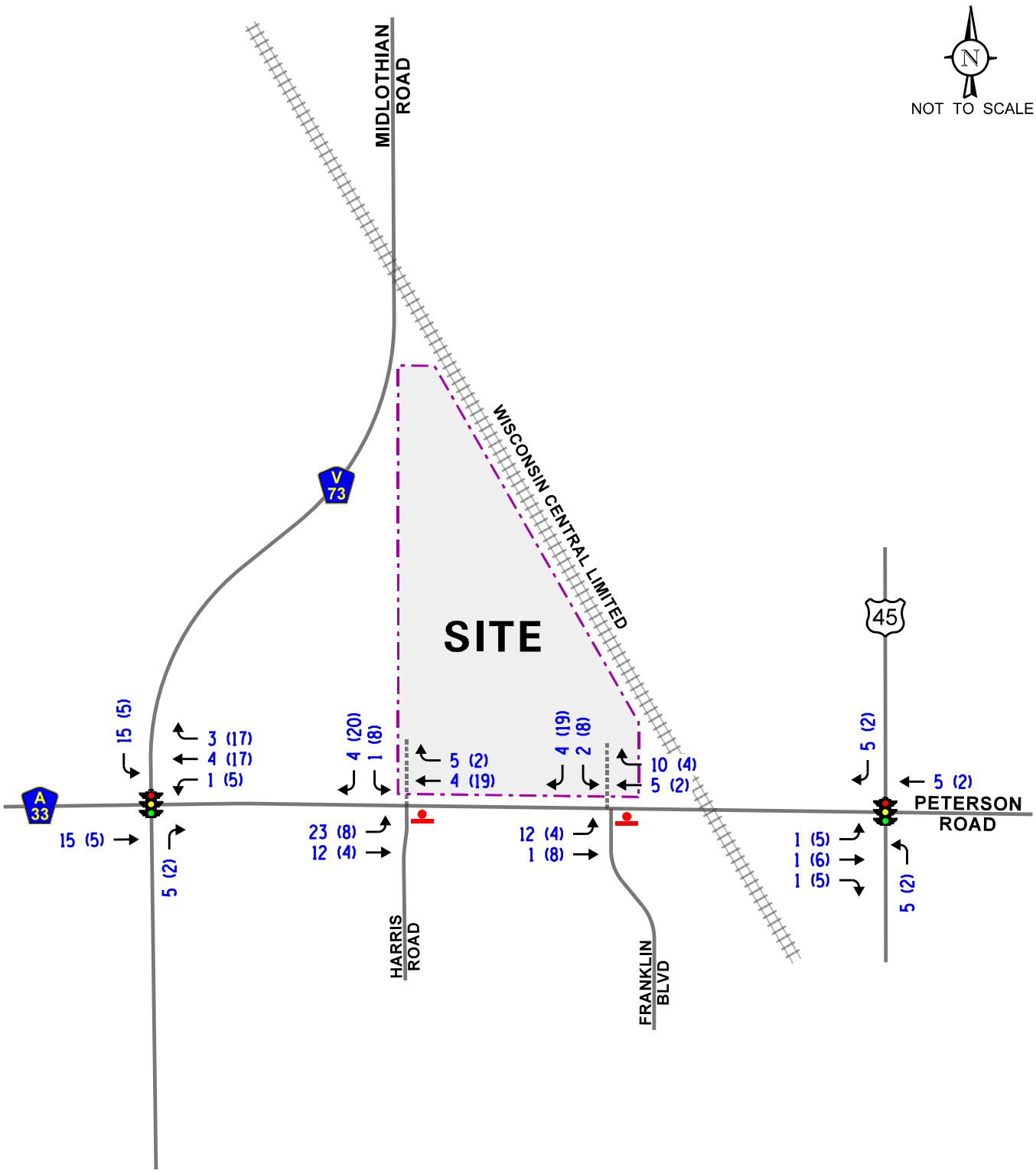
- The traffic that will be generated by the proposed warehouse development in the southeast corner of Peterson and IL 83. The traffic that will be generated by this development was based on the KLOA, Inc. traffic study dated June 21, 2024.

- The traffic that will be generated by the proposed warehouse and residential development on the north side of Peterson Road. The total number of vehicle trips to be generated by the proposed facility was estimated using trip rates published by the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 12th Edition.

- The traffic to be generated by a warehouse development in the northeast corner of Cornerstone Parkway and Peterson Road. The total number of vehicle trips to be generated by the proposed facility was estimated using trip rates published by the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 12th Edition.

- The traffic that will be generated by the proposed residential development on IL 83. The traffic that will be generated by this development was based on the KLOA, Inc. traffic study dated March 18, 2025.

The Year 2027 no-build traffic volumes are illustrated in **Figure 9**.

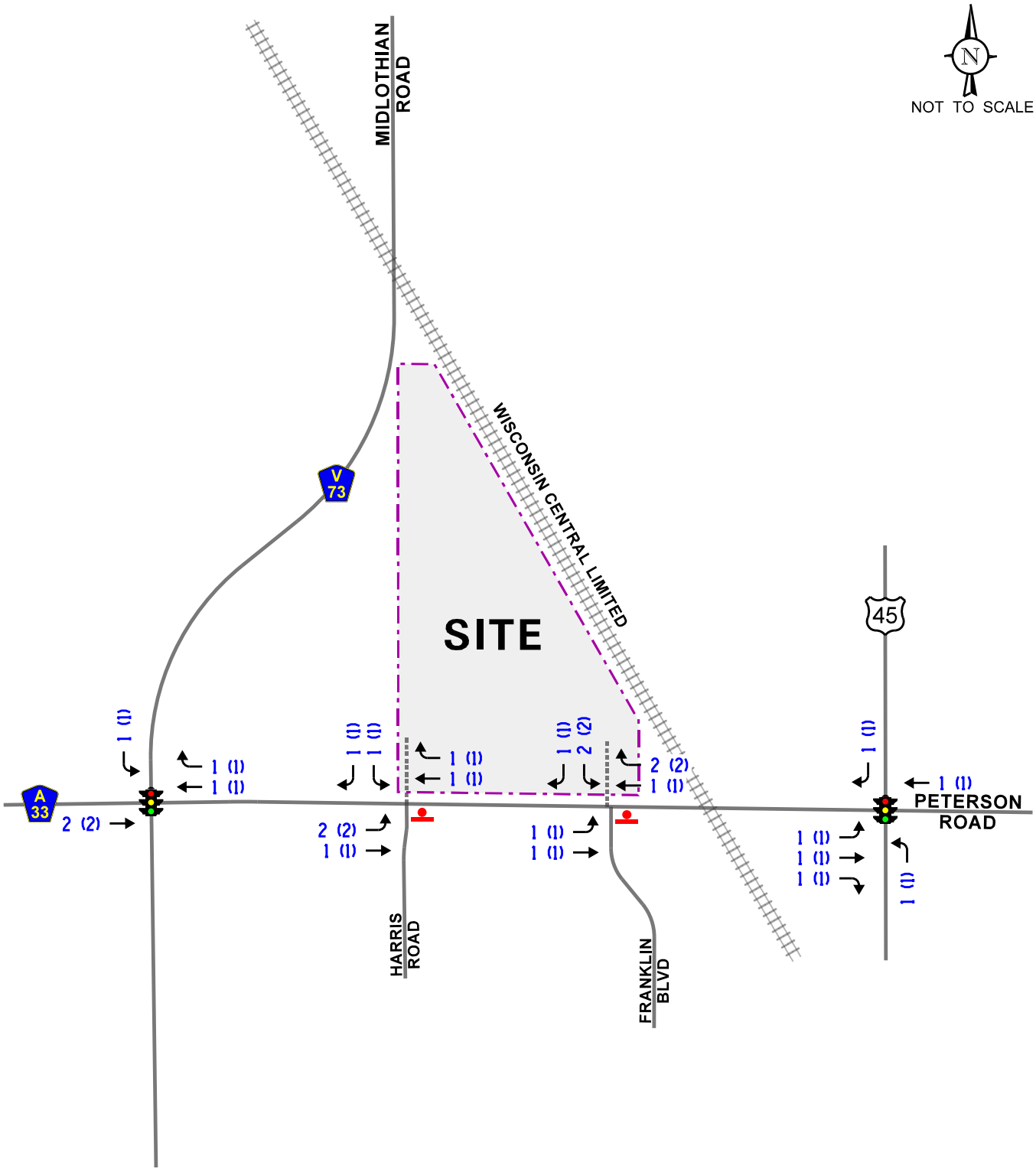


Proposed Industrial Development
Libertyville, Illinois

New Site Traffic Volumes
Passenger

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 23-258 Figure: 7

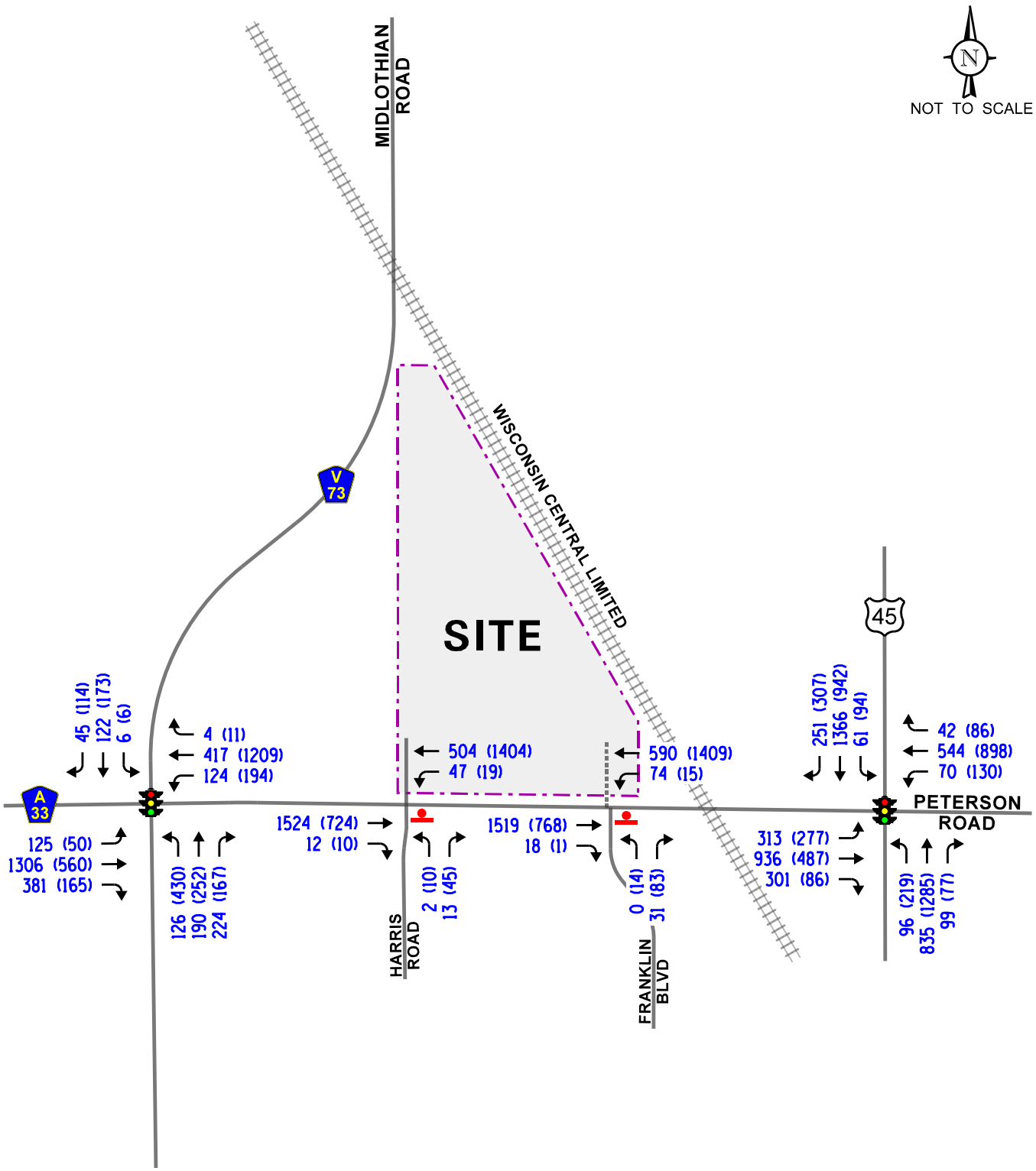


LEGEND

00 - AM PEAK HOUR (7:15-8:15 AM)

(00) - PM PEAK HOUR (4:30-5:30 PM)

Proposed Industrial Development Libertyville, Illinois	New Site Traffic Volumes Trucks	KLOA Kenig,Lindgren,O'Hara,Aboona,Inc. Job No: 23-258 Figure: 8



Proposed Industrial Development
Libertyville, Illinois

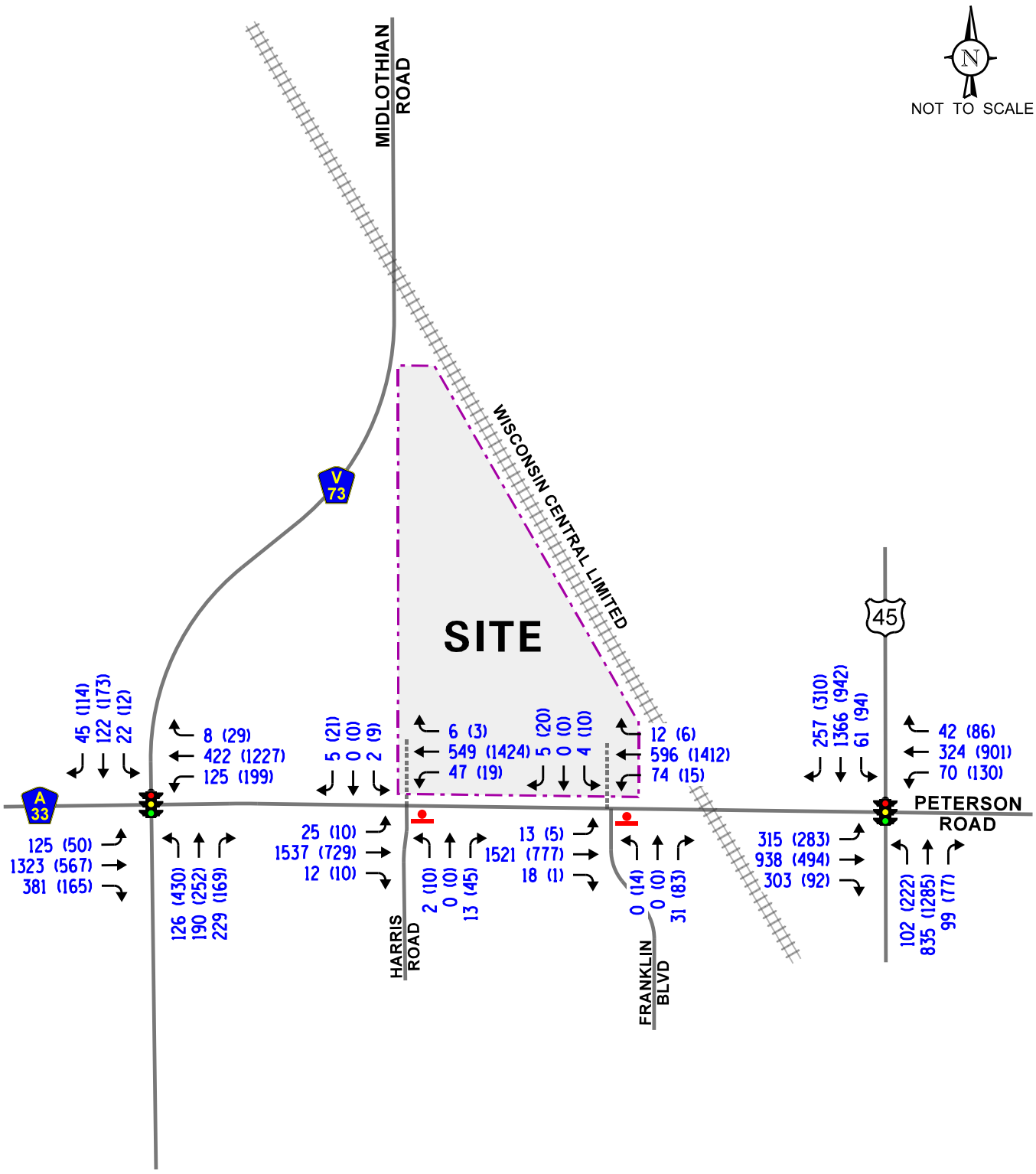
Year 2027 No-Build Traffic Volumes

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 25-258 Figure: 9

Total Projected Traffic Volumes

The development-generated traffic (Figures 7 and 8) was added to the Year 2027 no-build traffic volumes (Figure 9) to determine the Year 2027 total projected traffic volumes, as shown in **Figure 10.**



LEGEND

00 - AM PEAK HOUR (7:15-8:15 AM)

(00) - PM PEAK HOUR (4:30-5:30 PM)

Proposed Industrial Development Libertyville, Illinois	Year 2027 Total Traffic Volumes	KLOA Kenig,Lindgren,O'Hara,Aboona,Inc. Job No: 25-258 Figure: 10

5. Traffic Analysis and Recommendations

The following provides an evaluation conducted for the weekday morning and evening peak hours. The analysis includes conducting capacity analyses to determine how well the roadway system and access drives are projected to operate and whether any roadway improvements or modifications are required.

Traffic Analyses

Roadway and adjacent or nearby intersection analyses were performed for the weekday morning and evening peak hours for the existing, Year 2027 no-build, and Year 2027 total projected traffic volumes.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM),* 7th Edition and analyzed using Synchro/SimTraffic 12 software. The analysis for the traffic signal-controlled intersections were performed using actual cycle lengths, phasings, and offsets to determine the average overall vehicle delay and levels of service.

The analyses for the unsignalized intersections determine the average control delay to vehicles at an intersection. Control delay is the elapsed time from a vehicle joining the queue at a stop sign (includes the time required to decelerate to a stop) until its departure from the stop sign and resumption of free flow speed. The methodology analyzes each intersection approach controlled by a stop sign and considers traffic volumes on all approaches and lane characteristics.

The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter from A to F based on the average control delay experienced by vehicles passing through the intersection. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for signalized intersections and unsignalized intersections are included in the Appendix of this report.

Summaries of the traffic analysis results showing the level of service and overall intersection delay (measured in seconds) for the existing, Year 2027 no-build, and Year 2027 total projected conditions are presented in **Tables 7** through **11**. A discussion of each intersection follows. Summary sheets for the capacity analyses are included in the Appendix

Table 7
CAPACITY ANALYSIS RESULTS – PETERSON ROAD WITH MIDLOTHIAN ROAD – SIGNALIZED

	Peak Hour	Eastbound			Westbound			Northbound			Southbound			Overall
		L	T	R	L	T	R	L	T	R	L	T	R	
Existing Conditions	Weekday Morning	A 8.6	C 24.4	A 1.8	B 15.7	B 15.4	A 0.0	C 33.1	D 40.7	A 4.2	C 26.0	D 50.8	A 5.0	B 20.0
		B – 18.2			B – 15.4			C – 23.8			D – 38.1			
	Weekday Evening	B 14.1	C 23.7	A 2.2	B 14.1	C 26.8	A 0.0	E 67.9	C 32.7	A 3.0	C 21.0	D 50.6	B 10.4	C 29.5
		B – 17.8			C – 24.7			D – 44.7			C – 34.3			
Year 2027 No-Build Conditions	Weekday Morning	A 9.1	C 28.7	A 1.9	C 28.8	B 16.5	A 0.0	C 33.2	D 40.6	A 4.0	C 25.7	D 50.8	A 5.6	C 22.6
		C -21.8			B – 19.2			C – 23.7			D – 38.2			
	Weekday Evening	B 16.2	C 25.2	A 2.2	B 15.6	C 31.1	A 0.0	F 83.1	C 32.6	A 2.9	C 20.5	D 50.6	B 10.8	C 33.3
		B – 19.7			C – 28.8			D – 52.3			C – 34.5			
Year 2027 Total Projected Conditions	Weekday Morning	A 9.3	C 29.6	A 2.2	C 29.1	B 16.8	A 0.0	C 32.9	D 43.7	A 5.2	C 26.4	D 50.1	A 5.4	C 23.3
		C – 22.5			B – 19.3			C – 25.0			D – 36.8			
	Weekday Evening	B 16.3	C 25.5	A 2.2	B 15.8	C 32.0	A 0.1	F 85.1	C 34.7	A 3.0	C 21.1	D 50.6	B 10.8	C 33.8
		B – 20.0			C – 29.2			D – 53.8			C – 34.2			

Letter denotes Level of Service
Delay is measured in seconds.

L – Left Turns
R – Right Turns
T – Through

Table 8
CAPACITY ANALYSIS RESULTS – PETERSON ROAD WITH US ROUTE 45 – SIGNALIZED

	Peak Hour	Eastbound			Westbound			Northbound			Southbound			Overall
		L	T	R	L	T	R	L	T	R	L	T	R	
Existing Conditions	Weekday Morning	D 38.2	E 59.8	C 20.4	C 30.9	D 42.0	A 0.3	E 57.3	C 27.7	A 3.2	E 57.1	D 45.9	A 3.0	D 39.3
		D – 47.6			D – 35.2			C – 27.7			D – 40.1			
	Weekday Evening	D 46.3	C 32.7	A 4.6	C 21.7	D 46.3	A 8.9	E 67.1	D 51.9	A 6.3	E 63.8	D 43.1	B 16.6	D 42.8
		C – 34.9			D – 40.2			D – 51.7			D – 38.9			
Year 2027 No-Build Conditions	Weekday Morning	D 50.9	F 89.9	C 22.3	C 31.5	D 44.0	A 0.3	E 58.2	C 28.6	A 3.6	E 57.2	E 58.9	A 5.6	D 50.8
		E – 68.9			D – 37.7			C – 28.9			D – 50.8			
	Weekday Evening	F 82.3	C 33.6	A 4.2	C 22.1	D 51.1	A 9.5	E 69.6	E 65.4	A 6.6	E 64.2	D 46.4	B 18.2	D 50.0
		D – 46.5			D – 44.5			E – 63.1			D – 41.2			
Year 2027 Total Projected Conditions	Weekday Morning	D 53.6	F 90.6	C 22.4	C 31.5	D 44.3	A 0.3	E 58.7	C 28.6	A 3.6	E 57.2	E 60.2	A 6.3	D 51.5
		E – 69.8			D – 38.0			C – 29.1			D – 51.9			
	Weekday Evening	F 90.6	C 33.7	A 4.1	C 22.1	D 52.0	A 9.5	E 70.0	E 65.4	A 6.6	E 64.2	D 46.4	B 18.3	D 50.6
		D – 49.1			D – 45.2			E – 63.2			D – 41.2			

Letter denotes Level of Service
Delay is measured in seconds.

L – Left Turns
R – Right Turns
T – Through

Table 9
CAPACITY ANALYSIS RESULTS – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Peterson Road with Harris Road				
• Northbound Approach	D	26.5	B	12.7
• Eastbound Left Turn	n.a.	n.a.	n.a.	n.a.
• Westbound Left Turn	B	14.4	A	9.7
Peterson Road with Franklin Boulevard				
• Northbound Approach	C	19.3	B	12.6
• Westbound Left Turn	B	14.4	B	10.0

LOS = Level of Service
Delay is measured in seconds.
1 – All-way stop control
2 – Two-way stop control

Table 10
CAPACITY ANALYSIS RESULTS – YEAR 2027 NO-BUILD CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Peterson Road with Harris Road				
• Northbound Approach	D	32.3	B	14.1
• Eastbound Left Turn	n.a.	n.a.	n.a.	n.a.
• Westbound Left Turn	C	16.4	B	10.3
Peterson Road with Franklin Boulevard				
• Northbound Approach	C	22.2	B	13.9
• Westbound Left Turn	C	16.5	B	10.8

LOS = Level of Service
Delay is measured in seconds.
1 – All-way stop control
2 – Two-way stop control

Table 11
CAPACITY ANALYSIS RESULTS – TOTAL PROJECTED CONDITIONS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Peterson Road with Harris Road/Proposed West Access Drive				
• Northbound Approach	E	35.2	B	14.5
• Eastbound Left Turn	A	9.0	C	15.0
• Westbound Left Turn	C	16.6	B	10.4
• Southbound Approach	C	19.0	D	26.0
Peterson Road with Franklin Boulevard				
• Northbound Approach	C	22.2	B	14.4
• Eastbound Left Turn	A	9.1	B	15.0
• Westbound Left Turn	C	16.6	B	10.6
• Southbound Approach	D	27.8	D	26.2

LOS = Level of Service
Delay is measured in seconds.
1 – All-way stop control
2 – Two-way stop control

Discussion and Recommendations

The following summarizes how the intersections are projected to operate and identifies any roadway and traffic control improvements necessary to accommodate the development-generated traffic.

Peterson Road with Midlothian Road

The results of the capacity analysis indicate that this intersection currently operates at an overall LOS B during the weekday morning peak hour and LOS C during the weekday evening peak hour. It should be noted that northbound and southbound movements operate at LOS D or better during the peak hours except for the northbound left turn during the weekday evening peak hour. This is to be expected due to the limited green time assigned to this movement, the fact that Peterson Road is the major roadway at this intersection, is the coordinated movement, and is designated as an SRA route. Peterson Road movements operate at LOS C or better during both peak hours. Under Year 2027 no-build traffic volumes this intersection is projected to operate at an overall LOS C during the peak hours.

Under Year 2027 total projected conditions, this intersection is projected to continue to operate at an overall LOS C during the weekday morning and weekday evening peak hours. The following should be noted:

- All movements are projected to operate at LOS D or better and with a volume to capacity ratio (v/c) of less than one except the northbound left turn during the weekday evening peak hour which is projected to operate at LOS F. However, as stated before, this is due to the limited green time assigned to this movement.

- Peterson Road movements are projected to operate at LOS C or better during both peak hours.

- Westbound queues from this intersection are not projected to exceed 640 feet and will not block Harris Road/the west site access drive.

As such, this intersection has sufficient reserve capacity to accommodate the proposed development and no additional roadway improvements, or traffic control modifications are recommended or required.

Peterson Road with US Route 45

The results of the capacity analysis indicate that this intersection currently operates at an overall LOS D during the weekday morning peak and weekday evening peak hours. It should be noted that the northbound and southbound left-turn movements operate at LOS E during the peak hours which is due primarily to the fact that the left-turn movements operate on a protected left-turn phase only and receive a limited amount of green time.

Under Year 2027 no-build traffic volumes this intersection is projected to continue to operate at an overall LOS D during the peak hours. It should be noted that under no-build conditions the eastbound through movement operates over capacity (volume to capacity ratio of 1.0 or higher) and at LOS F and the southbound through movement operates over capacity and at LOS E during the weekday morning peak hour. This is the result of the high volume of existing traffic and the traffic that will be generated by other area developments.

Under Year 2027 total projected conditions, this intersection is projected to continue to operate at an overall LOS D during the weekday morning and weekday evening peak hours. The eastbound and southbound through movements are projected to continue operate at or over capacity during the weekday morning and the eastbound left-turn movement is projected to operate at capacity and at LOS F during the weekday evening peak hour. It should be noted that proposed industrial facility will generate primarily inbound traffic during the weekday morning which will travel against the primarily eastbound flow of traffic at this intersection. Further, the traffic to be generated by the proposed development will result in an increase of less than one percent of the traffic at this intersection during both peak hours. Regardless, consideration should be given to adjusting the signal timings at this intersection to better accommodate existing eastbound traffic.

Peterson Road with Harris Road/The West Site Access Drive and Peterson Road with Franklin Boulevard/The East Site Access Drive

The results of the capacity analysis indicate the northbound approaches at the intersection of Peterson Road with Harris Road and Franklin Boulevard currently operate at LOS D or better during the weekday morning and weekday evening peak hours. This is typical and expected at the unsignalized intersection of a local road with a principal arterial road such as Peterson Road. All other critical movements at both intersections currently operate at LOS B or better during both peak hours. Under Year 2027 no-build traffic volumes all movements at both intersections are projected to continue operating at the same LOS during both peak hours except the westbound left-turn movements at both intersections which will operate at LOS C or better.

As proposed, access will be provided to the site via the following:

- A proposed full movement access drive aligned opposite Harris Road that will replace the existing segment of Harris Road that terminates north of Peterson Road. This access drive will provide one inbound lane and two outbound lanes and will be under stop sign control. Inbound left-turn and right-turn movements from Peterson Road can be accommodated within the existing exclusive turn lanes.

- A proposed full movement access drive aligned opposite Franklin Boulevard. This access drive will provide one inbound lane and two outbound lanes and will be under stop sign control.

    - When the total projected volumes at this access drive are compared to the left-turn lane guidelines in LCDOT's *Highway Access and Use Ordinance Technical Reference Manual* (Included in the Appendix), an eastbound left-turn lane is warranted on Peterson Road serving this access drive and should be provided. This turn lane should provide 215 feet of storage and a 220-foot taper and can be accommodated within the existing median.

- When the total projected volumes at this access drive are compared to LCDOT's right-turn lane guidelines, a westbound right-turn lane is *not* warranted on Peterson Road serving this access drive.

Under Year 2027 total projected conditions, existing movements are projected to continue to operate at no-build LOS except the northbound approach during the weekday morning peak hour which is projected to operate at LOS E. The eastbound left-turn movements are projected to operate at LOS C or better and the southbound approaches are projected to operate at LOS D or better. As previously mentioned, this is typical and expected at the unsignalized intersection of a local road/access drive and principal arterial road. The following should be noted:

- The left-turn movements are projected to operate with volume to capacity ratios (v/c) of less than one and 95th percentile queues of less than one vehicles indicating that vehicles will be able to turn on to Peterson Road.

- The signalized intersections of Peterson Road with Midlothian Road and US Route 45 will create breaks in the traffic stream allowing vehicles to exit.

- Passenger vehicles will be able to utilize the median on Peterson Road to perform a two part left-turn.

- Peterson Road is designated as an SRA Route. Given the strict nature of traffic signal warrants on SRA routes, a traffic signal will not be warranted at either intersection by a significant margin.

It should be noted that eastbound and westbound left-turn 95th percentile queues at both intersections can be accommodated within the existing/proposed turn lanes. As such, the proposed access drives will be able to adequately accommodate site-generated traffic.

6. Conclusion

Based on the preceding analyses and recommendations, the following conclusions have been made:

- As proposed, the site will be developed with a 596,165 square-foot industrial facility.
- The signalized intersections within the vicinity of the site generally have sufficient reserve capacity to accommodate the traffic that will be generated by the proposed development.
    - Consideration should be given to adjusting the existing signal timings at the intersection of Peterson Road with US Route 45 to better accommodate existing eastbound volumes.
- Access to the development will be provided via two proposed full movement access drives on Peterson Road.
    - The west access drive on Peterson Road will be served by the existing exclusive left-turn and right-turn lanes.
    - An eastbound left-turn lane is warranted and should be provided serving the east access drive on Peterson Road. The turn lane can be accommodated within the existing median.
- The proposed access system can adequately accommodate site-generated traffic.

Traffic Count Summary Sheets

Prepared by National Data & Surveying Services

Franklin Blvd & CR 20/CR A33/W/E Peterson Rd

Peak Hour Turning Movement Count

ID: 25-780016-003
City: Libertyville

Day: Wednesday
Date: 9/10/2025

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	7:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	4:00 PM - 06:00 PM

CONTROL: 1-Way Stop(NB)

	AM	NOON	PM
TEV	1899	0	1968
PHF	0.95		0.92

SOUTHBOUND (Franklin Blvd)

	L	T	R	U	Total
AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	0	0	0	0	0

EASTBOUND (CR 20/CR A33/W/E Peterson Rd)

	AM	NOON	PM
U	0	0	0
L	452	0	1238
T	0	0	0
R	0	0	0
R	1331	0	637
R	17	0	1

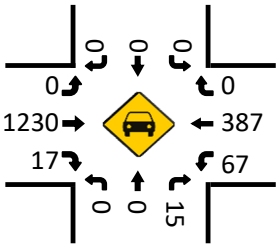
WESTBOUND (CR 20/CR A33/W/E Peterson Rd)

	PM	NOON	AM
U	0	0	0
L	0	0	0
T	1225	0	452
R	14	0	70
R	715	0	1360

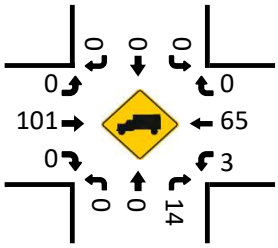
NORTHBOUND (Franklin Blvd)

	L	T	R	U	Total
PM	15	0	13	0	78
NOON	0	0	0	0	0
AM	87	0	0	0	29

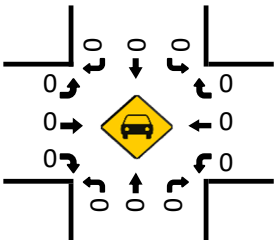
Cars (AM)



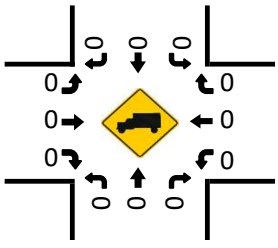
HT (AM)



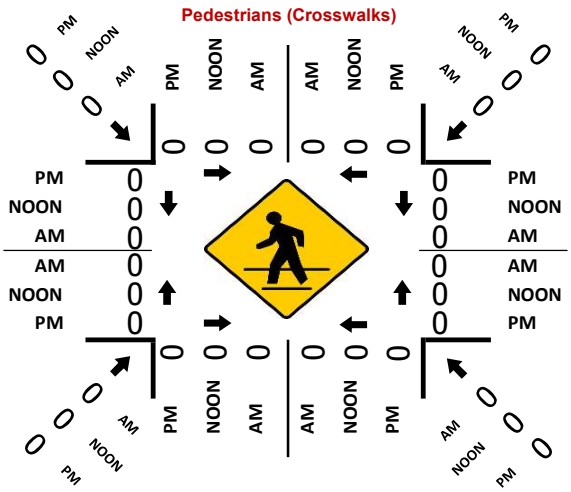
Cars (NOON)



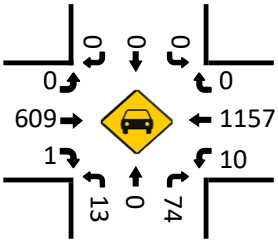
HT (NOON)



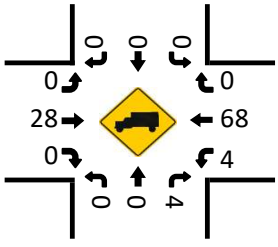
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

N Harris Rd/Harris Rd & CR 20/CR A33/W/E Peterson Rd

Peak Hour Turning Movement Count

ID: 25-780016-002
City: Libertyville

Day: Wednesday
Date: 9/10/2025

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	7:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	4:00 PM - 06:00 PM

CONTROL: 2-Way Stop(NB/SB)

	AM	NOON	PM
TEV	1832	0	1900
PHF	0.93		0.96

N Harris Rd/Harris Rd — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

CR 20/CR A33/W/E Peterson Rd — EASTBOUND

AM	NOON	PM		
408	0	1237	⇦	
1	0	0	↶	0
0	0	0	↱	1
1356	0	594	→	2
11	0	9	↷	1
AM	NOON	PM		

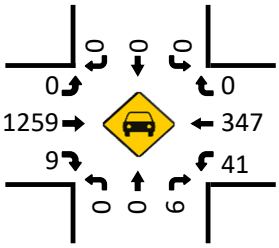
CR 20/CR A33/W/E Peterson Rd — WESTBOUND

PM	NOON	AM		
0	0	0	↶	1
1228	0	405	←	2
18	0	44	↰	1
0	0	1	↷	0
636	0	1369	⇨	
PM	NOON	AM		

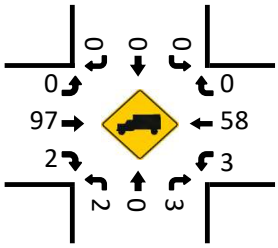
N Harris Rd/Harris Rd — NORTHBOUND

PM	27	0	9	0	42	PM
NOON	0	0	0	0	0	NOON
AM	55	0	2	0	12	AM

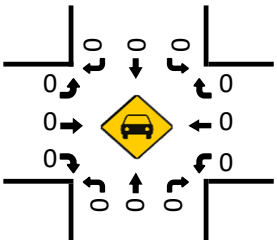
Cars (AM)



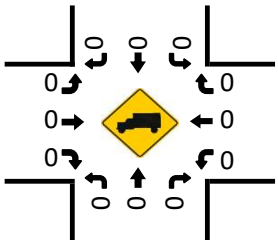
HT (AM)



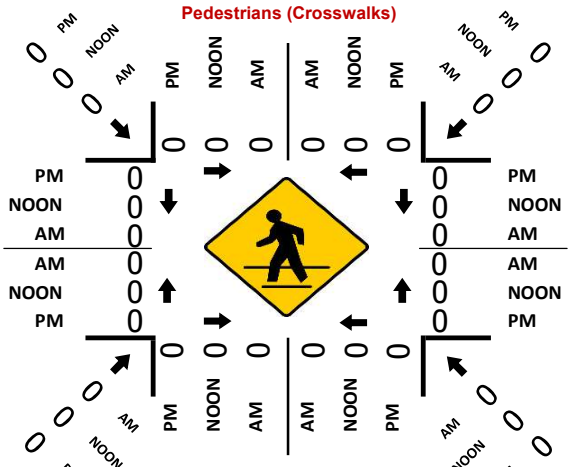
Cars (NOON)



HT (NOON)



Pedestrians (Crosswalks)



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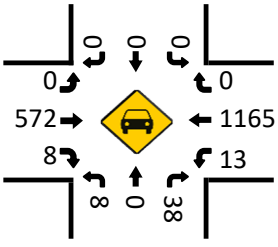
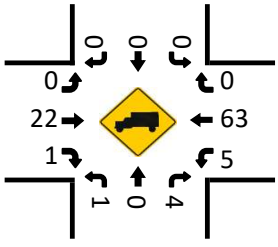


HT (PM)



Prepared by National Data & Surveying Services

CR 48/N Midlothian Rd & CR 20/CR A33/W/E Peterson Rd

Peak Hour Turning Movement Count

ID: 25-780016-001
City: Libertyville

Day: Wednesday
Date: 9/10/2025

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	7:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	4:00 PM - 06:00 PM

CONTROL: Signalized

	AM	NOON	PM
TEV	2694	0	2949
PHF	0.91		0.94

SOUTHBOUND (CR 48/N Midlothian Rd)

	Left	Thru	Right	U-Turn	Approach
AM	42	115	6	0	301
NOON	0	0	0	0	0
PM	108	163	6	0	295

EASTBOUND (CR 20/CR A33/W/E Peterson Rd)

	Left	Thru	Right	U-Turn	Approach
AM	480	0	1547	0	2027
NOON	0	0	0	0	0
PM	1105	0	441	1	1547

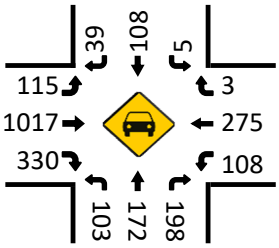
WESTBOUND (CR 20/CR A33/W/E Peterson Rd)

	Left	Thru	Right	U-Turn	Approach
AM	10	0	4	0	14
NOON	1033	0	319	0	1352
PM	183	0	117	0	300

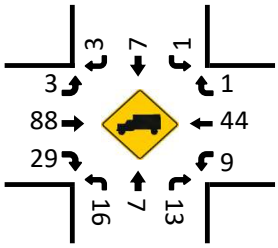
NORTHBOUND (CR 48/N Midlothian Rd)

	Left	Thru	Right	U-Turn	Approach
AM	591	0	119	179	211
NOON	0	0	0	0	0
PM	502	0	406	238	158

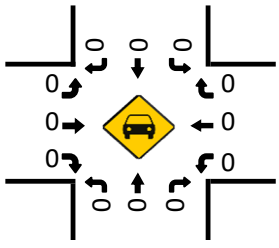
Cars (AM)



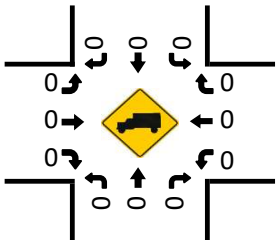
HT (AM)



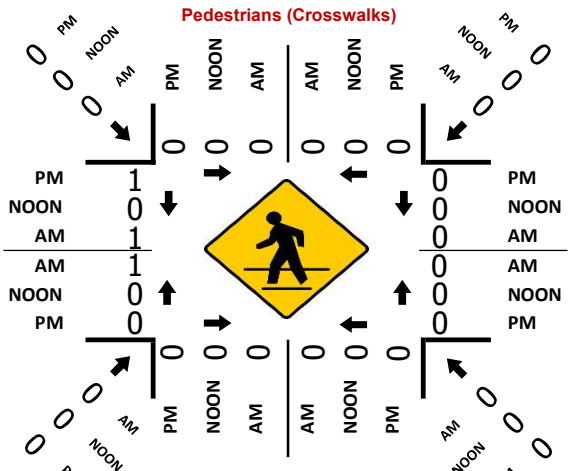
Cars (NOON)



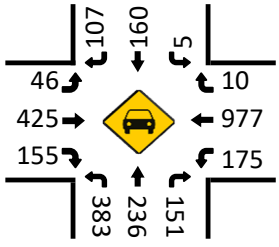
HT (NOON)



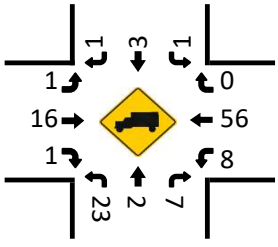
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

US 45/Lake St & CR 20/CR A33/W/E Peterson Rd

Peak Hour Turning Movement Count

ID: 25-780016-004
City: Libertyville

Day: Wednesday
Date: 9/10/2025

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	7:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	4:00 PM - 06:00 PM

SOUTHBOUND (US 45/Lake St)

AM	230	1289	58	0	1094	AM
NOON	0	0	0	0	0	NOON
PM	255	889	89	1	1547	PM
	1	2	2	0		

EASTBOUND (CR 20/CR A33/W/E Peterson Rd)

AM	NOON	PM	
556	0	1177	
0	0	0	0
266	0	253	1
764	0	402	2
248	0	66	1
AM	NOON	PM	

WESTBOUND (CR 20/CR A33/W/E Peterson Rd)

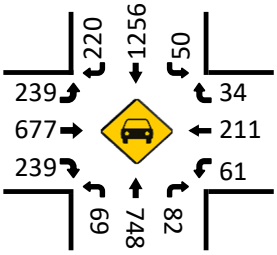
	PM	NOON	AM
1	81	0	40
2	736	0	250
1	123	0	66
0	0	0	0
	564	0	915
	PM	NOON	AM

NORTHBOUND (US 45/Lake St)

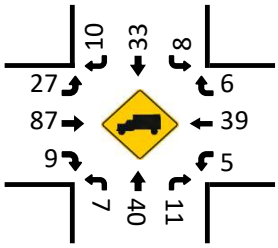
PM	1078	0	186	1212	73	PM
NOON	0	0	0	0	0	NOON
AM	1604	1	76	788	93	AM
		0	2	2	1	

CONTROL			
Signalized			
TEV	4169 AM	0 NOON	4366 PM
PHF	0.90		0.99

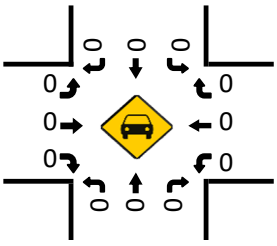
Cars (AM)



HT (AM)



Cars (NOON)



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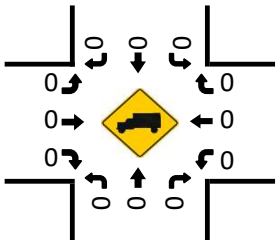
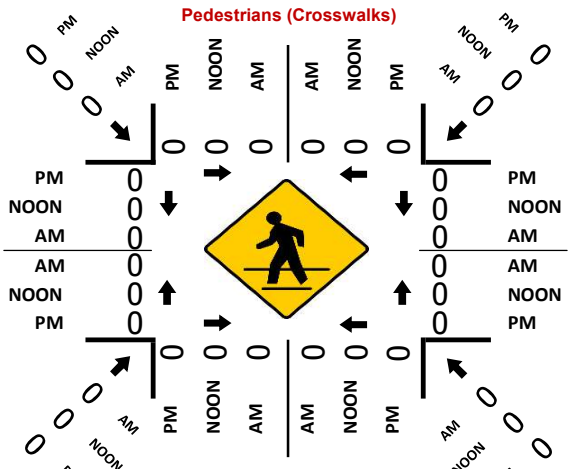


Pedestrians (Crosswalks)



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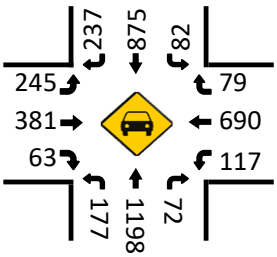
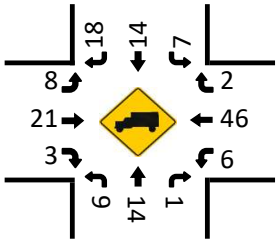


HT (PM)



Site Plan

AREA CALCULATIONS:

SITE AREA: ±1,503,256 SQ. FT.
±34.51 ACRES

BUILDING AREA (GROSS): ±596,165 SQ. FT.
FIRST FLOOR: ±580,450 SQ. FT.
SECOND FLOOR: ±15,715 SQ. FT.
EXTERIOR DOCKS: 47 DOCKS
DRIVE-IN-DOORS: 17 DOORS
TRAILER POSITIONS: 74 POSITIONS
BUILDING HEIGHT(TYP): 45 FEET
BUILDING HEIGHT(ENTRY): 51 FEET
CLEAR HEIGHT: 36 FEET
F.A.R.: .34
LOT COVERAGE 53%
(±919,044 SQ. FT.)

PARKING CALCULATIONS:

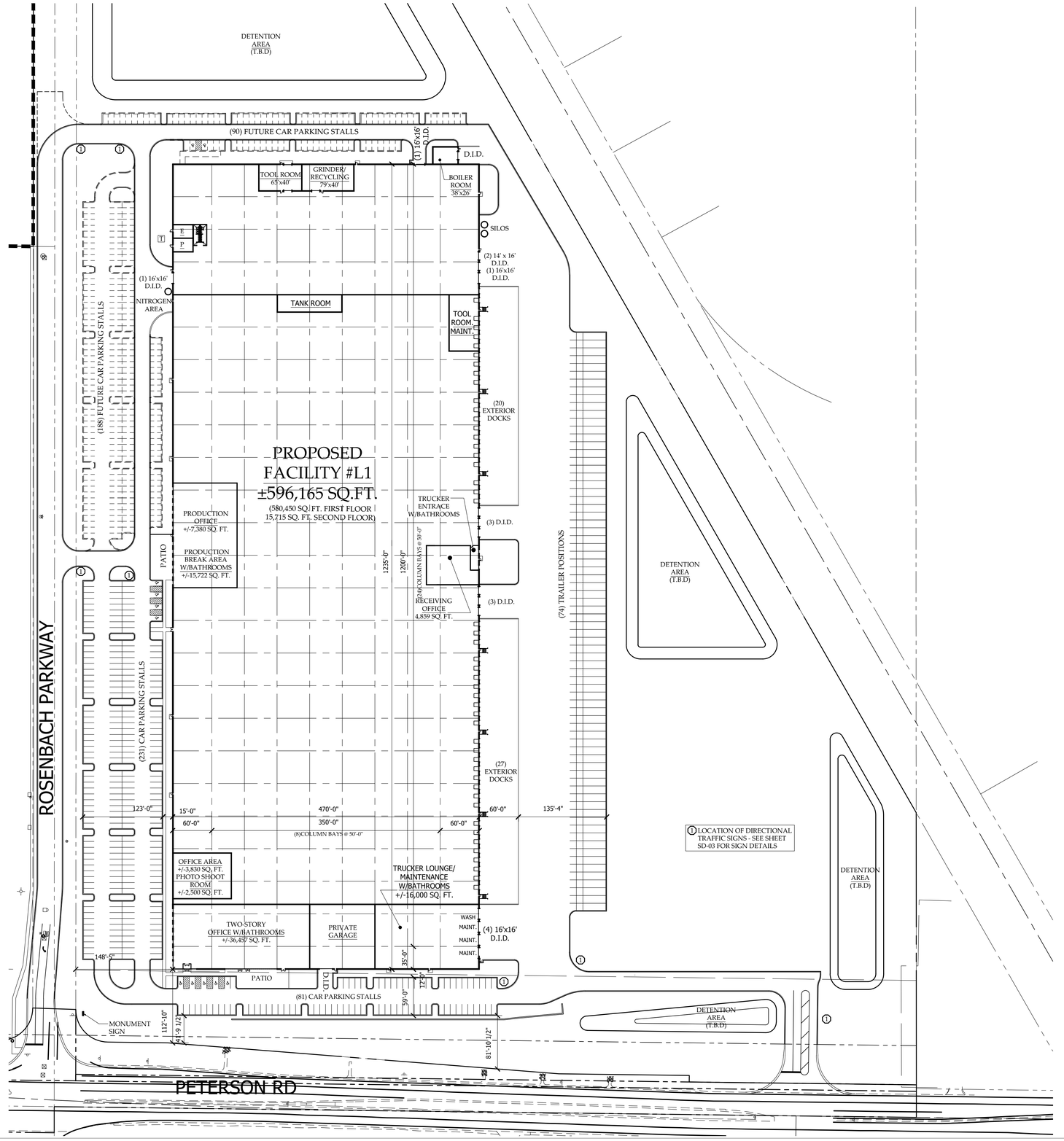
OFFICE AREA: ±52,526 SQ. FT.
REQUIRED CAR PARKING:
(1 CAR/350 SQ. FT.) 150 CARS

PRODUCTION AREA: ±143,000 SQ. FT.
REQUIRED CAR PARKING:
(1 CAR/500 SQ. FT.) 286 CARS

WAREHOUSE AREA: ±400,639 SQ. FT.
REQUIRED CAR PARKING: 120 CARS
(1 CAR/1,000 SQ. FT. UP TO 20,000 SQ. FT.
1 CAR/2,000 SQ. FT. FROM 20,000-40,000 SQ. FT.
1 CAR/4,000 SQ. FT. UP OVER 40,000 SQ. FT.)

REQUIRED CAR PARKING: 556 CARS
PROPOSED CAR PARKING: 556 CARS
ACTUAL: 312 CARS
LANDBANKED: 278 CARS

BUILDING AREA: ±596,165 SQ. FT.
REQUIRED LOADING SPACES:
(1 SPACE/100,000 SQ. FT.) 6 SPACES
PROPOSED LOADING SPACES 10 SPACES



1 SITE PLAN
SCALE: 1" = 80'-0"

NELSON
NELSONWW.com
Principle CONSTRUCTION
9450 West Bryn Mawr Ave. Suite #120
Rosemont, IL 60018
PHONE (847)615-1515
pccdb.com

PROJECT: BATH CONCEPTS INC

PROPOSED FACILITY

100 ROSENBACH PARKWAY
LIBERTYVILLE, ILLINOIS

DATE: 11/14/2025
PROJECT #24.0003194.000

SHEET: SITE PLAN

SP-02
1 of 1

ITE Trip Generation Sheets

Warehouse
(150)

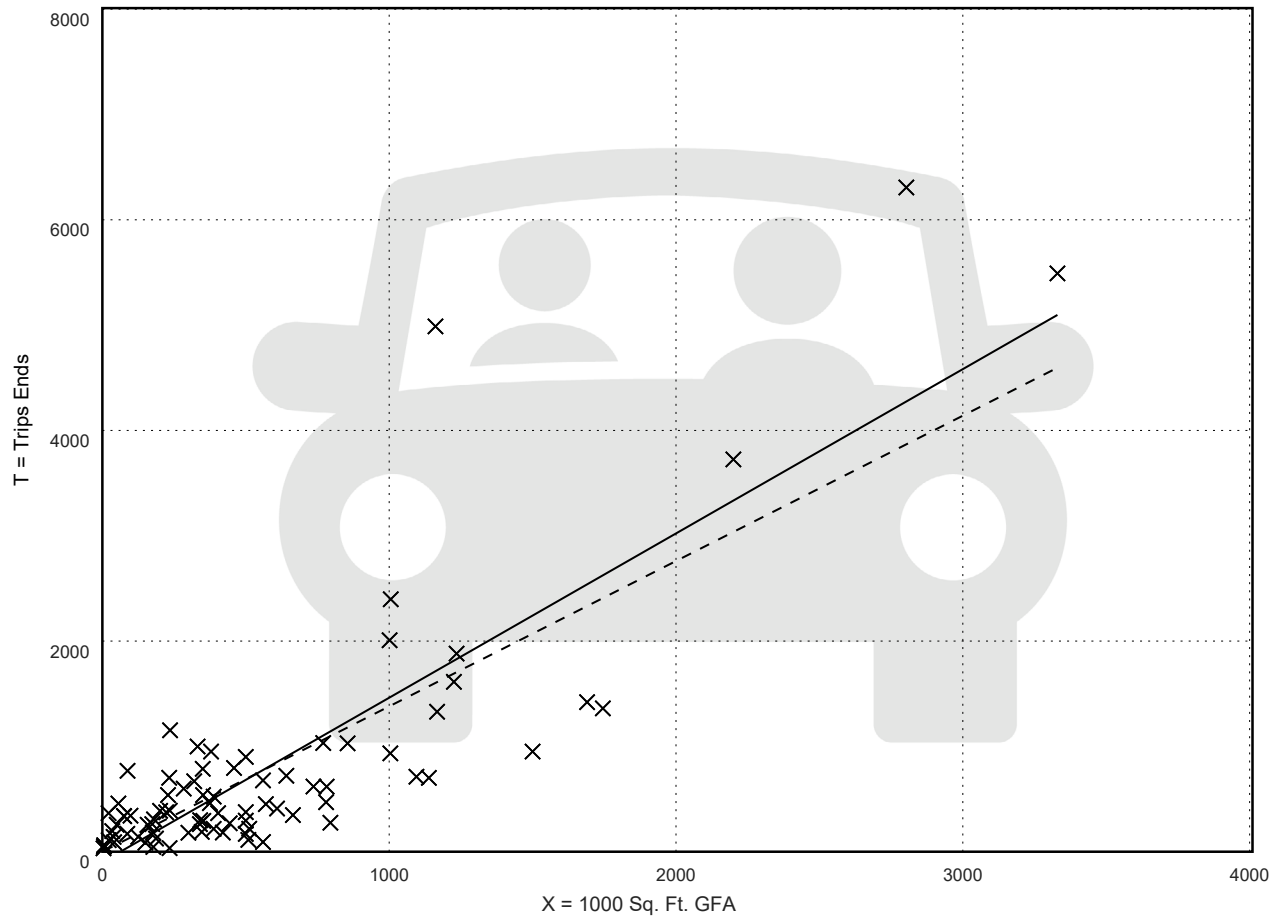
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 81
Avg. 1000 Sq. Ft. GFA: 554
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.38	0.15 - 16.93	1.05

Data Plot and Equation



Fitted Curve Equation: T = 1.56(X) - 97.97

R^2= 0.69

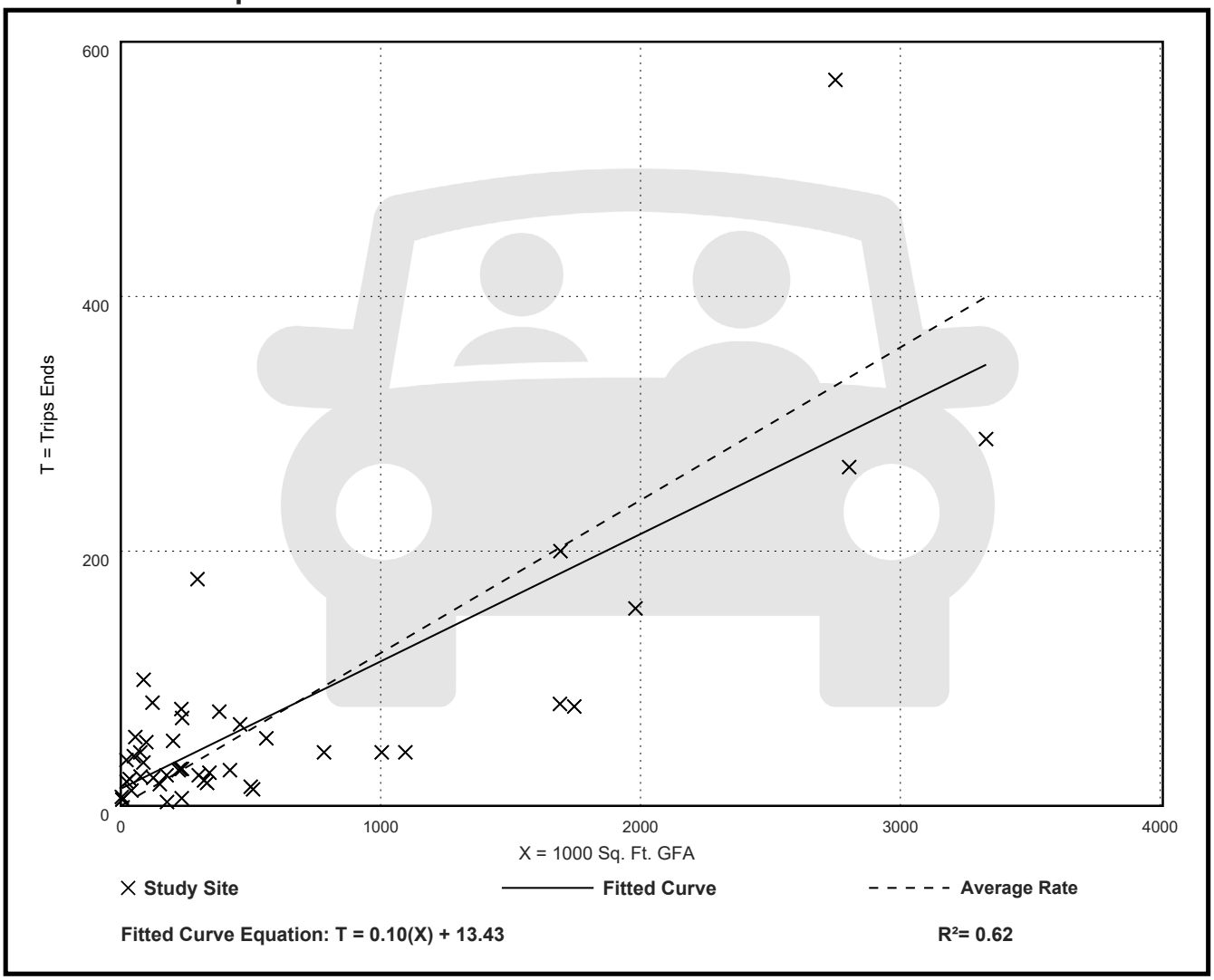
Warehouse
(150)

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: 47
Avg. 1000 Sq. Ft. GFA: 559
Directional Distribution: 77% entering, 23% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.12	0.02 - 1.80	0.14

Data Plot and Equation



Fitted Curve Equation: T = 0.10(X) + 13.43

R^2= 0.62

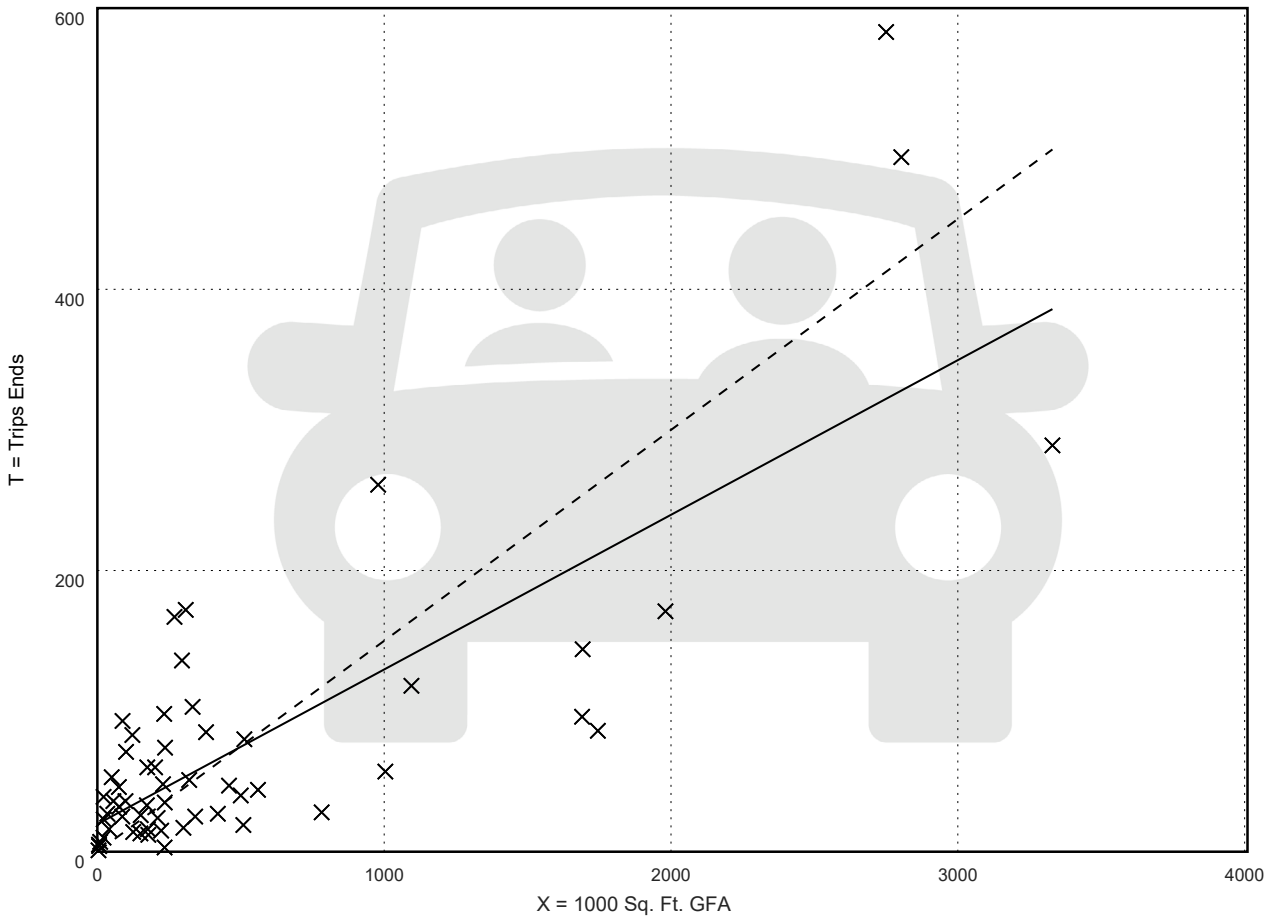
Warehouse
(150)

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:	58
Avg. 1000 Sq. Ft. GFA:	503
Directional Distribution:	28% entering, 72% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.15	0.01 - 1.80	0.15

Data Plot and Equation



Fitted Curve Equation: T = 0.11(X) + 19.62

R^2= 0.63

Level of Service Criteria

LEVEL OF SERVICE CRITERIA

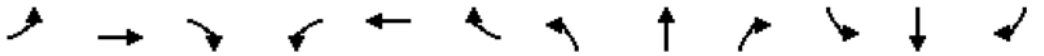
Signalized Intersections		
Level of Service	**Interpretation**	**Average Control Delay (seconds per vehicle)**
A	Favorable progression. Most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	Good progression, with more vehicles stopping than for Level of Service A.	>10 - 20
C	Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 - 35
D	The volume-to-capacity ratio is high and either progression is ineffective or the cycle length is too long. Many vehicles stop and individual cycle failures are noticeable.	>35 - 55
E	Progression is unfavorable. The volume-to-capacity ratio is high and the cycle length is long. Individual cycle failures are frequent.	>55 - 80
F	The volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80.0

Unsignalized Intersections	
Level of Service	Average Total Delay (SEC/VEH)
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

Source: *Highway Capacity Manual*, 6th Edition.

Capacity Analysis Summary Sheets

Existing Weekday Morning Peak Hour Conditions

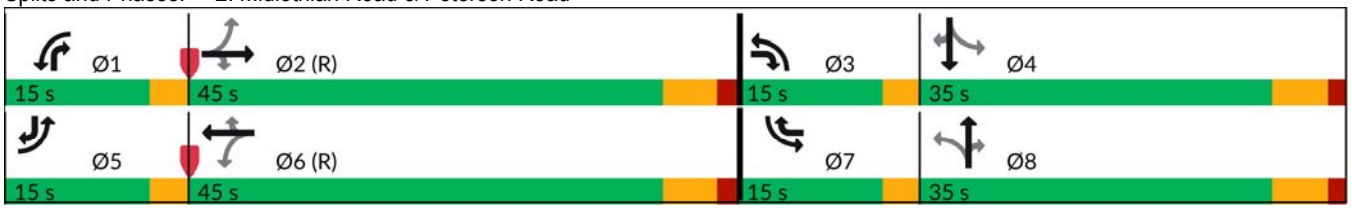


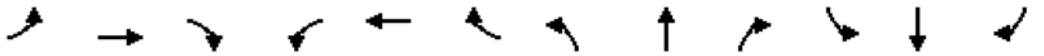
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	1150	359	117	323	4	119	179	211	6	115	42
Future Volume (vph)	118	1150	359	117	323	4	119	179	211	6	115	42
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	370		250	380		250	235		250	270		285
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	180			180			195			120		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3519	1568	1671	3333	1292	1597	1923	1524	1543	1887	1509
Flt Permitted	0.539			0.112			0.534			0.634		
Satd. Flow (perm)	994	3519	1568	197	3333	1292	898	1923	1524	1030	1887	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			395			60			232			60
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1348			1321			1268			556	
Travel Time (s)		20.4			20.0			19.2			8.4	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	8%	3%	8%	14%	25%	13%	4%	6%	17%	6%	7%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	1264	395	129	355	4	131	197	232	7	126	46
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	8.0	3.0	3.0	8.0	3.0
Minimum Split (s)	7.5	21.5	7.5	7.5	24.0	7.5	7.5	14.5	7.5	7.5	14.5	7.5
Total Split (s)	15.0	45.0	15.0	15.0	45.0	15.0	15.0	35.0	15.0	15.0	35.0	15.0
Total Split (%)	13.6%	40.9%	13.6%	13.6%	40.9%	13.6%	13.6%	31.8%	13.6%	13.6%	31.8%	13.6%
Yellow Time (s)	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0
All-Red Time (s)	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	3.0	3.0	6.0	3.0	3.0	6.0	3.0	3.0	6.0	3.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	68.4	56.7	73.7	70.6	57.8	69.7	31.5	24.7	40.5	23.5	14.5	29.2
Actuated g/C Ratio	0.62	0.52	0.67	0.64	0.53	0.63	0.29	0.22	0.37	0.21	0.13	0.27
v/c Ratio	0.19	0.70	0.33	0.50	0.20	0.00	0.40	0.46	0.33	0.03	0.51	0.10
Control Delay (s/veh)	8.6	24.4	1.8	15.7	15.4	0.0	33.1	40.7	4.2	26.0	50.8	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.6	24.4	1.8	15.7	15.4	0.0	33.1	40.7	4.2	26.0	50.8	5.0
LOS	A	C	A	B	B	A	C	D	A	C	D	A
Approach Delay (s/veh)		18.2			15.4			23.8			38.1	
Approach LOS		B			B			C			D	
Queue Length 50th (ft)	32	344	0	32	68	0	71	114	0	4	84	0
Queue Length 95th (ft)	63	513	39	69	111	0	115	193	47	14	139	19

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		1268			1241			1188			476	
Turn Bay Length (ft)	370		250	380		250	235		250	270		285
Base Capacity (vph)	723	1814	1191	296	1751	908	333	508	739	330	497	488
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.70	0.33	0.44	0.20	0.00	0.39	0.39	0.31	0.02	0.25	0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 15 (14%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay (s/veh): 20.0		Intersection LOS: B	
Intersection Capacity Utilization 63.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Midlothian Road & Peterson Road



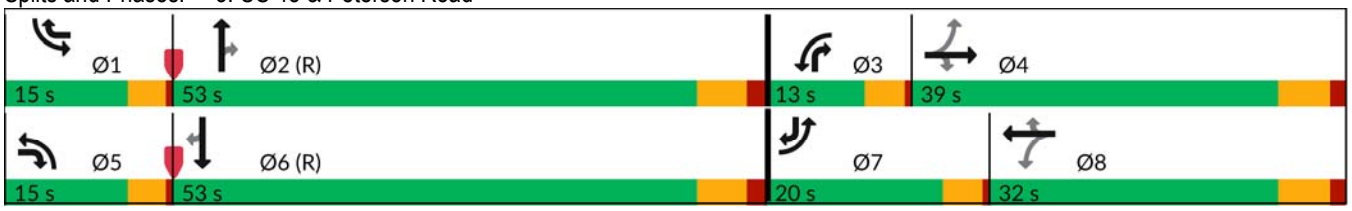


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	287	825	268	66	250	40	76	788	93	58	1289	230
Future Volume (vph)	287	825	268	66	250	40	76	788	93	58	1289	230
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	300		260	265		160	215		170	165		200
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	175			180			300			300		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor									0.99	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	3423	1568	1671	3276	1404	3213	3619	1442	3072	3689	1553
Flt Permitted	0.463			0.153			0.950			0.950		
Satd. Flow (perm)	807	3423	1568	269	3276	1404	3213	3619	1423	3062	3689	1553
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			100			101			216
Link Speed (mph)		45			50			45			45	
Link Distance (ft)		1504			1816			1173			2198	
Travel Time (s)		22.8			24.8			17.8			33.3	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	9%	11%	3%	8%	16%	15%	9%	5%	12%	14%	3%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	315	907	295	73	275	44	84	866	102	64	1416	253
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	7.0	21.0	7.0	7.0	21.0	7.0	7.0	21.0	7.0	7.0	21.0	7.0
Total Split (s)	20.0	39.0	15.0	13.0	32.0	15.0	15.0	53.0	13.0	15.0	53.0	20.0
Total Split (%)	16.7%	32.5%	12.5%	10.8%	26.7%	12.5%	12.5%	44.2%	10.8%	12.5%	44.2%	16.7%
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5	3.5
All-Red Time (s)	0.5	1.5	0.5	0.5	1.5	0.5	0.5	1.5	0.5	0.5	1.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	48.0	33.9	48.5	36.3	26.2	40.1	8.5	52.1	62.1	7.9	49.5	71.3
Actuated g/C Ratio	0.40	0.28	0.40	0.30	0.22	0.33	0.07	0.43	0.52	0.07	0.41	0.59
v/c Ratio	0.73	0.94	0.43	0.42	0.38	0.08	0.37	0.55	0.13	0.32	0.93	0.25
Control Delay (s/veh)	38.2	59.8	20.4	30.9	42.0	0.3	57.3	27.7	3.2	57.1	45.9	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.2	59.8	20.4	30.9	42.0	0.3	57.3	27.7	3.2	57.1	45.9	3.0
LOS	D	E	C	C	D	A	E	C	A	E	D	A
Approach Delay (s/veh)		47.6			35.2			27.7			40.1	
Approach LOS		D			D			C			D	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	178	364	116	35	96	0	32	265	0	24	542	11
Queue Length 95th (ft)	265	#500	189	67	138	0	58	341	27	47	#724	48
Internal Link Dist (ft)		1424			1736			1093			2118	
Turn Bay Length (ft)	300		260	265		160	215		170	165		200
Base Capacity (vph)	436	968	712	188	715	569	294	1569	797	281	1521	1012
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.94	0.41	0.39	0.38	0.08	0.29	0.55	0.13	0.23	0.93	0.25

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 70 (58%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay (s/veh): 39.3		Intersection LOS: D	
Intersection Capacity Utilization 75.6%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: US 45 & Peterson Road



Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1356	11	44	442	0	2	0	12	0	0	0
Future Vol, veh/h	0	1356	11	44	442	0	2	0	12	0	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	130	-	125	320	-	125	125	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	7	18	7	14	0	100	0	25	0	0	0
Mvmt Flow	0	1458	12	47	475	0	2	0	13	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	475	0	0	1470	0	0	1790	2028	729	1299	2040	238
Stage 1	-	-	-	-	-	-	1458	1458	-	570	570	-
Stage 2	-	-	-	-	-	-	332	570	-	729	1470	-
Critical Hdwy	4.1	-	-	4.24	-	-	9.5	6.5	7.4	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	8.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	8.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.27	-	-	4.5	4	3.55	3.5	4	3.3
Pot Cap-1 Maneuver	1097	-	-	431	-	-	18	58	318	121	57	770
Stage 1	-	-	-	-	-	-	56	196	-	479	509	-
Stage 2	-	-	-	-	-	-	446	509	-	385	193	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1097	-	-	431	-	-	16	52	318	103	51	770
Mov Cap-2 Maneuver	-	-	-	-	-	-	47	144	-	213	117	-
Stage 1	-	-	-	-	-	-	56	196	-	426	453	-
Stage 2	-	-	-	-	-	-	397	453	-	369	193	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	1.3	26.5	0
HCM LOS			D	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	47	318	1097	-	-	431	-	-	-	-
HCM Lane V/C Ratio	0.045	0.041	-	-	-	0.11	-	-	-	-
HCM Ctrl Dly (s/v)	84.6	16.8	0	-	-	14.4	-	-	0	0
HCM Lane LOS	F	C	A	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0.1	0	-	-	0.4	-	-	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1351	17	70	486	0	29
Future Vol, veh/h	1351	17	70	486	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	165	-	160	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	7	0	4	13	0	48
Mvmt Flow	1422	18	74	512	0	31

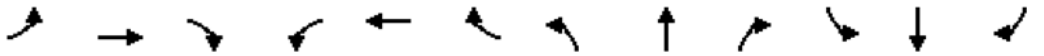
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1440	0	1834	720
Stage 1	-	-	-	-	1431	-
Stage 2	-	-	-	-	403	-
Critical Hdwy	-	-	4.18	-	6.8	7.86
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.24	-	3.5	3.78
Pot Cap-1 Maneuver	-	-	457	-	69	282
Stage 1	-	-	-	-	190	-
Stage 2	-	-	-	-	649	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	457	-	58	282
Mov Cap-2 Maneuver	-	-	-	-	148	-
Stage 1	-	-	-	-	190	-
Stage 2	-	-	-	-	545	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.81	19.32
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	282	-	-	457	-
HCM Lane V/C Ratio	-	0.108	-	-	0.161	-
HCM Ctrl Dly (s/v)	0	19.3	-	-	14.4	-
HCM Lane LOS	A	C	-	-	B	-
HCM 95th %tile Q(veh)	-	0.4	-	-	0.6	-

Capacity Analysis Summary Sheets

Existing Weekday Evening Peak Hour Conditions

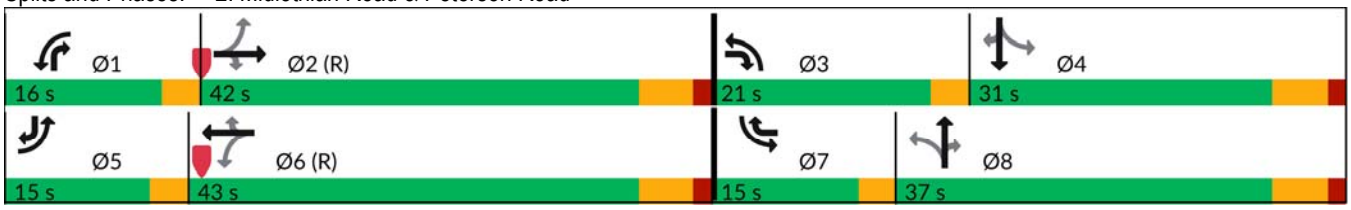


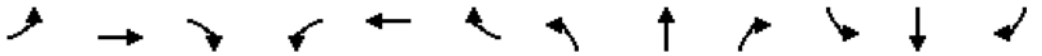
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	447	156	183	1044	10	406	238	158	6	163	108
Future Volume (vph)	47	447	156	183	1044	10	406	238	158	6	163	108
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	370		250	380		250	235		250	270		285
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	180			180			195			120		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98				1.00					0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3654	1599	1736	3619	1615	1703	1980	1553	1543	1961	1599
Flt Permitted	0.146			0.410			0.446			0.602		
Satd. Flow (perm)	272	3654	1563	749	3619	1615	799	1980	1553	978	1961	1577
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			161			89			168			89
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2697			1321			1268			556	
Travel Time (s)		40.9			20.0			19.2			8.4	
Confl. Peds. (#/hr)							2					2
Confl. Bikes (#/hr)			3									
Peak Hour Factor	0.97	0.97	0.97	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	4%	1%	4%	5%	0%	6%	1%	4%	17%	2%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	461	161	195	1111	11	432	253	168	6	173	115
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	8.0	3.0	3.0	8.0	3.0
Minimum Split (s)	7.5	21.5	7.5	7.5	21.5	7.5	7.5	14.5	7.5	7.5	14.5	7.5
Total Split (s)	15.0	42.0	21.0	16.0	43.0	15.0	21.0	37.0	16.0	15.0	31.0	15.0
Total Split (%)	13.6%	38.2%	19.1%	14.5%	39.1%	13.6%	19.1%	33.6%	14.5%	13.6%	28.2%	13.6%
Yellow Time (s)	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0
All-Red Time (s)	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	3.0	3.0	6.0	3.0	3.0	6.0	3.0	3.0	6.0	3.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	55.4	45.6	66.6	63.1	50.4	62.2	40.8	34.1	51.7	25.6	16.8	26.6
Actuated g/C Ratio	0.50	0.41	0.61	0.57	0.46	0.57	0.37	0.31	0.47	0.23	0.15	0.24
v/c Ratio	0.21	0.30	0.16	0.37	0.67	0.01	0.97	0.41	0.21	0.02	0.58	0.26
Control Delay (s/veh)	14.1	23.7	2.2	14.1	26.8	0.0	67.9	32.7	3.0	21.0	50.6	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.1	23.7	2.2	14.1	26.8	0.0	67.9	32.7	3.0	21.0	50.6	10.4
LOS	B	C	A	B	C	A	E	C	A	C	D	B
Approach Delay (s/veh)		17.8			24.7			44.7			34.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		B			C			D			C	
Queue Length 50th (ft)	14	112	0	62	314	0	254	133	0	3	115	14
Queue Length 95th (ft)	35	177	30	112	438	0	#428	218	33	11	176	53
Internal Link Dist (ft)		2617			1241			1188			476	
Turn Bay Length (ft)	370		250	380		250	235		250	270		285
Base Capacity (vph)	312	1513	1015	552	1657	1037	444	613	844	344	445	521
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.30	0.16	0.35	0.67	0.01	0.97	0.41	0.20	0.02	0.39	0.22

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 18 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay (s/veh): 29.5		Intersection LOS: C	
Intersection Capacity Utilization 78.1%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: Midlothian Road & Peterson Road



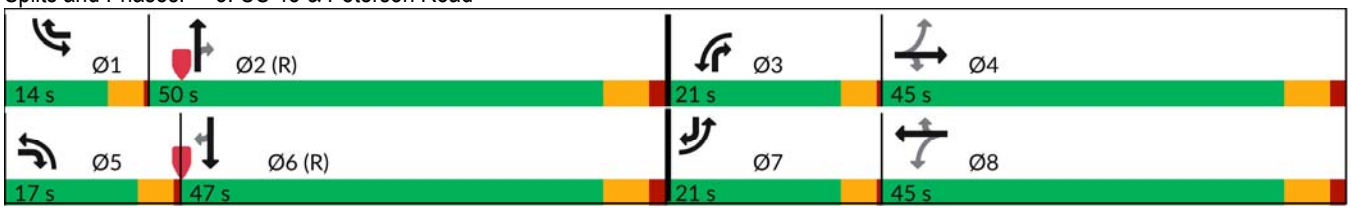


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	253	402	66	123	780	81	197	1212	73	89	889	270
Future Volume (vph)	253	402	66	123	780	81	197	1212	73	89	889	270
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	300		260	265		160	215		170	165		200
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	175			180			300			300		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3800	1538	1719	3585	1583	3335	3762	1599	3242	3725	1509
Flt Permitted	0.142			0.513			0.950			0.950		
Satd. Flow (perm)	262	3800	1538	928	3585	1583	3335	3762	1599	3242	3725	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			67			59			59			59
Link Speed (mph)		45			50			45			45	
Link Distance (ft)		1504			1816			1173			2198	
Travel Time (s)		22.8			24.8			17.8			33.3	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	3%	0%	5%	5%	6%	2%	5%	1%	1%	8%	2%	7%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	256	406	67	124	788	82	199	1224	74	90	898	273
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	7.0	21.0	7.0	7.0	21.0	7.0	7.0	21.0	7.0	7.0	21.0	7.0
Total Split (s)	21.0	45.0	17.0	21.0	45.0	14.0	17.0	50.0	21.0	14.0	47.0	21.0
Total Split (%)	16.2%	34.6%	13.1%	16.2%	34.6%	10.8%	13.1%	38.5%	16.2%	10.8%	36.2%	16.2%
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5	3.5
All-Red Time (s)	0.5	1.5	0.5	0.5	1.5	0.5	0.5	1.5	0.5	0.5	1.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	60.8	44.2	62.2	51.3	38.4	53.1	12.0	46.2	63.1	8.7	42.9	65.6
Actuated g/C Ratio	0.47	0.34	0.48	0.39	0.30	0.41	0.09	0.36	0.49	0.07	0.33	0.50
v/c Ratio	0.82	0.31	0.09	0.29	0.74	0.12	0.65	0.92	0.09	0.41	0.73	0.35
Control Delay (s/veh)	46.3	32.7	4.6	21.7	46.3	8.9	67.1	51.9	6.3	63.8	43.1	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.3	32.7	4.6	21.7	46.3	8.9	67.1	51.9	6.3	63.8	43.1	16.6
LOS	D	C	A	C	D	A	E	D	A	E	D	B
Approach Delay (s/veh)		34.9			40.2			51.7			38.9	
Approach LOS		C			D			D			D	
Queue Length 50th (ft)	129	131	0	58	313	11	84	523	7	38	358	106
Queue Length 95th (ft)	#268	182	26	96	388	43	125	#679	32	66	438	171

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		1424			1736			1093			2118	
Turn Bay Length (ft)	300		260	265		160	215		170	165		200
Base Capacity (vph)	317	1292	782	513	1075	696	333	1337	878	249	1230	794
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.31	0.09	0.24	0.73	0.12	0.60	0.92	0.08	0.36	0.73	0.34

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 127 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay (s/veh): 42.8		Intersection LOS: D	
Intersection Capacity Utilization 86.3%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: US 45 & Peterson Road



Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	602	9	18	1228	0	9	0	42	0	0	0
Future Vol, veh/h	0	602	9	18	1228	0	9	0	42	0	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	130	-	125	320	-	125	125	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	4	11	28	5	0	11	0	10	0	0	0
Mvmt Flow	0	627	9	19	1279	0	9	0	44	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1279	0	0	636	0	0	1304	1944	314	1630	1953	640
Stage 1	-	-	-	-	-	-	627	627	-	1317	1317	-
Stage 2	-	-	-	-	-	-	677	1317	-	314	636	-
Critical Hdwy	4.1	-	-	4.66	-	-	7.72	6.5	7.1	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.72	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.72	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.48	-	-	3.61	4	3.4	3.5	4	3.3
Pot Cap-1 Maneuver	549	-	-	787	-	-	109	66	659	69	65	423
Stage 1	-	-	-	-	-	-	417	479	-	169	229	-
Stage 2	-	-	-	-	-	-	388	229	-	677	475	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	549	-	-	787	-	-	106	64	659	63	63	423
Mov Cap-2 Maneuver	-	-	-	-	-	-	230	164	-	136	162	-
Stage 1	-	-	-	-	-	-	417	479	-	165	224	-
Stage 2	-	-	-	-	-	-	379	224	-	632	475	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	0.14	12.7	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	230	659	549	-	-	787	-	-	-	-
HCM Lane V/C Ratio	0.041	0.066	-	-	-	0.024	-	-	-	-
HCM Ctrl Dly (s/v)	21.3	10.8	0	-	-	9.7	-	-	0	0
HCM Lane LOS	C	B	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	0.2	0	-	-	0.1	-	-	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	643	1	14	1233	13	78
Future Vol, veh/h	643	1	14	1233	13	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	165	-	160	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	0	29	6	0	5
Mvmt Flow	699	1	15	1340	14	85

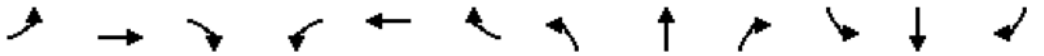
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	700	0	1400	350
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	701	-
Critical Hdwy	-	-	4.68	-	6.8	7
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.49	-	3.5	3.35
Pot Cap-1 Maneuver	-	-	734	-	134	638
Stage 1	-	-	-	-	459	-
Stage 2	-	-	-	-	459	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	734	-	131	638
Mov Cap-2 Maneuver	-	-	-	-	267	-
Stage 1	-	-	-	-	459	-
Stage 2	-	-	-	-	449	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.11	12.61
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	267	638	-	-	734	-
HCM Lane V/C Ratio	0.053	0.133	-	-	0.021	-
HCM Ctrl Dly (s/v)	19.2	11.5	-	-	10	-
HCM Lane LOS	C	B	-	-	B	-
HCM 95th %tile Q(veh)	0.2	0.5	-	-	0.1	-

Capacity Analysis Summary Sheets

No Build Weekday Morning Peak Hour Conditions

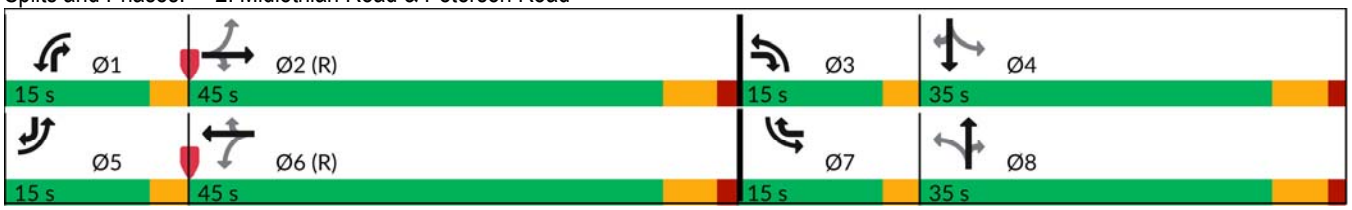


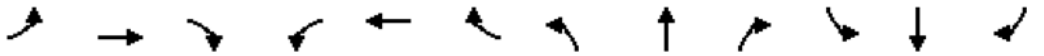
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	1306	381	124	417	4	126	190	224	6	122	45
Future Volume (vph)	125	1306	381	124	417	4	126	190	224	6	122	45
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	370		250	380		250	235		250	270		285
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	180			180			195			120		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3519	1568	1671	3333	1292	1597	1923	1524	1543	1887	1509
Flt Permitted	0.477			0.072			0.519			0.627		
Satd. Flow (perm)	880	3519	1568	127	3333	1292	873	1923	1524	1018	1887	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			415			60			246			60
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1348			1321			1268			556	
Travel Time (s)		20.4			20.0			19.2			8.4	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	8%	3%	8%	14%	25%	13%	4%	6%	17%	6%	7%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	137	1435	419	136	458	4	138	209	246	7	134	49
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	8.0	3.0	3.0	8.0	3.0
Minimum Split (s)	7.5	21.5	7.5	7.5	24.0	7.5	7.5	14.5	7.5	7.5	14.5	7.5
Total Split (s)	15.0	45.0	15.0	15.0	45.0	15.0	15.0	35.0	15.0	15.0	35.0	15.0
Total Split (%)	13.6%	40.9%	13.6%	13.6%	40.9%	13.6%	13.6%	31.8%	13.6%	13.6%	31.8%	13.6%
Yellow Time (s)	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0
All-Red Time (s)	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	3.0	3.0	6.0	3.0	3.0	6.0	3.0	3.0	6.0	3.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	67.7	55.8	72.9	70.1	57.0	68.9	32.1	25.3	41.5	23.9	15.0	29.9
Actuated g/C Ratio	0.62	0.51	0.66	0.64	0.52	0.63	0.29	0.23	0.38	0.22	0.14	0.27
v/c Ratio	0.22	0.80	0.36	0.61	0.27	0.00	0.42	0.47	0.34	0.03	0.52	0.11
Control Delay (s/veh)	9.1	28.7	1.9	28.8	16.5	0.0	33.2	40.6	4.0	25.7	50.8	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.1	28.7	1.9	28.8	16.5	0.0	33.2	40.6	4.0	25.7	50.8	5.6
LOS	A	C	A	C	B	A	C	D	A	C	D	A
Approach Delay (s/veh)		21.8			19.2			23.7			38.2	
Approach LOS		C			B			C			D	
Queue Length 50th (ft)	34	430	1	40	92	0	74	121	0	3	89	0
Queue Length 95th (ft)	67	#688	42	105	146	0	120	203	47	14	145	21

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		1268			1241			1188			476	
Turn Bay Length (ft)	370		250	380		250	235		250	270		285
Base Capacity (vph)	655	1783	1188	259	1726	899	333	510	756	333	497	494
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.80	0.35	0.53	0.27	0.00	0.41	0.41	0.33	0.02	0.27	0.10

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay (s/veh): 22.6		Intersection LOS: C	
Intersection Capacity Utilization 71.5%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: Midlothian Road & Peterson Road



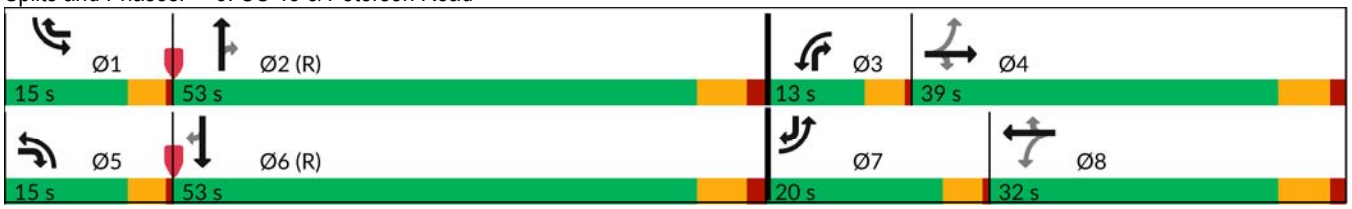


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	313	936	301	70	318	42	96	835	99	61	1366	251
Future Volume (vph)	313	936	301	70	318	42	96	835	99	61	1366	251
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	300		260	265		160	215		170	165		200
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	175			180			300			300		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor									0.99	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1656	3423	1568	1671	3276	1404	3213	3619	1442	3072	3689	1553
Flt Permitted	0.385			0.154			0.950			0.950		
Satd. Flow (perm)	671	3423	1568	271	3276	1404	3213	3619	1423	3062	3689	1553
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			77			100			102			164
Link Speed (mph)		45			50			45			45	
Link Distance (ft)		1504			1816			1173			2198	
Travel Time (s)		22.8			24.8			17.8			33.3	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	9%	11%	3%	8%	16%	15%	9%	5%	12%	14%	3%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	344	1029	331	77	349	46	105	918	109	67	1501	276
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	7.0	21.0	7.0	7.0	21.0	7.0	7.0	21.0	7.0	7.0	21.0	7.0
Total Split (s)	20.0	39.0	15.0	13.0	32.0	15.0	15.0	53.0	13.0	15.0	53.0	20.0
Total Split (%)	16.7%	32.5%	12.5%	10.8%	26.7%	12.5%	12.5%	44.2%	10.8%	12.5%	44.2%	16.7%
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5	3.5
All-Red Time (s)	0.5	1.5	0.5	0.5	1.5	0.5	0.5	1.5	0.5	0.5	1.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	48.0	33.8	48.9	36.2	26.0	40.0	9.1	52.0	62.1	8.0	48.9	70.9
Actuated g/C Ratio	0.40	0.28	0.41	0.30	0.22	0.33	0.08	0.43	0.52	0.07	0.41	0.59
v/c Ratio	0.86	1.07	0.48	0.44	0.49	0.09	0.43	0.59	0.14	0.33	1.00	0.28
Control Delay (s/veh)	50.9	89.9	22.3	31.5	44.0	0.3	58.2	28.6	3.6	57.2	58.9	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.9	89.9	22.3	31.5	44.0	0.3	58.2	28.6	3.6	57.2	58.9	5.6
LOS	D	F	C	C	D	A	E	C	A	E	E	A
Approach Delay (s/veh)		68.9			37.7			28.9			50.8	
Approach LOS		E			D			C			D	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	199	~472	143	37	125	0	40	287	2	25	~606	36
Queue Length 95th (ft)	#356	#606	225	70	174	0	69	368	31	48	#799	82
Internal Link Dist (ft)		1424			1736			1093			2118	
Turn Bay Length (ft)	300		260	265		160	215		170	165		200
Base Capacity (vph)	399	965	708	188	709	567	294	1566	796	281	1503	984
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	1.07	0.47	0.41	0.49	0.08	0.36	0.59	0.14	0.24	1.00	0.28

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 70 (58%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay (s/veh): 50.8		Intersection LOS: D	
Intersection Capacity Utilization 84.3%		ICU Level of Service E	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: US 45 & Peterson Road



Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	1524	12	47	544	0	2	0	13	0	0	0
Future Vol, veh/h	0	1524	12	47	544	0	2	0	13	0	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	130	-	125	320	-	125	125	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	7	18	7	14	0	100	0	25	0	0	0
Mvmt Flow	0	1639	13	51	585	0	2	0	14	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	585	0	0	1652	0	0	2032	2325	819	1505	2338	292
Stage 1	-	-	-	-	-	-	1639	1639	-	686	686	-
Stage 2	-	-	-	-	-	-	394	686	-	819	1652	-
Critical Hdwy	4.1	-	-	4.24	-	-	9.5	6.5	7.4	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	8.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	8.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.27	-	-	4.5	4	3.55	3.5	4	3.3
Pot Cap-1 Maneuver	1000	-	-	365	-	-	10	38	274	85	37	710
Stage 1	-	-	-	-	-	-	39	160	-	408	451	-
Stage 2	-	-	-	-	-	-	400	451	-	340	158	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1000	-	-	365	-	-	9	33	274	70	32	710
Mov Cap-2 Maneuver	-	-	-	-	-	-	34	115	-	171	86	-
Stage 1	-	-	-	-	-	-	39	160	-	352	388	-
Stage 2	-	-	-	-	-	-	345	388	-	323	158	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	1.31	32.25	0
HCM LOS			D	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	34	274	1000	-	-	365	-	-	-	-
HCM Lane V/C Ratio	0.064	0.051	-	-	-	0.138	-	-	-	-
HCM Ctrl Dly (s/v)	119.5	18.8	0	-	-	16.4	-	-	0	0
HCM Lane LOS	F	C	A	-	-	C	-	-	A	A
HCM 95th %tile Q(veh)	0.2	0.2	0	-	-	0.5	-	-	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1519	18	74	590	0	31
Future Vol, veh/h	1519	18	74	590	0	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	165	-	160	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	7	0	4	13	0	48
Mvmt Flow	1599	19	78	621	0	33

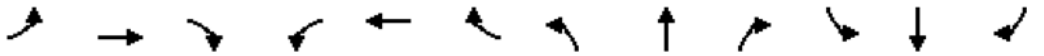
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1618	0	2075	809
Stage 1	-	-	-	-	1608	-
Stage 2	-	-	-	-	466	-
Critical Hdwy	-	-	4.18	-	6.8	7.86
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.24	-	3.5	3.78
Pot Cap-1 Maneuver	-	-	390	-	48	242
Stage 1	-	-	-	-	152	-
Stage 2	-	-	-	-	604	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	390	-	38	242
Mov Cap-2 Maneuver	-	-	-	-	118	-
Stage 1	-	-	-	-	152	-
Stage 2	-	-	-	-	483	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	1.84	22.21
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	242	-	-	390	-
HCM Lane V/C Ratio	-	0.135	-	-	0.2	-
HCM Ctrl Dly (s/v)	0	22.2	-	-	16.5	-
HCM Lane LOS	A	C	-	-	C	-
HCM 95th %tile Q(veh)	-	0.5	-	-	0.7	-

Capacity Analysis Summary Sheets

No Build Weekday Evening Peak Hour Conditions



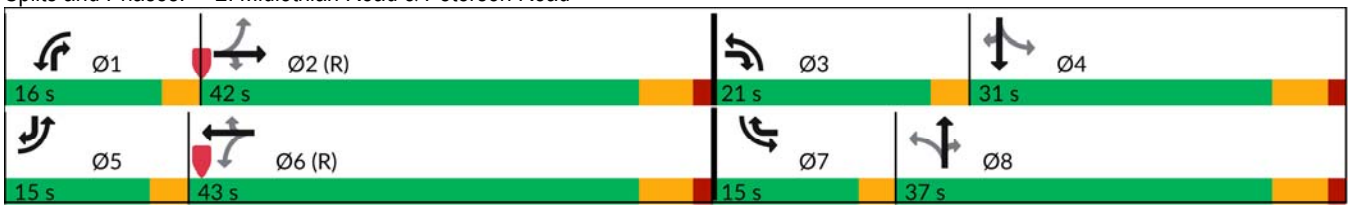
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	560	165	194	1209	11	430	252	167	6	173	114
Future Volume (vph)	50	560	165	194	1209	11	430	252	167	6	173	114
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	370		250	380		250	235		250	270		285
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	180			180			195			120		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98				1.00					0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3654	1599	1736	3619	1615	1703	1980	1553	1543	1961	1599
Flt Permitted	0.093			0.335			0.429			0.594		
Satd. Flow (perm)	173	3654	1563	612	3619	1615	768	1980	1553	965	1961	1577
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			170			89			178			89
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2697			1321			1268			556	
Travel Time (s)		40.9			20.0			19.2			8.4	
Confl. Peds. (#/hr)							2					2
Confl. Bikes (#/hr)			3									
Peak Hour Factor	0.97	0.97	0.97	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	4%	1%	4%	5%	0%	6%	1%	4%	17%	2%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	577	170	206	1286	12	457	268	178	6	184	121
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	8.0	3.0	3.0	8.0	3.0
Minimum Split (s)	7.5	21.5	7.5	7.5	21.5	7.5	7.5	14.5	7.5	7.5	14.5	7.5
Total Split (s)	15.0	42.0	21.0	16.0	43.0	15.0	21.0	37.0	16.0	15.0	31.0	15.0
Total Split (%)	13.6%	38.2%	19.1%	14.5%	39.1%	13.6%	19.1%	33.6%	14.5%	13.6%	28.2%	13.6%
Yellow Time (s)	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0
All-Red Time (s)	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	3.0	3.0	6.0	3.0	3.0	6.0	3.0	3.0	6.0	3.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	54.8	44.8	65.8	62.5	49.6	61.5	41.4	34.7	52.5	26.2	17.4	27.4
Actuated g/C Ratio	0.50	0.41	0.60	0.57	0.45	0.56	0.38	0.32	0.48	0.24	0.16	0.25
v/c Ratio	0.28	0.39	0.17	0.44	0.79	0.01	1.03	0.43	0.21	0.02	0.60	0.26
Control Delay (s/veh)	16.2	25.2	2.2	15.6	31.1	0.0	83.1	32.6	2.9	20.5	50.6	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.2	25.2	2.2	15.6	31.1	0.0	83.1	32.6	2.9	20.5	50.6	10.8
LOS	B	C	A	B	C	A	F	C	A	C	D	B
Approach Delay (s/veh)		19.7			28.8			52.3			34.5	

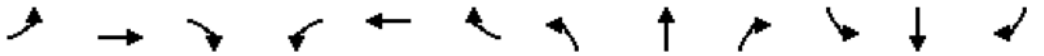
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		B			C			D			C	
Queue Length 50th (ft)	15	148	0	67	395	0	~286	141	0	3	122	17
Queue Length 95th (ft)	37	224	31	121	#590	0	#481	228	34	11	185	57
Internal Link Dist (ft)		2617			1241			1188			476	
Turn Bay Length (ft)	370		250	380		250	235		250	270		285
Base Capacity (vph)	268	1488	1009	487	1632	1027	442	624	856	346	445	529
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.39	0.17	0.42	0.79	0.01	1.03	0.43	0.21	0.02	0.41	0.23

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 18 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay (s/veh): 33.3		Intersection LOS: C	
Intersection Capacity Utilization 84.2%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Midlothian Road & Peterson Road



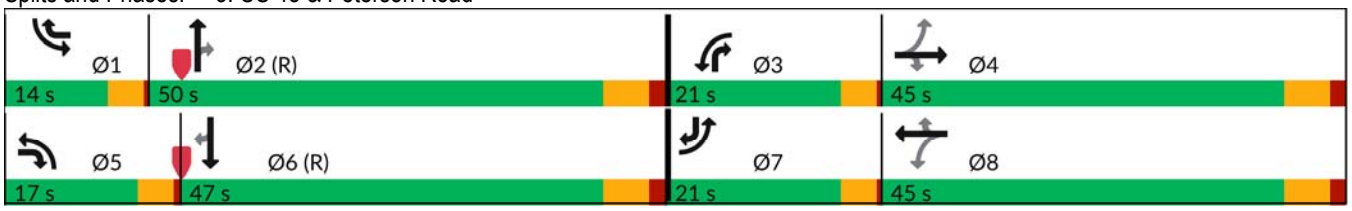


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	277	487	86	130	898	86	219	1285	77	94	942	307
Future Volume (vph)	277	487	86	130	898	86	219	1285	77	94	942	307
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	300		260	265		160	215		170	165		200
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	175			180			300			300		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3800	1538	1719	3585	1583	3335	3762	1599	3242	3725	1509
Flt Permitted	0.093			0.442			0.950			0.950		
Satd. Flow (perm)	172	3800	1538	800	3585	1583	3335	3762	1599	3242	3725	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			87			59			59			59
Link Speed (mph)		45			50			45			45	
Link Distance (ft)		1504			1816			1173			2198	
Travel Time (s)		22.8			24.8			17.8			33.3	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	3%	0%	5%	5%	6%	2%	5%	1%	1%	8%	2%	7%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	280	492	87	131	907	87	221	1298	78	95	952	310
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	7.0	21.0	7.0	7.0	21.0	7.0	7.0	21.0	7.0	7.0	21.0	7.0
Total Split (s)	21.0	45.0	17.0	21.0	45.0	14.0	17.0	50.0	21.0	14.0	47.0	21.0
Total Split (%)	16.2%	34.6%	13.1%	16.2%	34.6%	10.8%	13.1%	38.5%	16.2%	10.8%	36.2%	16.2%
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5	3.5
All-Red Time (s)	0.5	1.5	0.5	0.5	1.5	0.5	0.5	1.5	0.5	0.5	1.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	61.6	44.8	63.1	52.2	39.0	53.8	12.3	45.2	62.4	8.8	41.7	64.7
Actuated g/C Ratio	0.47	0.34	0.49	0.40	0.30	0.41	0.09	0.35	0.48	0.07	0.32	0.50
v/c Ratio	0.97	0.38	0.11	0.33	0.84	0.13	0.70	0.99	0.10	0.43	0.80	0.40
Control Delay (s/veh)	82.3	33.6	4.2	22.1	51.1	9.5	69.6	65.4	6.6	64.2	46.4	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	82.3	33.6	4.2	22.1	51.1	9.5	69.6	65.4	6.6	64.2	46.4	18.2
LOS	F	C	A	C	D	A	E	E	A	E	D	B
Approach Delay (s/veh)		46.5			44.5			63.1			41.2	
Approach LOS		D			D			E			D	
Queue Length 50th (ft)	184	163	0	61	377	14	94	~574	8	40	388	129
Queue Length 95th (ft)	#371	222	30	101	462	47	138	#748	35	69	471	202

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		1424			1736			1093			2118	
Turn Bay Length (ft)	300		260	265		160	215		170	165		200
Base Capacity (vph)	288	1310	799	477	1075	703	333	1308	867	249	1195	780
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.38	0.11	0.27	0.84	0.12	0.66	0.99	0.09	0.38	0.80	0.40

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 127 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay (s/veh): 50.0		Intersection LOS: D	
Intersection Capacity Utilization 92.7%		ICU Level of Service F	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: US 45 & Peterson Road



Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	724	10	19	1404	0	10	0	45	0	0	0
Future Vol, veh/h	0	724	10	19	1404	0	10	0	45	0	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	130	-	125	320	-	125	125	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	4	11	28	5	0	11	0	10	0	0	0
Mvmt Flow	0	754	10	20	1463	0	10	0	47	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1463	0	0	765	0	0	1525	2256	377	1879	2267	731
Stage 1	-	-	-	-	-	-	754	754	-	1502	1502	-
Stage 2	-	-	-	-	-	-	771	1502	-	377	765	-
Critical Hdwy	4.1	-	-	4.66	-	-	7.72	6.5	7.1	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.72	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.72	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.48	-	-	3.61	4	3.4	3.5	4	3.3
Pot Cap-1 Maneuver	468	-	-	694	-	-	74	42	598	45	41	369
Stage 1	-	-	-	-	-	-	348	420	-	130	187	-
Stage 2	-	-	-	-	-	-	340	187	-	622	415	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	468	-	-	694	-	-	72	41	598	40	40	369
Mov Cap-2 Maneuver	-	-	-	-	-	-	187	131	-	104	129	-
Stage 1	-	-	-	-	-	-	348	420	-	126	181	-
Stage 2	-	-	-	-	-	-	330	181	-	573	415	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	0.14	14.04	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	187	598	468	-	-	694	-	-	-	-
HCM Lane V/C Ratio	0.056	0.078	-	-	-	0.029	-	-	-	-
HCM Ctrl Dly (s/v)	25.3	11.5	0	-	-	10.3	-	-	0	0
HCM Lane LOS	D	B	A	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	0.3	0	-	-	0.1	-	-	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	768	1	15	1409	14	83
Future Vol, veh/h	768	1	15	1409	14	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	165	-	160	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	0	29	6	0	5
Mvmt Flow	835	1	16	1532	15	90

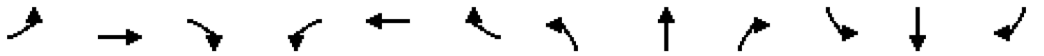
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	836	0	1634	418
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	798	-
Critical Hdwy	-	-	4.68	-	6.8	7
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.49	-	3.5	3.35
Pot Cap-1 Maneuver	-	-	642	-	94	576
Stage 1	-	-	-	-	391	-
Stage 2	-	-	-	-	409	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	642	-	91	576
Mov Cap-2 Maneuver	-	-	-	-	222	-
Stage 1	-	-	-	-	391	-
Stage 2	-	-	-	-	398	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.11	13.86
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	222	576	-	-	642	-
HCM Lane V/C Ratio	0.069	0.157	-	-	0.025	-
HCM Ctrl Dly (s/v)	22.4	12.4	-	-	10.8	-
HCM Lane LOS	C	B	-	-	B	-
HCM 95th %tile Q(veh)	0.2	0.6	-	-	0.1	-

Capacity Analysis Summary Sheets

Projected Weekday Morning Peak Hour Conditions

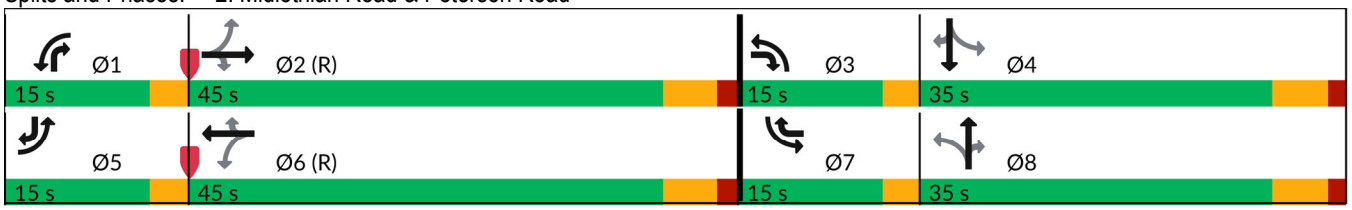


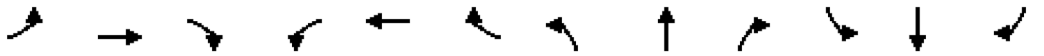
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	1323	381	125	422	8	126	190	229	22	122	45
Future Volume (vph)	125	1323	381	125	422	8	126	190	229	22	122	45
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	370		250	380		250	235		250	270		285
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	180			180			195			120		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3519	1495	1671	3304	1292	1597	1923	1524	1656	1887	1509
Flt Permitted	0.473			0.072			0.515			0.627		
Satd. Flow (perm)	873	3519	1495	127	3304	1292	866	1923	1524	1093	1887	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			409			60			235			60
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1348			1321			1268			556	
Travel Time (s)		20.4			20.0			19.2			8.4	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	8%	8%	8%	15%	25%	13%	4%	6%	9%	6%	7%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	137	1454	419	137	464	9	138	209	252	24	134	49
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	8.0	3.0	3.0	8.0	3.0
Minimum Split (s)	7.5	21.5	7.5	7.5	24.0	7.5	7.5	14.5	7.5	7.5	14.5	7.5
Total Split (s)	15.0	45.0	15.0	15.0	45.0	15.0	15.0	35.0	15.0	15.0	35.0	15.0
Total Split (%)	13.6%	40.9%	13.6%	13.6%	40.9%	13.6%	13.6%	31.8%	13.6%	13.6%	31.8%	13.6%
Yellow Time (s)	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0
All-Red Time (s)	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	3.0	3.0	6.0	3.0	3.0	6.0	3.0	3.0	6.0	3.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	67.4	55.5	72.6	69.9	56.7	69.4	32.3	23.1	39.3	24.9	15.2	30.2
Actuated g/C Ratio	0.61	0.50	0.66	0.64	0.52	0.63	0.29	0.21	0.36	0.23	0.14	0.27
v/c Ratio	0.23	0.82	0.37	0.61	0.27	0.01	0.42	0.52	0.36	0.09	0.51	0.11
Control Delay (s/veh)	9.3	29.6	2.2	29.1	16.8	0.0	32.9	43.7	5.2	26.4	50.1	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.3	29.6	2.2	29.1	16.8	0.0	32.9	43.7	5.2	26.4	50.1	5.4
LOS	A	C	A	C	B	A	C	D	A	C	D	A
Approach Delay (s/veh)		22.5			19.3			25.0			36.8	
Approach LOS		C			B			C			D	
Queue Length 50th (ft)	35	469	2	44	105	0	82	141	9	13	93	0
Queue Length 95th (ft)	70	#766	49	114	171	0	130	211	58	32	150	22

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		1268			1241			1188			476	
Turn Bay Length (ft)	370		250	380		250	235		250	270		285
Base Capacity (vph)	649	1774	1134	259	1703	896	334	506	724	360	497	497
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.82	0.37	0.53	0.27	0.01	0.41	0.41	0.35	0.07	0.27	0.10

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay (s/veh): 23.3		Intersection LOS: C	
Intersection Capacity Utilization 72.0%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: Midlothian Road & Peterson Road



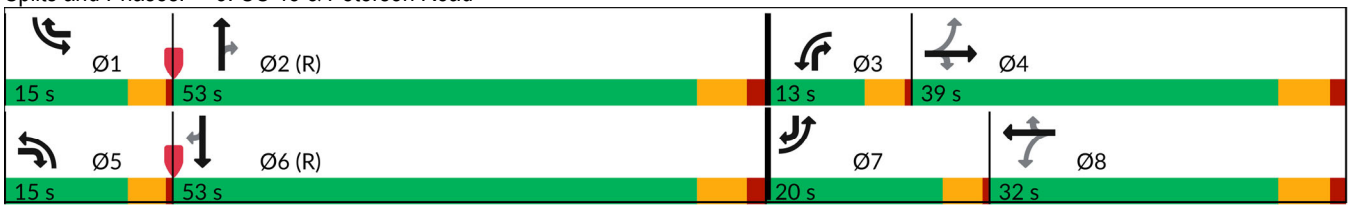


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	315	938	303	70	324	42	102	835	99	61	1366	257
Future Volume (vph)	315	938	303	70	324	42	102	835	99	61	1366	257
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	300		260	265		160	215		170	165		200
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	175			180			300			300		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor									0.99	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1641	3423	1553	1671	3248	1404	3155	3619	1442	3072	3689	1538
Flt Permitted	0.379			0.154			0.950			0.950		
Satd. Flow (perm)	655	3423	1553	271	3248	1404	3155	3619	1423	3062	3689	1538
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			77			100			102			153
Link Speed (mph)		45			50			45			45	
Link Distance (ft)		1504			1816			1173			2198	
Travel Time (s)		22.8			24.8			17.8			33.3	
Confl. Peds. (#/hr)									2	2		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	10%	11%	4%	8%	17%	15%	11%	5%	12%	14%	3%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	346	1031	333	77	356	46	112	918	109	67	1501	282
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	7.0	21.0	7.0	7.0	21.0	7.0	7.0	21.0	7.0	7.0	21.0	7.0
Total Split (s)	20.0	39.0	15.0	13.0	32.0	15.0	15.0	53.0	13.0	15.0	53.0	20.0
Total Split (%)	16.7%	32.5%	12.5%	10.8%	26.7%	12.5%	12.5%	44.2%	10.8%	12.5%	44.2%	16.7%
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5	3.5
All-Red Time (s)	0.5	1.5	0.5	0.5	1.5	0.5	0.5	1.5	0.5	0.5	1.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	48.0	33.8	49.2	36.2	26.0	40.0	9.3	52.0	62.1	8.0	48.7	70.7
Actuated g/C Ratio	0.40	0.28	0.41	0.30	0.22	0.33	0.08	0.43	0.52	0.07	0.41	0.59
v/c Ratio	0.88	1.07	0.49	0.44	0.51	0.09	0.46	0.59	0.14	0.33	1.00	0.29
Control Delay (s/veh)	53.6	90.6	22.4	31.5	44.3	0.3	58.7	28.6	3.6	57.2	60.2	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	53.6	90.6	22.4	31.5	44.3	0.3	58.7	28.6	3.6	57.2	60.2	6.3
LOS	D	F	C	C	D	A	E	C	A	E	E	A
Approach Delay (s/veh)		69.8			38.0			29.1			51.9	
Approach LOS		E			D			C			D	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	217	~515	148	39	146	0	47	299	3	28	~631	44
Queue Length 95th (ft)	#399	#662	234	75	202	0	79	383	33	54	#818	94
Internal Link Dist (ft)		1424			1736			1093			2118	
Turn Bay Length (ft)	300		260	265		160	215		170	165		200
Base Capacity (vph)	393	965	702	188	703	567	289	1566	796	281	1495	968
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	1.07	0.47	0.41	0.51	0.08	0.39	0.59	0.14	0.24	1.00	0.29

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 70 (58%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay (s/veh): 51.5		Intersection LOS: D	
Intersection Capacity Utilization 85.8%		ICU Level of Service E	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: US 45 & Peterson Road



Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	1537	12	47	549	6	2	0	13	2	0	5
Future Vol, veh/h	25	1537	12	47	549	6	2	0	13	2	0	5
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	130	-	125	320	-	125	125	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	8	8	18	7	14	20	100	0	25	50	0	20
Mvmt Flow	27	1653	13	51	590	6	2	0	14	2	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	597	0	0	1666	0	0	2103	2404	826	1572	2411	295
Stage 1	-	-	-	-	-	-	1706	1706	-	691	691	-
Stage 2	-	-	-	-	-	-	396	698	-	880	1719	-
Critical Hdwy	4.26	-	-	4.24	-	-	9.5	6.5	7.4	8.5	6.5	7.3
Critical Hdwy Stg 1	-	-	-	-	-	-	8.5	5.5	-	7.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	8.5	5.5	-	7.5	5.5	-
Follow-up Hdwy	2.28	-	-	2.27	-	-	4.5	4	3.55	4	4	3.5
Pot Cap-1 Maneuver	936	-	-	360	-	-	9	34	271	47	33	650
Stage 1	-	-	-	-	-	-	34	148	-	305	448	-
Stage 2	-	-	-	-	-	-	398	445	-	225	146	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	936	-	-	360	-	-	7	28	271	37	28	650
Mov Cap-2 Maneuver	-	-	-	-	-	-	29	104	-	105	75	-
Stage 1	-	-	-	-	-	-	33	144	-	263	386	-
Stage 2	-	-	-	-	-	-	339	383	-	208	142	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.14	1.3	35.21	18.96
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	29	271	936	-	-	360	-	-	105	650
HCM Lane V/C Ratio	0.075	0.052	0.029	-	-	0.14	-	-	0.02	0.008
HCM Ctrl Dly (s/v)	140.6	19	9	-	-	16.6	-	-	39.9	10.6
HCM Lane LOS	F	C	A	-	-	C	-	-	E	B
HCM 95th %tile Q(veh)	0.2	0.2	0.1	-	-	0.5	-	-	0.1	0

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	1521	18	74	596	12	0	0	31	4	0	5
Future Vol, veh/h	13	1521	18	74	596	12	0	0	31	4	0	5
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	215	-	-	165	-	-	160	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	8	8	0	4	14	17	0	0	48	50	0	20
Mvmt Flow	14	1601	19	78	627	13	0	0	33	4	0	5

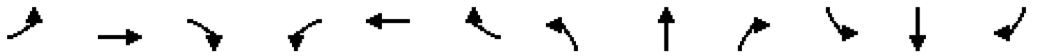
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	640	0	0	1620	0	0	2107	-	810	1617	2437	320
Stage 1	-	-	-	-	-	-	1638	-	-	789	789	-
Stage 2	-	-	-	-	-	-	469	-	-	828	1647	-
Critical Hdwy	4.26	-	-	4.18	-	-	7.5	-	7.86	8.5	6.5	7.3
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	-	-	7.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	-	-	7.5	5.5	-
Follow-up Hdwy	2.28	-	-	2.24	-	-	3.5	-	3.78	4	4	3.5
Pot Cap-1 Maneuver	901	-	-	389	-	-	30	0	241	43	32	626
Stage 1	-	-	-	-	-	-	107	0	-	261	405	-
Stage 2	-	-	-	-	-	-	549	0	-	245	158	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	901	-	-	389	-	-	23	-	241	29	25	626
Mov Cap-2 Maneuver	-	-	-	-	-	-	83	-	-	86	64	-
Stage 1	-	-	-	-	-	-	105	-	-	209	324	-
Stage 2	-	-	-	-	-	-	435	-	-	209	156	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.08	1.8	22.24	27.82
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	241	901	-	-	389	-	-	86	626
HCM Lane V/C Ratio	-	0.135	0.015	-	-	0.2	-	-	0.049	0.008
HCM Ctrl Dly (s/v)	0	22.2	9.1	-	-	16.6	-	-	49.1	10.8
HCM Lane LOS	A	C	A	-	-	C	-	-	E	B
HCM 95th %tile Q(veh)	-	0.5	0	-	-	0.7	-	-	0.2	0

Capacity Analysis Summary Sheets

Projected Weekday Evening Peak Hour Conditions



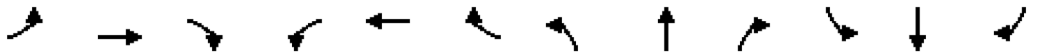
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	567	165	199	1227	29	430	252	169	12	173	114
Future Volume (vph)	50	567	165	199	1227	29	430	252	169	12	173	114
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	370		250	380		250	235		250	270		285
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	180			180			195			120		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98				1.00					0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3619	1599	1736	3585	1568	1703	1980	1553	1543	1961	1599
Flt Permitted	0.092			0.332			0.421			0.594		
Satd. Flow (perm)	171	3619	1563	607	3585	1568	754	1980	1553	965	1961	1577
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			170			89			180			89
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2697			1321			1268			556	
Travel Time (s)		40.9			20.0			19.2			8.4	
Confl. Peds. (#/hr)							2					2
Confl. Bikes (#/hr)			3									
Peak Hour Factor	0.97	0.97	0.97	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	5%	1%	4%	6%	3%	6%	1%	4%	17%	2%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	585	170	212	1305	31	457	268	180	13	184	121
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	8.0	3.0	3.0	8.0	3.0
Minimum Split (s)	7.5	21.5	7.5	7.5	21.5	7.5	7.5	14.5	7.5	7.5	14.5	7.5
Total Split (s)	15.0	42.0	21.0	16.0	43.0	15.0	21.0	37.0	16.0	15.0	31.0	15.0
Total Split (%)	13.6%	38.2%	19.1%	14.5%	39.1%	13.6%	19.1%	33.6%	14.5%	13.6%	28.2%	13.6%
Yellow Time (s)	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5	3.0
All-Red Time (s)	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	3.0	3.0	6.0	3.0	3.0	6.0	3.0	3.0	6.0	3.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	54.7	44.7	65.7	62.6	49.6	61.7	41.4	32.7	50.6	26.5	17.4	27.4
Actuated g/C Ratio	0.50	0.41	0.60	0.57	0.45	0.56	0.38	0.30	0.46	0.24	0.16	0.25
v/c Ratio	0.28	0.40	0.17	0.45	0.81	0.03	1.04	0.46	0.22	0.05	0.60	0.26
Control Delay (s/veh)	16.3	25.5	2.2	15.8	32.0	0.1	85.1	34.7	3.0	21.1	50.6	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	16.3	25.5	2.2	15.8	32.0	0.1	85.1	34.7	3.0	21.1	50.6	10.8
LOS	B	C	A	B	C	A	F	C	A	C	D	B
Approach Delay (s/veh)		20.0			29.2			53.8			34.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		B			C			D			C	
Queue Length 50th (ft)	16	157	0	72	427	0	~303	162	0	7	124	17
Queue Length 95th (ft)	38	237	31	128	#640	0	#508	232	36	20	188	57
Internal Link Dist (ft)		2617			1241			1188			476	
Turn Bay Length (ft)	370		250	380		250	235		250	270		285
Base Capacity (vph)	267	1469	1007	485	1617	998	439	593	833	346	445	529
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.40	0.17	0.44	0.81	0.03	1.04	0.45	0.22	0.04	0.41	0.23

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 18 (16%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay (s/veh): 33.8		Intersection LOS: C	
Intersection Capacity Utilization 84.7%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Midlothian Road & Peterson Road

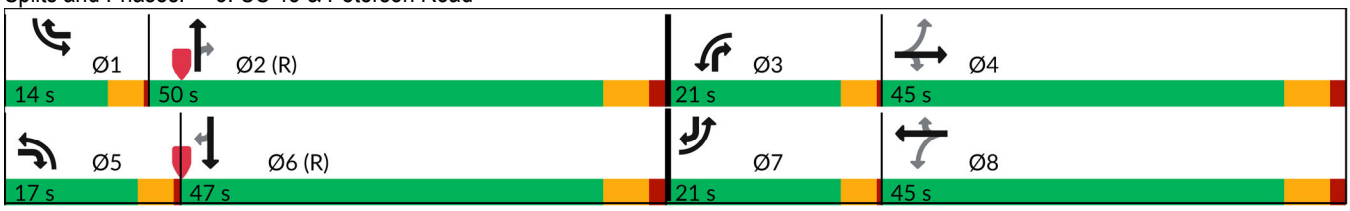


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	283	494	92	130	901	86	222	1285	77	94	942	310
Future Volume (vph)	283	494	92	130	901	86	222	1285	77	94	942	310
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	2000	1900	1900	2000	1900
Storage Length (ft)	300		260	265		160	215		170	165		200
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	175			180			300			300		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3762	1524	1719	3551	1583	3335	3762	1599	3242	3725	1509
Flt Permitted	0.093			0.436			0.950			0.950		
Satd. Flow (perm)	170	3762	1524	789	3551	1583	3335	3762	1599	3242	3725	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			93			59			59			59
Link Speed (mph)		45			50			45			45	
Link Distance (ft)		1504			1816			1173			2198	
Travel Time (s)		22.8			24.8			17.8			33.3	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	4%	1%	6%	5%	7%	2%	5%	1%	1%	8%	2%	7%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	286	499	93	131	910	87	224	1298	78	95	952	313
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0	3.0	15.0	3.0
Minimum Split (s)	7.0	21.0	7.0	7.0	21.0	7.0	7.0	21.0	7.0	7.0	21.0	7.0
Total Split (s)	21.0	45.0	17.0	21.0	45.0	14.0	17.0	50.0	21.0	14.0	47.0	21.0
Total Split (%)	16.2%	34.6%	13.1%	16.2%	34.6%	10.8%	13.1%	38.5%	16.2%	10.8%	36.2%	16.2%
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5	3.5
All-Red Time (s)	0.5	1.5	0.5	0.5	1.5	0.5	0.5	1.5	0.5	0.5	1.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	61.6	44.8	63.1	52.2	39.0	53.8	12.3	45.2	62.4	8.8	41.7	64.7
Actuated g/C Ratio	0.47	0.34	0.49	0.40	0.30	0.41	0.09	0.35	0.48	0.07	0.32	0.50
v/c Ratio	1.00	0.38	0.12	0.33	0.85	0.13	0.71	0.99	0.10	0.43	0.80	0.40
Control Delay (s/veh)	90.6	33.7	4.1	22.1	52.0	9.5	70.0	65.4	6.6	64.2	46.4	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	90.6	33.7	4.1	22.1	52.0	9.5	70.0	65.4	6.6	64.2	46.4	18.3
LOS	F	C	A	C	D	A	E	E	A	E	D	B
Approach Delay (s/veh)		49.1			45.2			63.2			41.2	
Approach LOS		D			D			E			D	
Queue Length 50th (ft)	~197	167	0	64	401	14	99	~579	8	42	394	138
Queue Length 95th (ft)	#397	227	32	106	492	48	145	#754	35	73	479	216

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		1424			1736			1093			2118	
Turn Bay Length (ft)	300		260	265		160	215		170	165		200
Base Capacity (vph)	285	1297	795	473	1065	703	333	1308	867	249	1194	780
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.38	0.12	0.28	0.85	0.12	0.67	0.99	0.09	0.38	0.80	0.40

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 127 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay (s/veh): 50.6		Intersection LOS: D	
Intersection Capacity Utilization 93.1%		ICU Level of Service F	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 3: US 45 & Peterson Road



Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	729	10	19	1424	3	10	0	45	9	0	21
Future Vol, veh/h	10	729	10	19	1424	3	10	0	45	9	0	21
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	130	-	125	320	-	125	125	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	20	4	11	28	6	33	11	0	10	11	0	5
Mvmt Flow	10	759	10	20	1483	3	10	0	47	9	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1486	0	0	770	0	0	1561	2306	380	1923	2314	742
Stage 1	-	-	-	-	-	-	780	780	-	1523	1523	-
Stage 2	-	-	-	-	-	-	781	1526	-	401	791	-
Critical Hdwy	4.5	-	-	4.66	-	-	7.72	6.5	7.1	7.72	6.5	7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.72	5.5	-	6.72	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.72	5.5	-	6.72	5.5	-
Follow-up Hdwy	2.4	-	-	2.48	-	-	3.61	4	3.4	3.61	4	3.35
Pot Cap-1 Maneuver	369	-	-	691	-	-	69	39	596	36	38	352
Stage 1	-	-	-	-	-	-	335	409	-	113	182	-
Stage 2	-	-	-	-	-	-	335	182	-	573	404	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	369	-	-	691	-	-	61	37	596	32	36	352
Mov Cap-2 Maneuver	-	-	-	-	-	-	169	120	-	90	124	-
Stage 1	-	-	-	-	-	-	326	397	-	110	177	-
Stage 2	-	-	-	-	-	-	305	176	-	513	393	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.2	0.14	14.49	26
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	169	596	369	-	-	691	-	-	90	352
HCM Lane V/C Ratio	0.062	0.079	0.028	-	-	0.029	-	-	0.104	0.062
HCM Ctrl Dly (s/v)	27.7	11.6	15	-	-	10.4	-	-	49.5	15.9
HCM Lane LOS	D	B	C	-	-	B	-	-	E	C
HCM 95th %tile Q(veh)	0.2	0.3	0.1	-	-	0.1	-	-	0.3	0.2

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	777	1	15	1412	6	14	0	83	10	0	20
Future Vol, veh/h	5	777	1	15	1412	6	14	0	83	10	0	20
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	0	-	-	165	-	-	160	-	0	215	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	20	5	0	29	6	33	0	0	5	2	0	5
Mvmt Flow	5	818	1	16	1486	6	15	0	87	11	0	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1493	0	0	819	0	0	1604	-	409	1941	2351	746
Stage 1	-	-	-	-	-	-	829	-	-	1521	1521	-
Stage 2	-	-	-	-	-	-	775	-	-	419	829	-
Critical Hdwy	4.5	-	-	4.68	-	-	7.5	-	7	7.54	6.5	7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	-	-	6.54	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	-	-	6.54	5.5	-
Follow-up Hdwy	2.4	-	-	2.49	-	-	3.5	-	3.35	3.52	4	3.35
Pot Cap-1 Maneuver	367	-	-	653	-	-	72	0	583	39	36	349
Stage 1	-	-	-	-	-	-	335	0	-	124	183	-
Stage 2	-	-	-	-	-	-	361	0	-	582	388	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	367	-	-	653	-	-	65	-	583	32	35	349
Mov Cap-2 Maneuver	-	-	-	-	-	-	180	-	-	97	123	-
Stage 1	-	-	-	-	-	-	331	-	-	121	178	-
Stage 2	-	-	-	-	-	-	331	-	-	488	382	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.1	0.11	14.37	26.21
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	180	583	367	-	-	653	-	-	97	349
HCM Lane V/C Ratio	0.082	0.15	0.014	-	-	0.024	-	-	0.109	0.06
HCM Ctrl Dly (s/v)	26.8	12.3	15	-	-	10.6	-	-	46.7	16
HCM Lane LOS	D	B	B	-	-	B	-	-	E	C
HCM 95th %tile Q(veh)	0.3	0.5	0	-	-	0.1	-	-	0.4	0.2

LCDOT Turn Lane Warrants

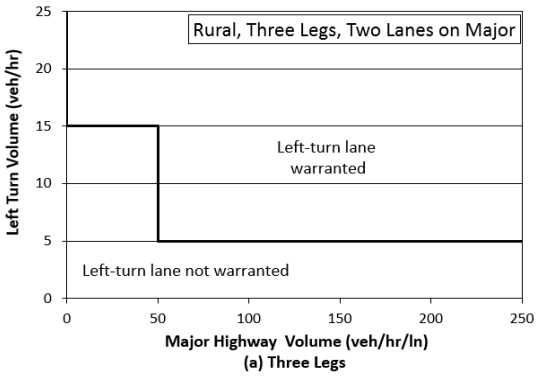
Table 5.3 Right-Turn Lane Guidelines for Two-Lane Highways

Approach Lane Volume (vph)	Minimum Right-turn Volume Warranting Exclusive Lane (vph) By Posted Speed Limit				
	35 mph	40 mph	45 mph	50 mph	55 mph
200	--	--	75	35	20
300	--	120	40	25	15
400	200	50	30	20	10
500	50	25	20	15	10
600	25	15	15	10	10
800	15	10	10	10	10
1200	10	10	10	10	10

Table 5.4 Right-Turn Lane Guidelines for Four-Lane Highways

Approach Lane Volume (vph)	Minimum Right-turn Volume Warranting Exclusive Lane (vph) By Posted Speed Limit				
	35 mph	40 mph	45 mph	50 mph	55 mph
300	--	--	--	75	20
400	--	40	40	40	15
500	--	40	40	30	15
600	40	40	40	25	10
800	40	35	30	20	10
1200	25	30	20	15	10
1600	15	15	15	10	5
2000	10	10	10	10	5

Table 5.5 Left Turn Lane Guidelines for Rural Two-Lane Highways



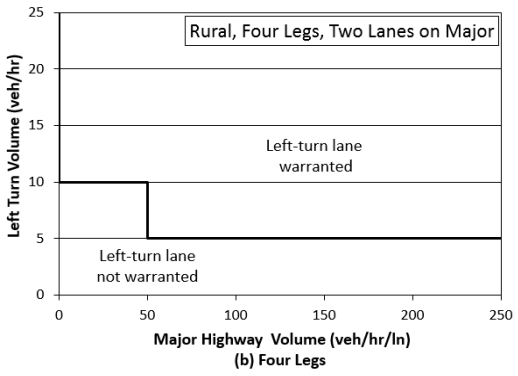
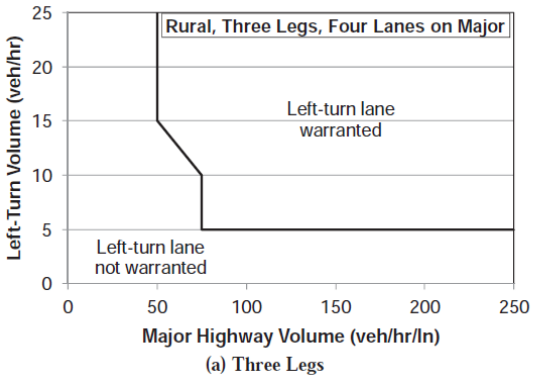


Table 5.6 Left Turn Lane Guidelines for Rural Four-Lane Highways



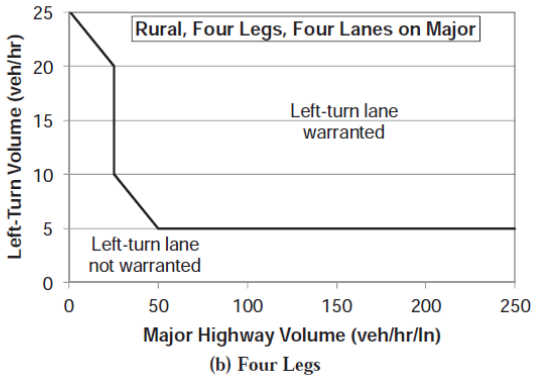
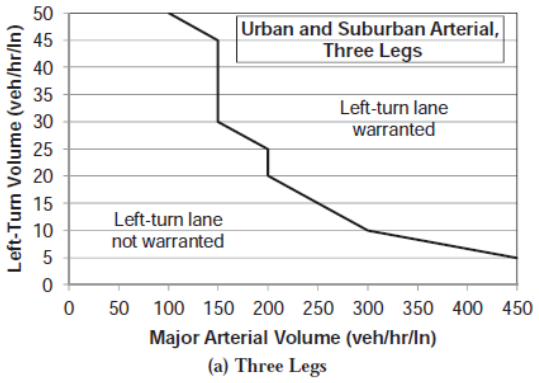
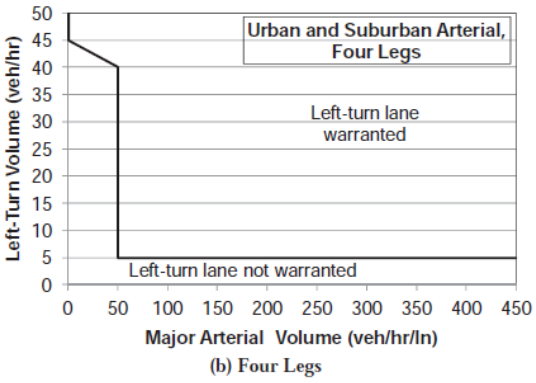


Table 5.7 Left Turn Lane Guidelines for Urban and Suburban Arterials





Source: NCHRP Report 745: Left Turn Accommodations at Unsignalized Intersections, TRB 2013

PIONEER
ENVIRONMENTAL SERVICES, LLC

Phase I Environmental Site Assessment

Harris and Peterson Roads
Libertyville, Illinois

Prepared For:
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Project Number:
15-0501-101

Date Submitted:

November 20, 2015

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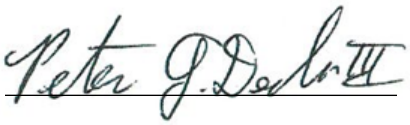

Peter Decker
Project Manager
Report Author

15-0501-101
Pioneer Project Number

November 20, 2015
Date

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FIGURE 1: Site Diagram

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A. Area Map
B. USGS Maps & Aerial Photographs
C. User Questionnaire
D. Photographic Log
E. Environmental Database Report
F. Qualifications

EXECUTIVE SUMMARY

Pioneer Environmental Services, LLC (Pioneer) was engaged by Northbrook Properties, Inc (Client) to complete a Phase I Environmental Site Assessment (ESA) of the property located at Harris and Peterson Roads, in Libertyville, Illinois (subject property). The irregular-shaped subject property, which encompasses approximately 63 acres, consists of a farmstead on its south-central portion and associated agricultural land. The farmstead is comprised of a residence (subject building), an "automobile repair shop," two large sheds, a minor shed, a garage, a grain elevator/silo and associated grain storage bins. Low-lying vegetation and gravel surround the on-site structures, and the remaining portions of the site are primarily tilled soils at present. As a note, Harris Road runs north-south through the central portion of the subject property. See Figure 1 for a Site Diagram.

Information indicated the subject property was developed with an original farmstead on its south-central portion by 1920. The original residential structure was demolished and the site was redeveloped with the existing residential structure (subject building) by 1958. The original barn, sheds and miscellaneous storage structures were demolished by 1978 and the subject property was developed with the existing ancillary structures by that time.

Pioneer was provided an Underground Storage Tank (UST) Closure Report, dated September 2015 and prepared by Environmental Testing & Consulting, Inc. (ETC), that documented the removal of two, 10,000 gallon diesel fuel USTs from the site. Reportedly on August 25, 2015, Tsarpalas Enterprises, Inc. (Tsarpalas), a licensed tank removal contractor, excavated and removed The USTs and the associated underground piping and dispensing island. Tsarpalas reportedly performed photoionization detector (PID) readings of ambient air conditions around the UST excavation pit, from the removed spoils and from the accessible portions of the walls and floor of the excavation pit, and all PID readings were 0.0 parts per million (ppm). Additionally, 12 soil samples were collected from the floor and walls of the excavation pit and one sample from the piping run. The 13 soil samples were submitted for laboratory analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX) and polynucleararomatic hydrocarbon compounds (PNAs). The reported concentrations of BTEX and PNAs were all below the most stringent Tier 1 soil remediation objectives (SROs), and no leaking UST (LUST) was reported in association with the former on-site USTs.

Pioneer's visual inspection of the subject property was conducted on November 17, 2015. The subject property is presently utilized for residential, agricultural and limited automobile repair purposes. Wastes currently generated on site consist of general refuse, waste oil, spent parts washer solvent and soiled rags. Pioneer was informed waste oils are collected within a plastic tote located within the repair shop and subsequently transferred to an aboveground storage tank (AST) located along the northern wall of the minor shed; waste oils are then reportedly removed on an as-needed basis by various oil removal companies or sold to private individuals for heating purposes. A solvent-based parts washer is located in the automotive repair area and is reportedly serviced on an as-needed basis by Safety Kleen. Soiled (i.e. oily) rags are stored in a 5-gallon metal container located in the automotive repair area and are also reportedly removed on an as-needed basis by Safety Kleen. General refuse is placed in a dumpster that is located eastern wall of

the subject property and serviced regularly by Advanced Disposal. At the time of the recent site inspection, housekeeping practices appeared to be in good order and Pioneer did not observe obvious physical evidence of environmental concerns associated with the operations conducted at the subject property.

Pioneer did not observe obvious evidence of underground storage tanks (UST) emplacement on site at the time of the inspection. However, this site is listed on Illinois Register of USTs as having had the aforementioned two 10,000-gallon diesel USTs removed from the subject property in August 2015 (refer to previous discussion).

In addition to the on-site UST listing, a review of the appropriate federal and state environmental databases revealed that four Site Remediation Program/Voluntary Cleanup Program (SRP/VCP) listings (SRP/VCP) and three LUST incidents are located within the ASTM minimum search distances from the subject property (see Section 4.2). However, based on the available information, the relatively impermeable nature of the regional geologic materials, and their distance, Pioneer does not believe that these listings represent recognized environmental conditions to the subject property at this time.

Upon completion of this report, no recognized environmental conditions (RECs) were identified in connection with the subject property.

The Executive Summary is intended to provide a brief overview of the findings of this investigation. It should be noted that although the Executive Summary is an integral part of a report, it should not be substituted in lieu of reading the entire report. The entire report must be read in order to fully understand the findings and potential environmental concerns associated with the subject property.

1.0 STATEMENT OF WORK

Pioneer Environmental Services, LLC (Pioneer) was engaged by Northbrook Properties, Inc (Client) to complete a Phase I Environmental Site Assessment (ESA) of the property located at Harris and Peterson Roads, in Libertyville, Illinois (subject property). The irregular-shaped subject property, which encompasses approximately 63 acres, consists of a farmstead on its south-central portion and associated agricultural land. The farmstead is comprised of a residence (subject building), a "automobile repair shop," two large sheds, a minor shed, a garage, a grain elevator/silo and associated grain storage bins. See Figure 1 for a Site Diagram and Appendix A for an Area Map.

A Phase I ESA is designed to identify, to the extent feasible pursuant to the processes described by ASTM Standard Practice E 1527-13, "recognized environmental conditions" (see following definition) in connection with the subject property. This ASTM standard was developed in order to qualify for the Landowner Liability Protections offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2002 (the "Brownfields Amendments"), in an attempt to achieve *"all appropriate inquiry."* The ASTM standard also was developed to provide current owners, prospective buyers, lending institutions or other interested parties with qualified professional judgments concerning the presence or likely presence of a petroleum/hazardous substance release or substantial threat of a release of a petroleum/hazardous substance. The scope of this Phase I ESA includes a historical review of the site's development and prior use, visual inspection of the site and any associated structures and other improvements, and a review of state and federal environmental/ regulatory databases for the subject site and surrounding properties in accordance with the requirements of the ASTM standard. Pioneer's Phase I ESAs are generally expanded to identify several potential "business environmental risk(s)," including a search for suspect asbestos-containing materials (ACMs), lead-based paint (LBP), and potential polychlorinated biphenyl (PCB)-containing light ballasts. Thus, the information contained within this Phase I ESA has been compiled in such a manner that meets or exceeds the recommended practices established by ASTM Standard Practice E 1527-13, except whereas specified within this report.

The scope of the Phase I ESA can be further expanded from outlined above as specified by the Client, or "User." Unless specifically instructed by the User as to the purpose of the Phase I ESA, Pioneer is required to assume that it is being prepared for the purpose of qualifying for the innocent landowner defense to CERCLA liability. The following specific additions or instructions were made by the User with regard to the purpose and practice of this Phase I ESA: *none*.

The following terminology and definitions are specific to the ASTM standard:

> *Recognized Environmental Conditions: "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of future release to the environment. De minimis conditions are not recognized environmental conditions."*
>
> *Controlled Recognized Environmental Condition: "a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the*

satisfaction of the applicable regulatory authority…, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls…"

Historical Recognized Environmental Conditions: "a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls…"

De Minimis Conditions: "a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies."

Business Environmental Risk: "a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate (such as asbestos, regulatory compliance, lead-based paint issues, etc.), not necessarily limited to those environmental issues required to be investigated in this (ASTM) practice."

Findings: "known or suspect environmental conditions associated with the property, and which may include recognized environmental conditions, controlled recognized environmental conditions, historical recognized environmental conditions and de minimis conditions."

2.0 HISTORICAL REVIEW

2.1 Introduction

The historical review process is intended to provide a chronological outline of the prior uses and development of the subject property in accordance with Section 8.3 of the ASTM standard. The investigative research attempts to identify potential environmental hazards and their associations with structures or operations of the past and present. Particular attention was focused on past owners or operations that may have been involved with the generation, treatment, handling, storage, or disposal of petroleum/hazardous materials and other practices that may have led to recognized environmental conditions in connection with the subject property.

Pertinent information was collected from standard historical sources that were reasonably ascertainable. Sources reviewed on file at the University of Illinois at Chicago (UIC) Library included available Sanborn Fire Insurance Maps (Sanborn maps), which provide detailed drawings of the location and use of buildings in a given time period as early as the late 1800s; USGS 7.5 Minute Topographic Maps, and aerial photographs (USGS maps and aerial photographs; Appendix B [selected maps and aerials]), some of which were also available on-line. Additionally, where applicable, Pioneer reviewed local building and fire department records, tax assessor records, zoning/land use records and historical city directories. Further, Pioneer conducted interviews with persons knowledgeable of the historical use of the site. Primary sources utilized during this investigation are documented in Section 9.0 of this report. A detailed account of the sources contacted during this investigation, including the dates that information was requested and last updated, is maintained on file at Pioneer and is available upon request.

Per the ASTM standard, additional information, including chain of title records, documentation pertaining to environmental liens and/or site use limitations, specialized site knowledge, documentation pertaining to site valuation reduction for environmental issues and/or previous environmental assessments/reports, was requested from the Client, subject property owner or site occupant. A description of the documentation provided by the various entities follows.

2.2 Subject Property History

The historical sources reviewed provided the following information regarding the subject property's development (see table, following page):

Subject Property History

Date	Source	Description/Site Activity
1920, 1923 & 1932	USGS Maps	The south-central portion of the subject property was denoted/viewed as being developed with a farmstead, and the remainder appeared to be vacant land utilized for agricultural purposes on the aerial photographs.
1939, 1946 & 1953	Aerial Photographs	
1958, 1962, 1965 & 1973	USGS Maps	The original residential structure was demolished and replaced with the current single-family residential structure (subject building).
1958 & 1972	Aerial Photographs	

Date	Source	Description/Site Activity
1981, 1989, 1993 & 2012	USGS Maps	The original barn, sheds and miscellaneous storage structures were demolished, and the subject property was developed with the existing ancillary structures.
1978, 1988, 1993, 1999, 2007 & 2014	Aerial Photographs	

As a note, Pioneer reviewed the Sanborn map collection on file at the UIC Library; however, the subject property and surrounding sites were not included within any of the mapped areas.

2.2.1 Village of Libertyville

Pioneer submitted a Freedom of Information Act (FOIA) to Village of Libertyville in an effort to obtain information on file pertaining to the subject property's historical development and use, including records of underground storage tanks (USTs) and aboveground storage tanks (ASTs), as well as petroleum or hazardous spills. Due to time constraints, however, a response from this agency was not received at the time of this report's completion.

2.2.2 Lake County Assessor's Office

Pioneer visited the Lake County County Assessor's Office website in an effort to obtain information regarding the subject property; the following table documents information pertaining to the subject property provided by this source:

Address	Property Index Number (PIN)	Property Size (in square feet)	Property Description	Building Age
30532 North Harris Road	10-12-100-016	756,637	Farmland	Not Applicable (NA)
30568 North Harris Road	10-12-101-001	43,560	Residential Improved	59
30568 North Harris Road	10-12-200-013	1,998,532	Farmland	NA

2.3 Adjacent Site History

The historical sources reviewed provided the following information regarding the development of the adjacent sites (see table, below):

Adjacent Site History

Date	Source	Description/Site Activity
1920, 1923, 1932, 1958, 1962, 1965, 1973, 1981, 1989 & 1993	USGS Maps	The subject property was bordered to the north and west by vacant agricultural land. A railroad right-of-way bordered to the subject property to the east. To the south, across Peterson Road, the subject property was bordered by a farmstead and vacant agricultural land, and the site was bisected by Harris Road.
1939, 1946, 1953, 1958, 1972, 1978, 1988, 1993 & 1999	Aerial Photographs	
2007	Aerial Photograph	The easternmost and the westernmost south adjacent sites were developed with light industrial structures.

Date	Source	Description/Site Activity
2012	USGS Map	The east adjacent vacant land remained vacant but no longer appeared to be utilized for agricultural purposes.
2014	Aerial Photograph	

2.4 Property Owner/Key Site Manager Questionnaire

Pioneer submitted a Property Owner/Key Site Manager Questionnaire to Mr. Brad Cockrum, a representative of the current ownership, to create a foundation and preliminary history of the subject property and to obtain information regarding potential environmental concerns. However, a completed Property Owner/Key Site Manager Questionnaire was not been received at the time of this report's completion.

Additionally, Pioneer conducted an on-site interview with Mr. Cockrum and was informed that the subject property has been in his wife's family for three generations. Mr. Cockrum stated the subject property has been utilized for agricultural purposes since the early 1900s. Additionally, he stated that "Mother Earth" has been utilizing an on-site shed as an automobile repair shop for approximately 2.5 years (see Section 3.7).

2.5 User Provided Information/Questionnaire

Pioneer submitted a User Questionnaire, included as Appendix D, Section X.3 to ASTM Standard Practice E 1527-13, to Mr. William Lewellen, representative of the Client. The questionnaire, which was completed by Mr. Lewellen revealed that he was not aware of the following: any environmental cleanup liens filed against the property; any Activity and Use Limitations (AULs), such as engineering controls, land use restrictions or institutional controls in place at the site; any devaluation of the fair market value of the site due to the presence or presumed presence of on-site contamination; any specific chemicals present on the subject property or releases reported in association with these chemicals; or any environmental cleanups that have taken place at the site. See Appendix C for a copy of the completed User Questionnaire.

2.6 Chain of Title/Environmental Lien Search Documentation

No title documentation or environmental lien search reports were provided to Pioneer for review. Therefore, it is unknown whether there are any environmental liens associated with the site.

2.7 Previous Environmental Activity Summary

Pioneer was provided an Underground Storage Tank (UST) Closure Report, dated September 2015 and prepared by Environmental Testing & Consulting, Inc. (ETC), that documented the removal of two, 10,000 gallon diesel fuel USTs from the site. Reportedly on August 25, 2015, Tsarpalas Enterprises, Inc. (Tsarpalas), a licensed tank removal contractor, excavated and removed these USTs and the associated underground piping and dispensing island. Tsarpalas reportedly performed photoionization detector (PID) readings of ambient air conditions around the UST excavation pit, from the removed spoils and from the accessible portions of the walls and floor of the excavation pit, and all PID readings were 0.0 parts per million (ppm).

Additionally, 12 soil samples were collected from the floor and walls of the excavation pit and one sample from the piping run. The 13 soil samples were submitted for laboratory analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX) and polynucleararomatic hydrocarbon compounds (PNAs). The reported concentrations of BTEX and PNAs were all below the most stringent Tier 1 soil remediation objectives (SROs), and no leaking UST (LUST) was reported in association with the former on-site USTs.

3.0 SITE INSPECTION

3.1 Introduction

A visual inspection of the subject property consisted of a physical walk-through of the grounds to obtain information regarding recognized environmental conditions in connection with the subject site in accordance with Section 9.0 of the ASTM standard. Particular attention was focused on, but not limited to, the nature of apparent past and present operations at and adjacent to the subject site and a specific search for certain petroleum/hazardous substances. The purpose of the inspection is to assess the potential of a release or imminent threat of a release of a petroleum/hazardous substance and/or waste based on the activities performed and observations noted.

The following sections address the observations noted during the visual inspection conducted on November 17, 2015. Pioneer representative Mr. Peter Decker was accompanied by Mr. Cockrum during portions of the site inspection. A photographic log for the subject property is included in Appendix D of this report.

3.2 Site Location & General Description

The subject property is located along the north side of Peterson Road, immediately east and west of Harris Road and approximately 620 feet east of Midlothian Road, in Libertyville, Illinois (subject property). The irregular-shaped subject property, which encompasses approximately 63 acres, consists of a farmstead on its south-central portion and associated agricultural land. The farmstead is comprised of a residence (subject building), an "automobile repair shop," two large sheds, a minor shed, a garage, a grain elevator/silo and associated grain storage bins. Low-lying vegetation and gravel surround the on-site structures, and the remaining portions of the site are primarily tilled soils at present. As a note, Harris Road runs north-south through the central portion of the subject property. Figure 1 for a Site Diagram.

No signs of distressed vegetation, stained soils or suspect odors were noted on site at the time of the recent inspection. Additionally, there was no evidence of environmentally-suspect discarded materials or indiscriminate dumping on the subject property.

3.3 Surrounding Properties

According to the online Libertyville Zoning Map and the online Lake County Zoning Map, the subject property and the surrounding properties are located within an Agricultural District (zoned "AG"), a Limited Industrial District (zoned I-1) and/or a Office, Manufacturing and Distribution Park (zoned "O-2"). The following provides a summary of the adjacent properties noted during the recent site inspection (see table, next page):

Adjacent Sites

Location	Site Improvements	Environmental Database Listings
North	The subject property is bordered to the north by vacant undeveloped land, followed by Midlothian Road.	None
East	The subject property is bordered to the east (from north to south) by vacant undeveloped land and a natural gas pumping station followed by a railroad right-of-way.	None
South	The subject property is bordered to the south by Peterson Road, followed by (from the east to west) an industrial structure (1700 Franklin Boulevard) occupied by Meyer & Sons Inc, farmland, a residential structure, farmland, an industrial structure (1501 Harris Road) occupied by Medline Industries.	None
West	The subject property is bordered to the west by vacant land, followed by Midlothian Road.	None

3.4 Physical Setting

With the exception of a drainage ditch along the west border of the subject property, the topography of the subject property is in general relatively flat. According to the most recent USGS map available, dated 2012, the elevation of the subject property is approximately 810 feet above mean sea level. Based on further interpretation of this map, localized groundwater is expected to flow towards a southeasterly-located drainage pond (note: site-specific conditions may vary due to a variety of factors, including geologic anomalies, utilities, nearby pumping wells [if present] and subsurface structures and/or developments).

Pioneer reviewed Plate 1 of the ISGS Circular, Potential for Contamination of Shallow Aquifers in Illinois, indicating that the regional geologic materials underlying the subject site are designated as “E”-type soils (Berg, et al., 1984). An “E” classification is described as uniform, relatively impermeable silty or clayey till at least 50 feet thick, with no evidence of interbedded sand and gravel.

3.5 Site Improvements

As mentioned, the south-central portion of the subject property is presently developed with a residence (subject building), an “automobile repair shop,” two large sheds, a minor shed, a garage, a grain elevator/silo and associated grain storage bins.

The subject building is a one-story, rectangular-shaped wood frame residence that is constructed atop a partial basement (beneath its northern portion). The subject building is divided into a kitchen, bathrooms, bedrooms and a living room. The basement is utilized for the storage of miscellaneous household items. The floors throughout the subject building consist of carpeting, hardwood, linoleum and concrete; the walls consist of drywall, wood paneling, exposed brick and cinder block (basement); and the ceilings are drywall and exposed wooden beam and planks (basement).

The “automobile repair shop,” large sheds, minor shed and garage are located on the southern portion of the farmstead area, are all wood-frame construction atop of concrete foundations, with no interior finishing materials. The three sheds and garage were utilized for the storage of various agricultural vehicles, trailers, tools and etc.

3.6 Site Utilities

The subject building appears to be heated by ceiling-mounted natural gas-powered furnaces and roof-mounted heating ventilation and air-conditioning (HVAC) systems and the "automobile repair shop" was heated with ceiling mounted natural gas-powered heating units. . The following table describes utilities reportedly provided to the subject property:

Site Utilities

Utility	Provider
Sanitary and Sewer Systems	Septic
Potable Water	On-site well
Natural Gas	Nicor
Electricity	Commonwealth Edison (ComEd)

3.7 Facility Operations & Wastes

The subject property is presently utilized for residential, agricultural and limited automobile repair purposes. Wastes currently generated on site consist of general refuse, waste oil, spent parts washer solvent and soiled rags. Pioneer was informed waste oils are collected within a plastic tote located within the repair shop and subsequently transferred to an aboveground storage tank (AST) located along the northern wall of the minor shed; waste oils are then reportedly removed on an as-needed basis by various oil removal companies or sold to private individuals for heating purposes. A solvent-based parts washer is located in the automotive repair area and is reportedly serviced on an as-needed basis by Safety Kleen. Soiled (i.e. oily) rags are stored in a 5-gallon metal container located in the automotive repair area and are also reportedly removed on an as-needed basis by Safety Kleen. General refuse is placed in a dumpster that is located eastern wall of the subject property and serviced regularly by Advanced Disposal. At the time of the recent site inspection, housekeeping practices appeared to be in good order and Pioneer did not observe obvious physical evidence of environmental concerns associated with the operations conducted at the subject property.

3.8 Underground Storage Tanks

Underground storage tanks (USTs) that exist or previously existed at sites may represent a potential environmental risk due to the possibility of tank system failures and/or spills and overfills. An inspection was conducted at the subject property in order to identify the location of any USTs that exist or may have existed. Specific attention was focused on visual indications of equipment associated with USTs, such as fill or vent piping, dispensers, dispenser islands, or evidence of excavations. Information for the UST investigation was gathered from the visual inspection, personal interviews, the local municipal agencies, and the Illinois Register of USTs.

3.8.1 Subject Property Underground Storage Tanks

Pioneer did not observe evidence of the current emplacement of USTs on the subject property at the time of the recent site inspection. However, this site is listed on Illinois Register of USTs as having had the aforementioned two 10,000-gallon diesel USTs removed from the subject property in August 2015 (refer to Section 2.7).

3.8.2 Adjacent Property Underground Storage Tanks

Pioneer performed a visual inspection of the exterior portions of the surrounding properties from the subject property's borders and public thoroughfares and did not observe obvious physical evidence of UST emplacement. Furthermore, there was no information on file with the Illinois Register of USTs concerning the registration of USTs located at the adjacent properties.

3.9 Other Petroleum/Hazardous Substance Storage

At the time of the recent inspection, Pioneer observed the following petroleum/hazardous substances on site:

Petroleum/Hazardous Substances Summary

(Number) Size/ Type of Container(s)	Contents	Location	Secondary Containment	Visual Observations
(~20) quart plastic containers	Engine Oil	Automobile repair shop	No	Minor staining
(~20) quart plastic containers	Coolant	Automobile repair shop	No	Minor staining
(1) 750-gallon AST	Used Oil	Along the north exterior wall of the minor shed	No	Minor staining
(1) 275-gallon plastic tote	Used Oil	Along the north interior wall of the automobile repair shop	No	Minor staining
(9) 55-gallon drums	Engine Oil	Southwest interior corner of the service area	No	Minor staining
(1) parts washer	Petroleum naphtha solvent	Along the east interior wall of the automobile repair shop	No	Minor staining

3.10 Asbestos-Containing Materials

This section addresses a potential environmental concern beyond the scope of ASTM Standard Practice E 1527-13. Restrictions for asbestos use in building materials became more stringent in the 1970s, and the use of friable and sprayed-on asbestos was prohibited in 1978 by the Environmental Protection Agency with the passage of the National Emission Standards for Hazardous Air Pollutants (NESHAP). Friable and sprayed-on asbestos-containing materials (ACMs) are easily crumbled or pulverized and therefore easily made airborne. Friable ACMs are a potential health hazard. Non-friable ACMs are not a major concern unless they become airborne by such processes as sanding, drilling, milling, cutting, etc. during renovation or demolition. As a note, the 1990 ban on non-friable ACMs was revised in 1993. The revised ban applies only

to (1) any new uses of asbestos, and (2) materials for which manufacturing, importing or processing was discontinued prior to July 12, 1989. Products that are no longer subject to the ban include, but are not limited to, vinyl asbestos-containing floor tile, asbestos-cement shingles and roofing felt.

A comprehensive asbestos survey is beyond the scope of this Phase I ESA. The asbestos survey conducted at the subject property was limited to an inspection of readily-accessible interior areas and was not intended to be utilized for building renovation or demolition purposes. Particular attention was focused on identifying asbestos-containing insulation, plaster materials, floor tiles, and sprayed or troweled-on structural coverings. Sampling and analysis were not included as part of this investigation.

Drywall (and associated tape/joint compound) and linoleum, materials which are typically considered suspect ACMs, were identified in the subject building during the site investigation. These building materials are considered potentially asbestos-containing based on their physical characteristics and potential age and were observed to be in good condition.

3.11 Lead-Based Paint

The use of lead-based paint (LBP) was widespread in the construction industry prior to 1973 due to its durability. At that time, amendments to the Lead Based Paint Poisoning Prevention Act established the allowable level of lead in paint to 0.5 percent by weight of dry sample. This limit was implemented to eliminate the hazard of LBP in housing. LBPs can exist on any painted surface. Such paint, if properly maintained and in good condition, poses little risk. However, damaged or deteriorated surfaces can present a health threat, especially to children under six years of age. Chipping or peeling paint poses a threat if ingested; however, the greatest danger lies in the inhalation of dust particles. Lead dust particles, frequently associated with deteriorating LBP, can be brought to the surface by moisture or can be released by friction or by frequent impact on surfaces such as windows and door frames.

A comprehensive LBP survey is beyond the scope of this Phase I ESA. The LBP survey conducted at the subject property was necessarily limited to a visual inspection of readily accessible interior areas. Particular attention was focused on identifying deteriorated areas of painted surfaces and frequent impact surfaces such as window and door frames. Bulk sampling and analysis of suspect LBPs were not included within the scope of this survey.

Painted surfaces were observed throughout the subject building. Based on the apparent age of the structure (circa early 1950s), the painted surfaces are considered to contain lead. The painted surfaces in the subject building were generally in fair condition.

3.12 Polychlorinated Biphenyl Compounds

The use of Polychlorinated Biphenyl (PCB) compounds was widespread in various manufacturing and industrial applications due to their superior dielectric, lubricating and fire-retardant properties prior to their

federal ban in 1979. Pioneer's focus has been limited to the more common potential PCB sources, which include dielectric fluids used in electrical equipment, such as transformers and capacitors, unless otherwise stated.

Pioneer observed two pad-mounted electrical transformers located near the western shed. These transformer appeared in sound condition, and no staining or other signs of fluid leakage were noted on or below the units.

The ballasts associated with fluorescent light fixtures are also possible sources of PCBs depending on their specific manufacturer and the date of manufacture. Equipment containing PCBs that is old, neglected, or damaged may leak and is therefore potentially hazardous depending on the actual PCB content and the specific PCB isomer involved. As a result, Pioneer includes a discussion of this equipment although this specific potential source of PCBs is beyond the scope of the ASTM standard.

Fluorescent lights were observed in the subject building and in the sheds. In general, the light fixtures appeared to be in sound condition, and no signs of fluid leakage were noted from their ballasts. The light fixtures are considered suspect sources of PCBs based upon their potential age.

4.0 ENVIRONMENTAL DATABASE REVIEW

4.1 Introduction

The purpose of this section is to identify sites within a prescribed distance from the subject property that are listed on standard environmental databases that may have a potential impact on the subject property in accordance with Section 8.2 of the ASTM Standard. The following is a list of federal and state databases searched for the area surrounding the subject property; the search distances are noted in parenthesis.

NPL:	The National Priorities List (NPL) is a federal list of abandoned or uncontrolled hazardous waste sites identified for priority remedial action under the Superfund program (1.0 mile).
CERCLIS:	The Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) is a compilation of the sites that the EPA has investigated or is currently investigating, pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), for a release or threatened release of a hazardous substance. It also includes abandoned or uncontrolled waste sites identified under the federal Superfund program (0.5 mile). Sites that have been investigated and subsequently de-listed from CERCLIS are designated as "No Further Remedial Action Planned" (NFRAP) sites (0.5 mile).
RCRIS:	The Resource Conservation and Recovery Information System (RCRIS) is a listing of facilities that are regulated by the Resource Conservation and Recovery Act (RCRA). RCRIS lists facilities that treat, store or dispose (TSD) of hazardous waste (0.5 mile) and identifies hazardous waste handlers with corrective action (CORRACTS) activity (1.0 mile). RCRIS also lists small-quantity generators (SQGs) and large-quantity generators (LQGs) of hazardous waste (subject and adjacent properties).
ERNS:	The Emergency Response Notification System (ERNS) records and stores information on reported releases of oil and hazardous substances (subject property only).
UST:	The Underground Storage Tank (UST) database lists USTs registered with the Office of the State Fire Marshal (subject property and adjacent properties).
LUST:	The Leaking Underground Storage Tank (LUST) records contain an inventory of LUST incidents reported to the state (0.5 mile).
SSU:	The State Sites Unit (SSU) database is compiled by the Illinois EPA (IEPA) and includes sites identified for investigation or remediation under the State Response Action Program. The SSU is the state equivalent to the NPL or CERCLIS (1.0 mile).
SRP/VCP:	The Illinois Site Remediation Program (SRP) includes properties that are enrolled in the states Voluntary Clean-Up Program (VCP); (0.5 mile).
IC/EC:	The Institutional Control/Engineering Control (IC/EC) databases are compiled from information provided by the USEPA and IEPA and include properties that are listed on the SRP database or that are identified on the Brownfield Management System (BMS) database and have IC/EC (subject property).
SWL:	The Solid Waste Landfill (SWL) records typically contain an inventory of solid waste disposal facilities or landfills, active or inactive, in a particular state (0.5 mile).
BROWNFIELDS:	The Brownfields database is compiled by the USEPA and identifies, by definition, real properties for which the expansion, redevelopment or reuse may be complicated by the presence or potential presence of a hazardous substance, pollutant or contaminant (0.5 mile).

It should be noted that the subject property and adjacent sites are not listed on the Tribal Lands database, which includes lands administered by American Indian tribes or federally-administered lands within an Indian reservation. As a further note, a Freedom of Information Act (FOIA) request would be required to obtain more information concerning the compliance status of any of the sites identified during the environmental database review. This request may take two to four weeks to obtain. As a matter of standard practice, Pioneer would require client authorization prior to initiation of the process. Any pertinent information subsequently received would then be forwarded to the client and amendments, if warranted, to any recommendations made in this report would be evaluated at that time.

4.2 Federal & State Notifiers/Listings

Environmental Risk Information Service (ERIS) provided regulatory information for the site and surrounding properties in a radius map report. In addition to the subject property listings, properties/listings identified in the *ERIS Database Report* within the ASTM minimum search distances from the subject property include four SRP/VCP listings and three LUST incidents. Specific information regarding the listings can be found in the database report, which is included as Appendix E. Distances of some of the listed sites have been adjusted based upon field observations and the actual borders of the subject property.

An easterly-located propety located at 2101 West Peterson Road is listed as an SRP site, under the facility name “North Shore Gas”. According to the IEPA, this site was voluntarily enrolled into the Illinois SRP on May 10, 1999. Subsequently, the IEPA issued a No Further Remediation (NFR) Letter, signifying formal closure for the SRP listing, on May 9, 2001. As a note, this site is located approximately 450 feet from the subject property.

All of the remaining sites/listings identified within the ASTM minimum search distances are located in excess of 500 feet from the subject property. Based on their distances and the relatively impermeable nature of the regional geologic materials Pioneer does not believe that these listings represent recognized environmental conditions to the subject property at this time.

5.0 FINDINGS AND OPINIONS

Based on the information gathered during this Phase I Environmental Site Assessment, within the scope of this investigation and pursuant to the requirements of ASTM Standard Practice E 1527-05, the following findings and opinions are presented below:

1) *Recognized Environmental Conditions:*

- None

2) *Controlled Recognized Environmental Condition:*

- None

3) *Historical Recognized Environmental Conditions:*

- None

4) *De Minimis Conditions:*

- Available information indicates two 10,000-gallon USTs were removed from the subject property in August 2015 (refer to Section 2.7). Based on the available information and visual observations, Pioneer believes these USTs represent a de minimis condition to the subject property and no further investigation to address this issue is warranted at this time.

- The subject property has been reportedly occupied by an automobile repair shop for approximately 2.5 years. Based on the available information and visual observations, Pioneer believes the past use represents a de minimis condition to the subject property and no further investigation to address this issue is warranted at this time.

- A nearby site was identified on the SRP database (refer to Section 4.2). Based on its distance, the relatively impermeable nature of the regional geologic materials and the available information, however Pioneer believes this sites represents a de minimis condition to the subject property at this time.

5) *Data Gaps:*

- Pioneer was unable to obtain historical development information predating 1920, at which time the subject property was developed with a farmstead. Additionally, title/environmental lien search documentation and a completed Property Owner/Key Site Manager Questionnaire was not provided to Pioneer. However, these gaps were not deemed to be significant.

6) *Business Environmental Risks:*

- Pioneer identified suspect ACMs in the subject building in the form of drywall (and associated tape/ compound) and linoleum. These building materials were considered suspect asbestos-containing based on their physical characteristics and potential age (refer to Section 3.10). A review of original building supply lists, manufacturer's documentation, and/or analytical testing would be necessary to provide a definitive determination of the asbestos content of the suspect materials. However, without verification, suspect ACMs should be treated as potential sources of asbestos and managed accordingly. Further, Pioneer recommends that an appropriate asbestos inspection be conducted prior to renovation and/or demolition activities that will disturb the suspect ACMs and, if confirmed to be ACMs, these materials be handled according to applicable regulations.

- Painted surfaces observed throughout the subject building are considered to contain LBP based on its date of construction (circa early 1950). In general, the painted surfaces were in fair condition at the time of the inspection. According to EPA and HUD real estate notification and disclosure rules, owners of most housing built before 1978 must disclose information regarding LBP and LBP hazards to purchasers and renters of such housing, although sampling is not mandated. In addition, the EPA's Lead-Based Paint Renovation, Repair and Painting Program rule requires that workers performing renovation activities in residential buildings constructed prior to 1978 adhere to a variety of safety measures and employ stringent dust control practices and that contractors possess the necessary certifications and training. Additionally, it should be noted that the Occupational Safety & Health Administration (OSHA) regulates construction work (such as demolition or renovation activities) where an employee may be occupationally exposed to lead and the Illinois EPA regulates the removal of LBP from the exterior portions of structures when such work is performed.

- Fluorescent light ballasts and two pad-mounted transformers observed on the subject property were considered potential sources of PCBs due to their suspected age. In general, these light fixtures and transformer equipment appeared to be in sound condition, and no signs of fluid leakage were noted. Therefore, Pioneer believes these fluorescent light fixtures and transformer do not represent an immediate environmental concern to the subject property. However, if the ballasts and/or transformer equipment are to be removed or are subsequently determined to be leaking, Pioneer recommends that the PCB content be determined for proper disposal and/or handling procedures.

6.0 CONCLUSIONS

Pioneer Environmental Services, LLC has performed this Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 of the 63-acre subject property, located at Harris and Peterson Roads, in Libertyville, Illinois (see Figure 1, Site Diagram). Any exceptions to, or deletions from, this practice are expressed herein. This assessment has revealed no evidence of recognized environmental conditions (RECs) in connection with the subject property.

7.0 CLOSING REMARKS

Pioneer warrants that the findings and conclusions contained herein have been promulgated in accordance with ASTM Standard Practice E 1527-13, *Phase I Environmental Site Assessment Process*, only for the site described in this report. No environmental assessment can eliminate the uncertainty regarding the potential for recognized environmental conditions in connection with a property. The Phase I ESA is designed to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with a property.

Due to the limited nature of the work, there is a possibility that conditions may exist which could not be identified within the scope of the assessment, or which were not apparent at the time of the report preparation. The scope of the Phase I ESA does not include the sampling or analytical testing of substances encountered at the subject site. Consequently, a subsurface investigation would be necessary in order to analytically determine the environmental condition of the subject site.

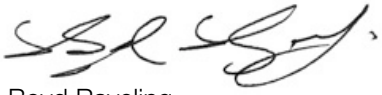
Pioneer is not responsible for independently verifying the information provided. Further, Pioneer cannot be held responsible if the user, current owner or key site manager does not communicate to Pioneer any specialized knowledge or experience that is material to recognized environmental conditions in connection directly or indirectly with the subject property.

This report has been prepared for the use of the Client identified in the report and cannot be relied upon by other persons or entities without the permission of Pioneer. The observations and conclusions contained herein are limited by the scope and intent of the work mutually agreed upon by the Client and Pioneer and the work actually performed. Pioneer believes the findings and conclusions provided in this report are reasonable. However, no warranties are implied or expressed.

Pioneer appreciates the opportunity to be of service to you on this project. We hope this information meets your needs at this time. If you have any questions regarding this initial assessment, please contact us at (773) 722-9200.

8.0 ENVIRONMENTAL PROFESSIONAL DECLARATION

I, Boyd Raveling, declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in Section 312.10 of 40 CFR 312. I, Boyd Raveling, have the specific qualifications based on education, training, and experience to assess a property of the nature, history and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



Boyd Raveling
Vice President

9.0 REFERENCES

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FIGURE 1

Site Diagram

DETAIL OF SUBJECT AREA
SCALE 1" = 100'

North

FORMER LOCATION OF PUMP ISLANDS
& TWO 1,000 GALLON DIESEL USTs

RESIDENCE

WASTE
OIL AST

AUTOMOTIVE
REPAIR SHOP

N. HARRIS ROAD

VACANT GRASSY LAND

LAKE COUNTY
FAIRGROUNDS

N. MIDLOTHIAN ROAD

INDUSTRIAL

RAILROAD

INDUSTRIAL DRIVE

FARMLAND

SUBJECT PROPERTY

FARMLAND

N. HARRIS ROAD

PETERSON ROAD

RESIDENCE/
FARMLAND

COMMERCIAL

COMMERCIAL

PIONEER
ENVIRONMENTAL SERVICES, LLC

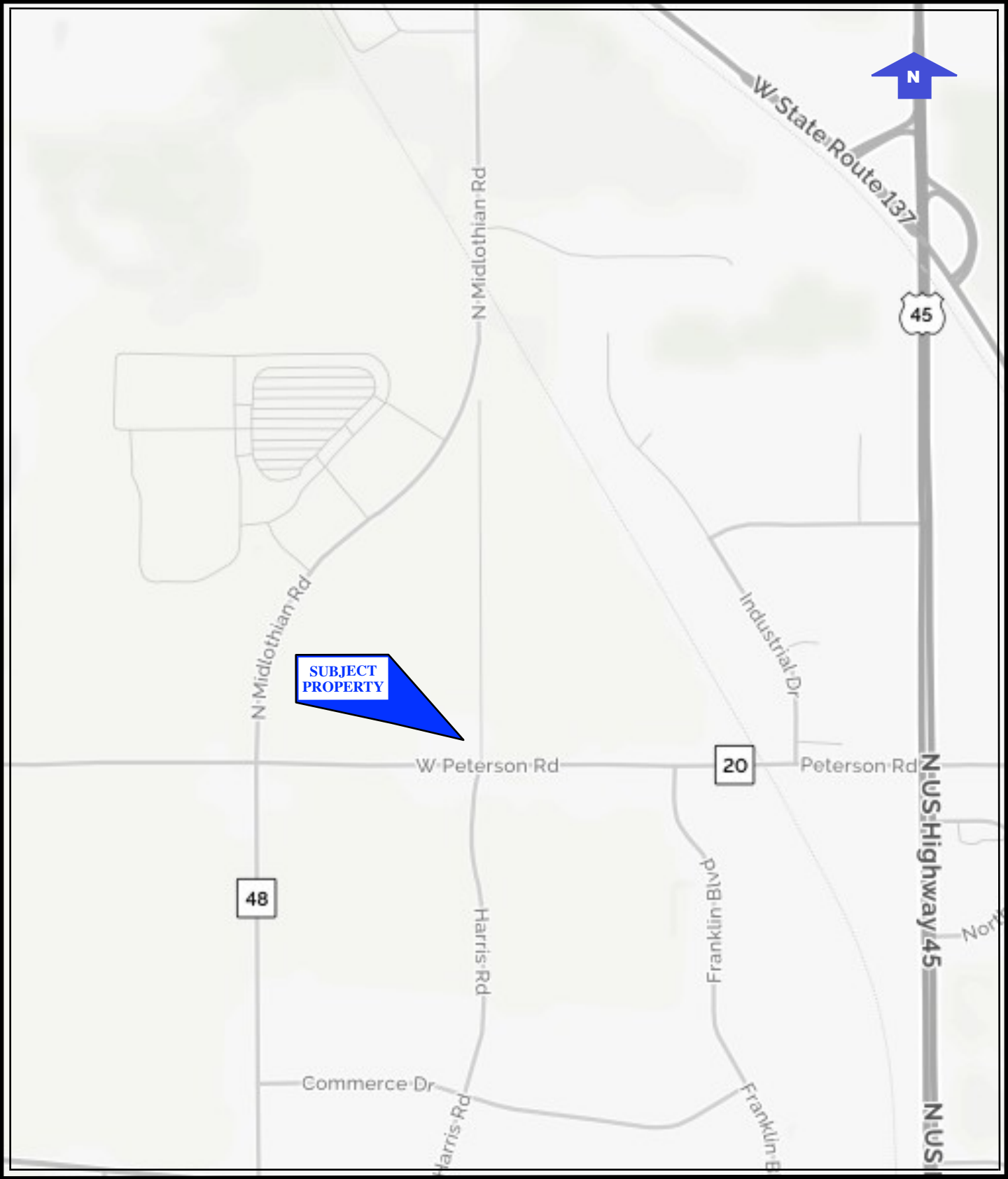
Legend: Approximate Property Line

Scale: 1"=200' (0' — 200')	Date: November 2015
Drawn by: M. Sanabria	Checked by: Peter Decker
Job No.: 15-0501-101	

FIGURE 1
Site Diagram
N. Harris & Peterson Roads
Libertyville, Il

APPENDIX A

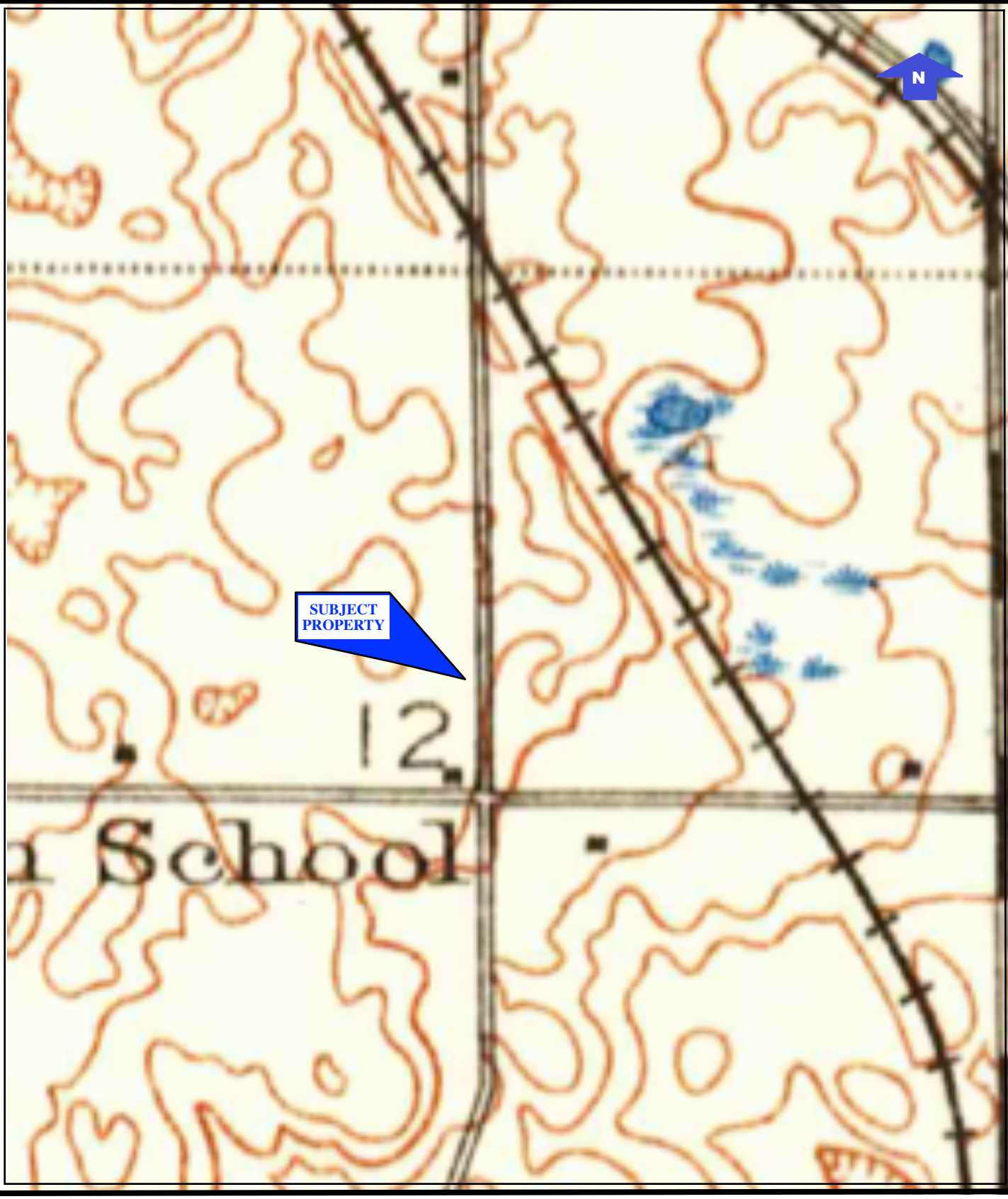
Area Map



PIONEER ENVIRONMENTAL SERVICES, LLC	Harris and Peterson Roads Libertyville, Illinois	**AREA MAP**
	Project Number: 15-0501-101	

APPENDIX B

USGS Maps & Aerial Photographs



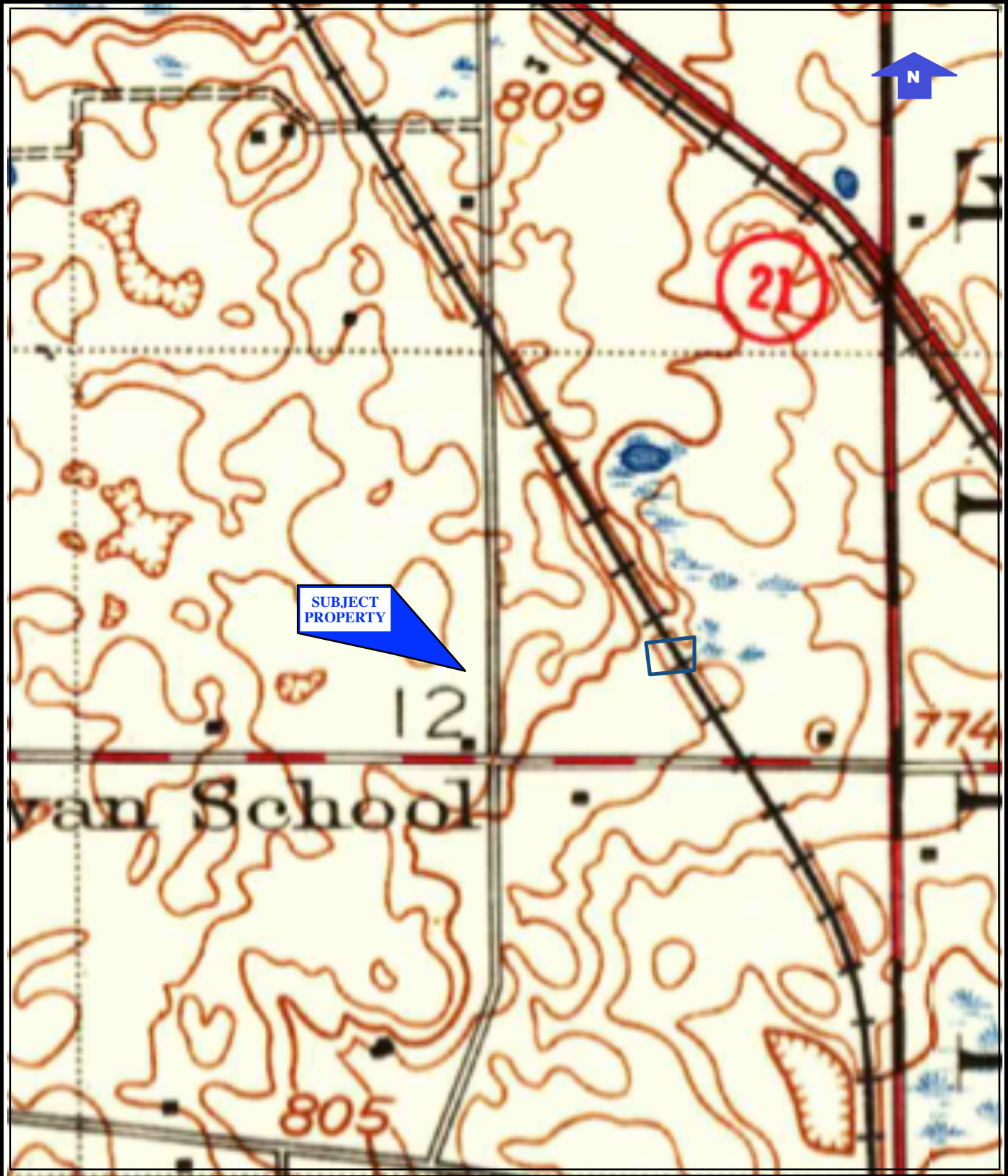
PIONEER ENVIRONMENTAL SERVICES, LLC

Harris and Peterson Roads
Libertyville, Illinois

USGS TOPOGRAPHIC MAP
Grayslake QUADRANGLE
SITE: Section 12, T44N., R10E.

Project Number: 15-0501-101

DATE: 1920



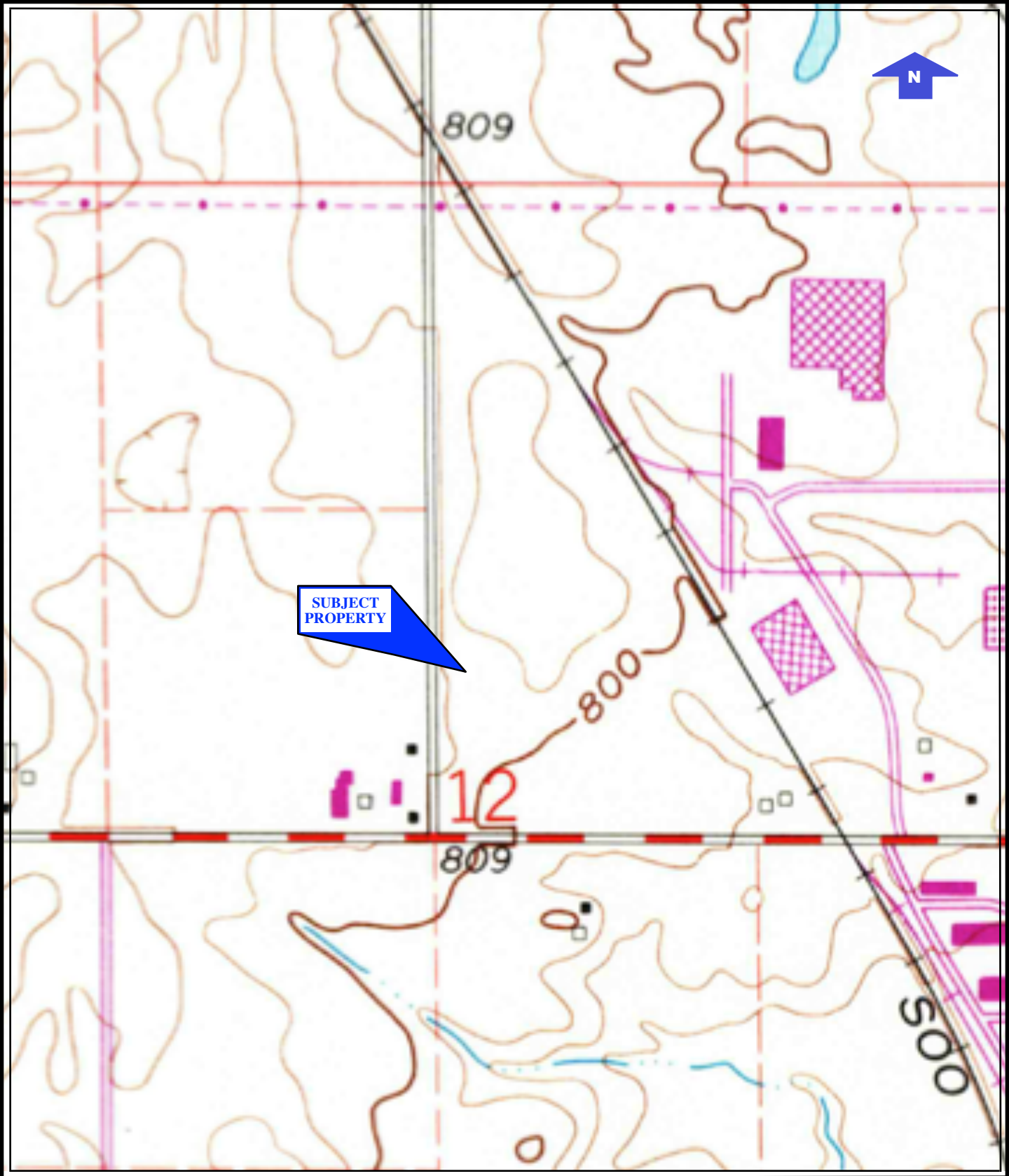
PIONEER ENVIRONMENTAL SERVICES, LLC

Harris and Peterson Roads
Libertyville, Illinois

USGS TOPOGRAPHIC MAP
Grayslake QUADRANGLE
SITE: Section 12, T44N., R10E.

Project Number: 15-0501-101

DATE: 1958



PIONEER ENVIRONMENTAL SERVICES, LLC

Harris and Peterson Roads
Libertyville, Illinois

USGS TOPOGRAPHIC MAP
Grayslake QUADRANGLE
SITE: Section 12, T44N., R10E.

Project Number: 15-0501-101

DATE: 1989

PIONEER ENVIRONMENTAL SERVICES, LLC

Harris and Peterson Roads
Libertyville, Illinois

AERIAL PHOTOGRAPHS

Project Number: 15-0501-101

DATE: 1939

PIONEER ENVIRONMENTAL SERVICES, LLC

Harris and Peterson Roads
Libertyville, Illinois

AERIAL PHOTOGRAPHS

Project Number: 15-0501-101

DATE: 1958

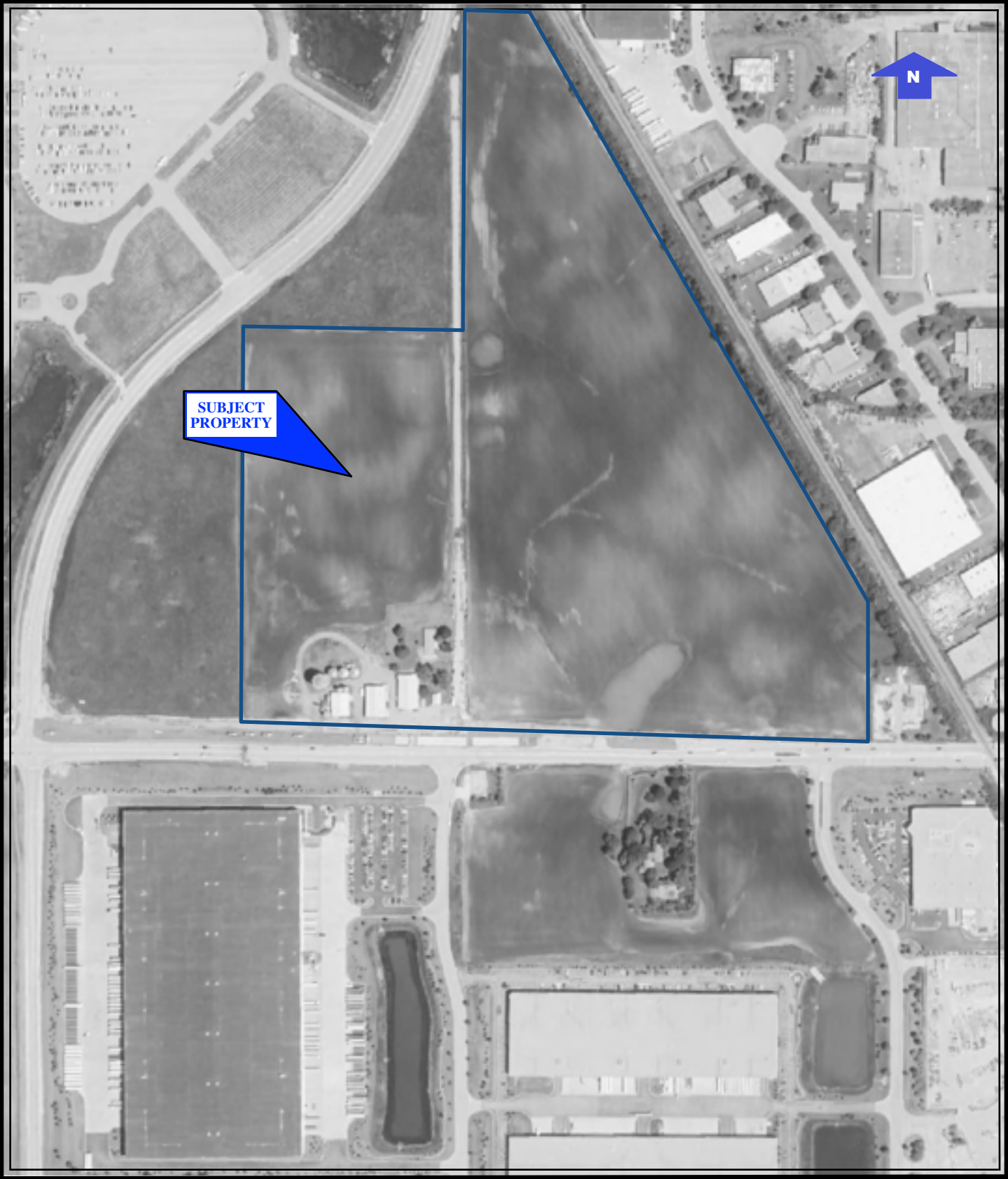
PIONEER ENVIRONMENTAL SERVICES, LLC

Harris and Peterson Roads
Libertyville, Illinois

AERIAL PHOTOGRAPHS

Project Number: 15-0501-101

DATE: 1999



PIONEER ENVIRONMENTAL SERVICES, LLC

Harris and Peterson Roads
Libertyville, Illinois

AERIAL PHOTOGRAPHS

Project Number: 15-0501-101

DATE: 2014

APPENDIX C

User Questionnaire

PIONEER
ENGINEERING & ENVIRONMENTAL SERVICES
700 N Sacramento Blvd. Suite 101
Chicago IL 60612
773.722.9200 Phone - 773.722.9201 Fax
www.pioneerEES.com

USER QUESTIONNAIRE

In order to qualify for one of the *Landowner Liability Protections (LIPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "*Brownfields Amendments*"), the *user* should provide the following information (if available) to the *environmental professional*. Failure to provide this information could result in a determination that "*all appropriate inquiry*" is not complete.

1. Environmental cleanup liens that are filed or recorded against the site (40 CFR 312.25). Are you aware of any environmental cleanup liens against the *property* that are filed or recorded under federal, tribal, state, local, or judicial law?

Yes _____ No _____ Unknown X

If you marked yes, please elaborate _____

_____

_____

2. Activity and land use limitations that are in place on the site or that have been filled or recorded in a registry (40 CFR 312.26). Are you aware of any activity and land use limitations (AULs), such as *engineering controls*, land use restrictions or *institutional controls* that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state, local, or judicial law?

Yes _____ No _____ Unknown X

If you marked yes, please elaborate _____

_____

_____

3. Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28). As the *user* of this ESA do you have any specialized knowledge or experience related to the *property* or nearby properties? For example, are you involved in the same line of business as the current or former *occupants* of the *property* or any *adjoining property* so that you would have specialized knowledge of the chemicals and processes used by this type of business?

Yes _____ No _____ Unknown X

If you marked yes, please elaborate _____

_____

_____

4. Relationship of the purchase price to the fair market value of the *property* if it were not contaminated (40 CFR 312.30). Does the purchase price being paid for this property reasonably reflect the fair market value of the *property*?

Yes X No _____ Unknown _____

If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the *property*?

Yes _____ No _____ Unknown _____

If you marked yes, please elaborate _____

5. Commonly known or *reasonably ascertainable* information about the *property* (40 CFR 312.30). Are you aware of commonly known or *reasonably ascertainable* information about the property that would help the *environmental professional* to identify conditions indicative of releases or threatened releases? For example,

a. Do you know the past uses of the property?

Yes X No _____ Unknown _____

b. Do you know of specific chemicals that are present or once were present at the *property*?

Yes _____ No _____ Unknown X

c. Do you know of spills or other chemical releases that have taken place at the *property*?

Yes _____ No _____ Unknown X

d. Do you know of any environmental cleanups that have taken place at the *property*?

Yes _____ No _____ Unknown X

If you marked yes to any of the above questions, please elaborate _____

2 10000 GAL TANK (DIESEL) REMOVED IN 2015

6. The degree of obviousness of the presence or likely presence of contamination at the *property*, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31). Based on your knowledge and experience related to the *property* are there any *obvious* indicators that point to the presence or likely presence of releases at the *property*?

Yes _____ No _____ Unknown X

If you marked yes, please elaborate _____

_____

_____

This questionnaire was answered by:

Name WILLIAM R. LEWELLEN, JR.

Signature _____

Title PRESIDENT

Firm NORTHBROOK PROPERTIES, INC.

Phone # 847-480-4690

Date 11/18/15

APPENDIX D

Photographic Log

View of the single-family residential structure on the subject property

View of one of the the large sheds on the subject property

View of one of the the large sheds on the subject property

View of several soils on the subject property

View of the previous location of the 10,000-gallon diesel USTs and pump island

View of the waste oil AST

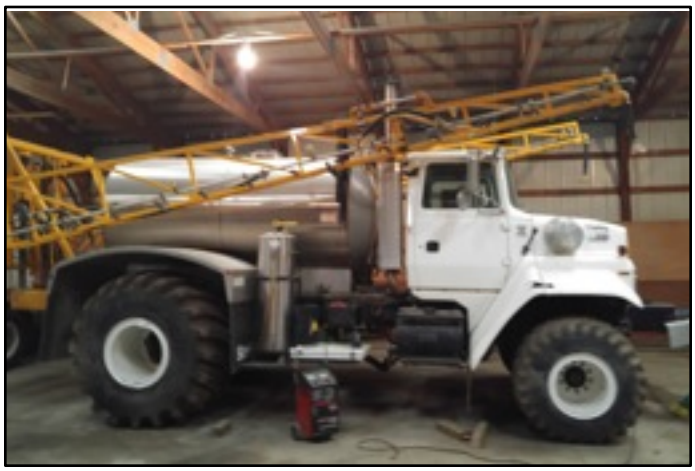
PIONEER ENVIRONMENTAL SERVICES, LLC	Harris and Peterson Roads Libertyville, Illinois	**PHOTOGRAPHIC LOG**
	Project Number: 15-0201-101	DATE: November 2015

View within the automotive repair shop

View of virgin oil 55-gallon drums in the automotive repair shop

View of the waste oil tote in the automotive repair shop

View of the parts washer in the automotive repair shop



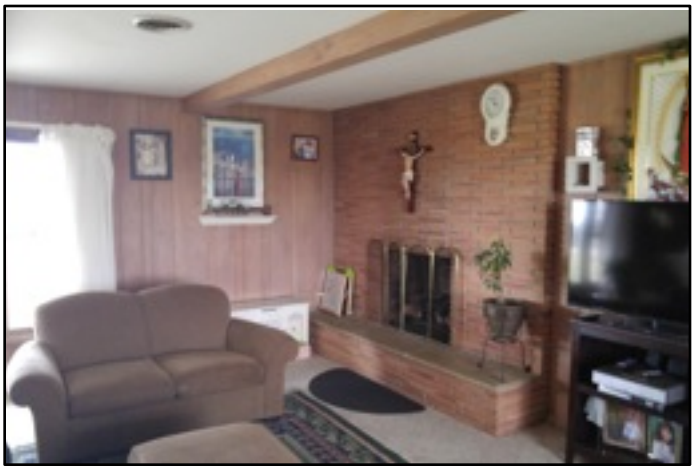
View within one of the lare sheds

View within one of the lare sheds

PIONEER ENVIRONMENTAL SERVICES, LLC	Harris and Peterson Roads Libertyville, Illinois	**PHOTOGRAPHIC LOG**
	Project Number: 15-0201-101	DATE: November 2015

View within one of the large sheds

View within one of the large sheds



View within the single-family residential structure

View within the single-family residential structure

View of the farmland on the subject property

View of the farmland on the subject property

PIONEER ENVIRONMENTAL SERVICES, LLC	Harris and Peterson Roads Libertyville, Illinois	**PHOTOGRAPHIC LOG**
	Project Number: 15-0201-101	DATE: November 2015

APPENDIX E

Environmental Database Report

ENVIRONMENTAL RISK INFORMATION SERVICE

DATABASE REPORT

Project Property: *15-0501-101*
Harris And Peterson Road
Libertyville IL

P.O. Number:

Report Type: *Database Report*

Order #: *20151112063*

Requested by: *Pioneer*

Date: *November 16, 2015*

Ecolog ERIS Ltd.
Environmental Risk Information Service Ltd. (ERIS)
A division of Glacier Media Inc.
P: 1.866.517.5204
E: info@erisinfo.com

www.erisinfo.com

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Notice: IMPORTANT LIMITATIONS and YOUR LIABILITY

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Executive Summary

Property Information:

Project Property: *15-0501-101*
Harris And Peterson Road Libertyville IL

P.O. Number:

Coordinates:

Latitude:	*42.308491*
Longitude:	*-88.013152*
UTM Northing:	*4,684,525.57*
UTM Easting:	*416,499.22*
UTM Zone:	*UTM Zone 16T*

Elevation: *811 FT*

Order Information:

Order No.: *20151112063*
Date Requested: *16/11/2015*
Requested by: *Pioneer*
Report Type: *Database Report*

Ancillary Products:

Executive Summary: Report Summary

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.12mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
Standard Environmental Records								
Federal								
NPL	Y	1.00	0	0	0	0	0	0
PROPOSED NPL	Y	1.00	0	0	0	0	0	0
DELETED NPL	Y	0.50	0	0	0	0	-	0
CERCLIS	Y	0.50	0	0	0	0	-	0
CERCLIS NFRAP	Y	0.50	0	0	0	0	-	0
CERCLIS LIENS	Y	PO	0	-	-	-	-	0
RCRA CORRACTS	Y	1.00	0	0	0	0	0	0
RCRA TSD	Y	0.50	0	0	0	0	-	0
RCRA GEN	Y	0.25	0	10	0	-	-	10
RCRA NON GEN	Y	0.25	0	3	2	-	-	5
FED ENG	Y	0.50	0	0	0	0	-	0
FED INST	Y	0.50	0	0	0	0	-	0
ERNS 1982 TO 1986	Y	PO	0	-	-	-	-	0
ERNS 1987 TO 1989	Y	PO	0	-	-	-	-	0
ERNS	Y	PO	0	-	-	-	-	0
FED BROWNFIELDS	Y	0.50	0	0	0	0	-	0
State								
SSU	Y	1.00	0	0	0	0	0	0
SWF/LF	Y	0.50	0	0	0	0	-	0
SWF/LF SPECIAL	Y	0.50	0	0	0	0	-	0
NIPC	Y	0.50	0	0	0	1	-	1
CCDD	Y	0.50	0	0	0	0	-	0
LUST	Y	0.50	0	2	0	1	-	3
LUST TRUST	Y	0.50	0	0	0	0	-	0
UST	Y	0.25	1	3	0	-	-	4
ENG CONTROLS	Y	0.50	0	0	0	0	-	0
INST CONTROL	Y	0.50	0	1	0	1	-	2
SRP	Y	0.50	0	2	0	2	-	4

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.12mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
BROWNFIELDS	Y	0.50	0	0	0	0	-	0
BROWN MBRGP	Y	0.50	0	0	0	0	-	0
Tribal								
INDIAN LUST	Y	0.50	0	0	0	0	-	0
INDIAN UST	Y	0.25	0	0	0	-	-	0
County	***No County standard environmental record sources available for this State.***							
Additional Environmental Records								
Federal								
FINDS/FRS	Y	PO	0	-	-	-	-	2
TRIS	Y	PO	0	-	-	-	-	0
HMIRS	Y	0.12	0	0	-	-	-	0
NCDL	Y	PO	0	-	-	-	-	0
ODI	Y	0.50	0	0	0	0	-	0
IODI	Y	0.50	0	0	0	0	-	0
TSCA	Y	0.12	0	0	-	-	-	0
HIST TSCA	Y	0.12	0	0	-	-	-	0
State								
SPILLS	Y	0.12	0	2	-	-	-	2
SPILLS2	Y	0.12	0	0	-	-	-	0
Tribal	***No Tribal additional environmental record sources available for this State.***							
County	***No County additional environmental record sources available for this State.***							
Total:			1	23	2	5	0	33

**** PO – Property Only***
**** 'Property and adjoining properties' database search radii are set at 0.25 miles.***

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Dir/Dist mi	Elev diff ft	Page Number
1	UST	Robert Meyer Farm	30568 North Harris Road Libertyville IL 60048 ***Facility ID:*** *2008929* ***Tank ID / Tank Status:*** *1 / Removed, 2 / Removed*	-/0.00	0	18

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Dir/Dist mi	Elev Diff ft	Page Number
2	FINDS/FRS	NORTH SHORE GAS	2101 WEST PETERSON ROAD LIBERTYVILLE IL 60048	S/0.01	-10	20
2	INST CONTROL	North Shore Gas	2101 West Peterson Road Libertyville IL 60048	S/0.01	-10	21
2	RCRA GEN	NORTH SHORE GAS	2101 W PETERSON RD LIBERTYVILLE IL 60048	S/0.01	-10	21
2	SRP	North Shore Gas	2101 West Peterson Road Libertyville IL 60048	S/0.01	-10	23
3	RCRA GEN	ANTENNA COILS MFG INC	1921 INDUSTRIAL DR LIBERTYVILLE IL 60048	NE/0.07	-17	24
4	RCRA GEN	MANWARING BOB CO	1931 INDUSTRIAL DR LIBERTYVILLE IL 60048	NE/0.07	-16	25
5	RCRA NON GEN	BRIA RESEARCH LABS	1920 INDUSTRIAL DR LIBERTYVILLE IL 60048	NE/0.08	-18	26
6	FINDS/FRS	EXECUTIVE CLEANERS	1844 W RTE 20 GRAYSLAKE IL 60030	SE/0.01	-19	27
6	RCRA NON GEN	EXECUTIVE CLEANERS	1844 W RTE 20 GRAYSLAKE IL 60030	SE/0.01	-19	28
7	RCRA GEN	CULLIGAN INTERNATIONAL	1540 HARRIS RD LIBERTYVILLE IL 60048	SSW/0.09	-10	30
8	UST	Vacant Building	1803 Industrial Drive Libertyville IL 60048 ***Facility ID:*** *2045904* ***Tank ID / Tank Status:*** *1 / Removed*	E/0.09	-23	31

Map Key	DB	Company/Site Name	Address	Dir/Dist mi	Elev Diff ft	Page Number
9	RCRA NON GEN	TEMPEL STEEL CO	2200 TEMPEL DR LIBERTYVILLE IL 60048	ENE/0.13	-21	31
10	RCRA GEN	PRECISION METAL CRAFTERS INC	1840 INDUSTRIAL DR SUITE 350 LIBERTYVILLE IL 60048	E/0.09	-25	34
10	RCRA GEN	PHARMASYN INC	1840 INDUSTRIAL DR STE 140 LIBERTYVILLE IL 60048	E/0.09	-25	35
11	RCRA GEN	MEDLINE INDUSTRIES	1501 HARRIS RD LIBERTYVILLE IL 60048	SSW/0.11	-8	37
12	RCRA GEN	WM MEYER & SONS INC	1700 FRANKLIN BLVD LIBERTYVILLE IL 60048	SE/0.07	-27	38
13	LUST	Sequoia Supply	1822 Industrial Dr. Libertyville IL 60048 ***Incident NO / RTK Status:*** 903543 / Not Reviewed	E/0.10	-26	40
13	SPILLS	SEQUOIA SUPPLY	1822 INDUSTRIAL DRIVE LIBERTYVILLE IL ***Incident NO / Clean Up Actions:*** 903543 /	E/0.10	-26	41
14	UST	Sequoia Supply	1820 Industrial Dr Libertyville IL 60048 ***Facility ID:*** 2018253 ***Tank ID / Tank Status:*** 1 / Removed	E/0.10	-25	42
15	RCRA GEN	CONTEMPO DESIGN INC	1800 INDUSTRIAL DR LIBERTYVILLE IL 60048	ESE/0.12	-24	42
16	RCRA GEN	GRAPHIC SHEET FED SVC CORP	1807 INDUSTRIAL DR LIBERTYVILLE IL 60048	ESE/0.11	-25	43
17	LUST	ZF of North America	1810 Industrial Dr. Libertyville IL 60048 ***Incident NO / RTK Status:*** 930412 / Not Reviewed	ESE/0.12	-24	44
17	RCRA NON GEN	ZF OF NORTH AMERICA	1810 INDUSTRIAL DR LIBERTYVILLE IL 60048	ESE/0.12	-24	45
17	SPILLS	Z F OF NORTH AMERICA	1810 INDUSTRIAL DR. LIBERTYVILLE IL ***Incident NO / Clean Up Actions:*** 930412 /	ESE/0.12	-24	46

Map Key	DB	Company/Site Name	Address	Dir/Dist mi	Elev Diff ft	Page Number
17	UST	Zf Of North America	1810 Industrial Dr Libertyville IL 60048 ***Facility ID***: *2026053* ***Tank ID / Tank Status***: 1 / Removed	ESE/0.12	-24	47
18	SRP	Lake County Department of Transportation	19179 West Peterson Road Libertyville IL 60048	ESE/0.09	-27	48
19	RCRA NON GEN	AMERICAN NATIONAL BANK	1940 WHITE BLVD LIBERTYVILLE IL 60045	ENE/0.25	-29	48
20	SRP	Hoffner Family Trust	1972 Enterprise Court Libertyville IL 60048	ENE/0.28	-25	49
21	LUST	Oemmceo Inc.	1800 Temple Dr. Libertyville IL 60048 ***Incident NO / RTK Status***: 903800 / Not Reviewed	ENE/0.27	-30	50
22	NIPC	NORTH SHORE GAS	FREMONT TWP* IL	SSE/0.26	-48	50
23	INST CONTROL	Wisconsin Central, Ltd.	1228 Peterson Road Libertyville IL 60048	ESE/0.32	-40	51
23	SRP	Wisconsin Central, Ltd.	1228 Peterson Road Libertyville IL 60048	ESE/0.32	-40	51

Executive Summary: Summary by Data Source

Standard

Federal

RCRA GEN - RCRA Generator List

A search of the RCRA GEN database, dated Oct 13, 2015 has found that there are 10 RCRA GEN site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance mi	Map Key
Lower Elevation	**Address**	**Direction**	**Distance mi**	**Map Key**
NORTH SHORE GAS	2101 W PETERSON RD LIBERTYVILLE IL 60048	S	0.01	2
ANTENNA COILS MFG INC	1921 INDUSTRIAL DR LIBERTYVILLE IL 60048	NE	0.07	3
MANWARING BOB CO	1931 INDUSTRIAL DR LIBERTYVILLE IL 60048	NE	0.07	4
CULLIGAN INTERNATIONAL	1540 HARRIS RD LIBERTYVILLE IL 60048	SSW	0.09	7
PHARMASYN INC	1840 INDUSTRIAL DR STE 140 LIBERTYVILLE IL 60048	E	0.09	10
PRECISION METAL CRAFTERS INC	1840 INDUSTRIAL DR SUITE 350 LIBERTYVILLE IL 60048	E	0.09	10
MEDLINE INDUSTRIES	1501 HARRIS RD LIBERTYVILLE IL 60048	SSW	0.11	11
WM MEYER & SONS INC	1700 FRANKLIN BLVD LIBERTYVILLE IL 60048	SE	0.07	12

Lower Elevation	Address	Direction	Distance mi	Map Key
CONTEMPO DESIGN INC	1800 INDUSTRIAL DR LIBERTYVILLE IL 60048	ESE	0.12	15
GRAPHIC SHEET FED SVC CORP	1807 INDUSTRIAL DR LIBERTYVILLE IL 60048	ESE	0.11	16

RCRA NON GEN - RCRA Non-Generators

A search of the RCRA NON GEN database, dated Oct 13, 2015 has found that there are 5 RCRA NON GEN site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance mi	Map Key
Lower Elevation	**Address**	**Direction**	**Distance mi**	**Map Key**
BRIA RESEARCH LABS	1920 INDUSTRIAL DR LIBERTYVILLE IL 60048	NE	0.08	5
EXECUTIVE CLEANERS	1844 W RTE 20 GRAYSLAKE IL 60030	SE	0.01	6
TEMPEL STEEL CO	2200 TEMPEL DR LIBERTYVILLE IL 60048	ENE	0.13	9
ZF OF NORTH AMERICA	1810 INDUSTRIAL DR LIBERTYVILLE IL 60048	ESE	0.12	17
AMERICAN NATIONAL BANK	1940 WHITE BLVD LIBERTYVILLE IL 60045	ENE	0.25	19

State

NIPC - Northeastern Illinois Planning Commission Historical Inventory of Solid Waste Disposal Sites in Northeastern Illinois

A search of the NIPC database, dated Dec 1987 has found that there are 1 NIPC site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance mi	Map Key

Lower Elevation	Address	Direction	Distance mi	Map Key
NORTH SHORE GAS	FREMONT TWP* IL	SSE	0.26	22

LUST - Leaking Underground Storage Tanks (LUST)

A search of the LUST database, dated Sep 7, 2015 has found that there are 3 LUST site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance mi	Map Key
Lower Elevation	**Address**	**Direction**	**Distance mi**	**Map Key**
Sequoia Supply	1822 Industrial Dr. Libertyville IL 60048 ***Incident NO / RTK Status***: *903543 / Not Reviewed*	E	0.10	13
ZF of North America	1810 Industrial Dr. Libertyville IL 60048 ***Incident NO / RTK Status***: *930412 / Not Reviewed*	ESE	0.12	17
Oemmceo Inc.	1800 Temple Dr. Libertyville IL 60048 ***Incident NO / RTK Status***: *903800 / Not Reviewed*	ENE	0.27	21

UST - Underground Storage Tank Database (UST)

A search of the UST database, dated Sept 14, 2015 has found that there are 4 UST site(s) within approximately 0.25 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance mi	Map Key
Robert Meyer Farm	30568 North Harris Road Libertyville IL 60048 ***Facility ID***: *2008929* ***Tank ID / Tank Status***: *1 / Removed, 2 / Removed*	-	0.00	1

Lower Elevation	Address	Direction	Distance mi	Map Key
Vacant Building	1803 Industrial Drive Libertyville IL 60048 ***Facility ID***: *2045904* ***Tank ID / Tank Status***: *1 / Removed*	E	0.09	8
Sequoia Supply	1820 Industrial Dr Libertyville IL 60048 ***Facility ID***: *2018253* ***Tank ID / Tank Status***: *1 / Removed*	E	0.10	14

Lower Elevation	Address	Direction	Distance mi	Map Key
Zf Of North America	1810 Industrial Dr Libertyville IL 60048	ESE	0.12	17

***Facility ID**: 2026053*
***Tank ID / Tank Status**: 1 / Removed*

INST CONTROL - Institutional Controls

A search of the INST CONTROL database, dated Jul 15, 2015 has found that there are 2 INST CONTROL site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance mi	Map Key

Lower Elevation	Address	Direction	Distance mi	Map Key
North Shore Gas	2101 West Peterson Road Libertyville IL 60048	S	0.01	2
Wisconsin Central, Ltd.	1228 Peterson Road Libertyville IL 60048	ESE	0.32	23

SRP - Illinois Site Remediation Program Database

A search of the SRP database, dated Jul 15, 2015 has found that there are 4 SRP site(s) within approximately 0.50 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance mi	Map Key

Lower Elevation	Address	Direction	Distance mi	Map Key
North Shore Gas	2101 West Peterson Road Libertyville IL 60048	S	0.01	2
Lake County Department of Transportation	19179 West Peterson Road Libertyville IL 60048	ESE	0.09	18
Hoffner Family Trust	1972 Enterprise Court Libertyville IL 60048	ENE	0.28	20
Wisconsin Central, Ltd.	1228 Peterson Road Libertyville IL 60048	ESE	0.32	23

Non Standard

Federal

FINDS/FRS - Facility Registry Service/Facility Index

A search of the FINDS/FRS database, dated Sep 24, 2015 has found that there are 2 FINDS/FRS site(s) within approximately 0.02 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance mi	Map Key

Lower Elevation	Address	Direction	Distance mi	Map Key
NORTH SHORE GAS	2101 WEST PETERSON ROAD LIBERTYVILLE IL 60048	S	0.01	2
EXECUTIVE CLEANERS	1844 W RTE 20 GRAYSLAKE IL 60030	SE	0.01	6

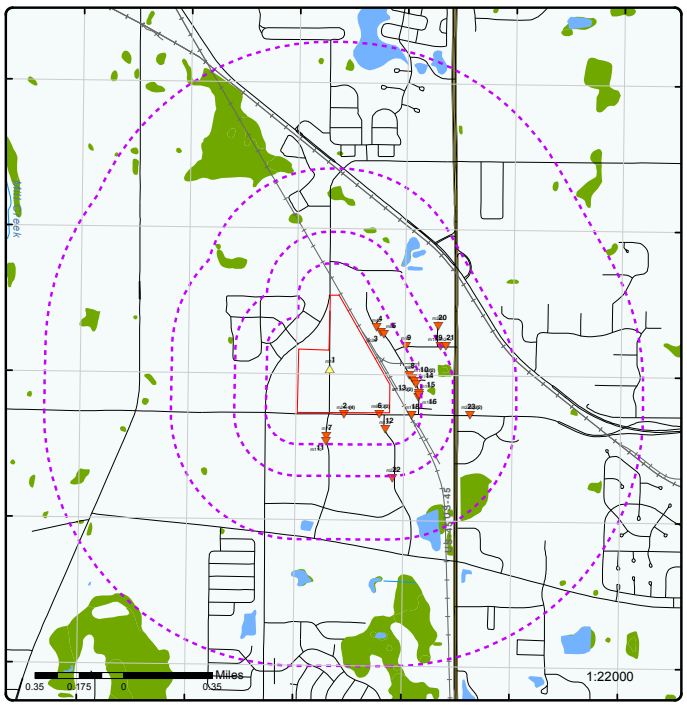
State

SPILLS - Spills and Incidences

A search of the SPILLS database, dated Sep 2, 2015 has found that there are 2 SPILLS site(s) within approximately 0.12 miles of the project property.

Equal/Higher Elevation	Address	Direction	Distance mi	Map Key

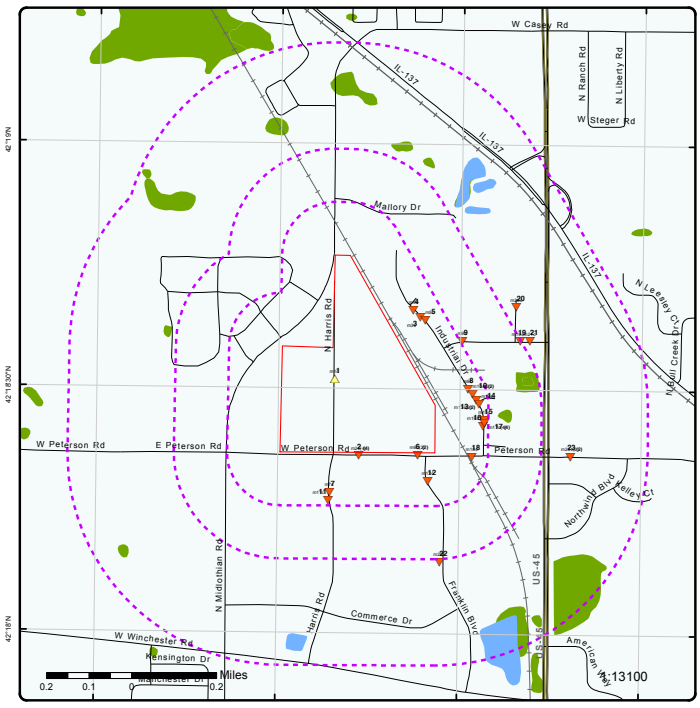
Lower Elevation	Address	Direction	Distance mi	Map Key
SEQUOIA SUPPLY	1822 INDUSTRIAL DRIVE LIBERTYVILLE IL	E	0.10	13
	***Incident NO / Clean Up Actions**: 903543 /*			
Z F OF NORTH AMERICA	1810 INDUSTRIAL DR. LIBERTYVILLE IL	ESE	0.12	17
	***Incident NO / Clean Up Actions**: 930412 /*			



Map : 1 Mile Radius
Order No: 20151112063
Address: Harris And Peterson Road, Libertyville, IL

Project Property	Major Highways	County Boundary	Indian Reserve Land
Buffer Outline	Major Highways Ramps	State Boundary	Historic Fill
Eris Sites with Higher Elevation	Major Roads	500 Year Flood Zone	State Brownfield Sites
Eris Sites with Same Elevation	Major Roads Ramps	100 Year Flood Zone	State Brownfield Areas
Eris Sites with Lower Elevation	Secondary Roads	National Priority List Sites	State Superfund Areas:Dept. of Defense
Eris Sites with Unknown Elevation	Secondary Roads Ramps	National Wetland	State Superfund Areas:NPL
Rails	Local Roads and Ramps	FWS Special Designation Areas	WQARF Areas

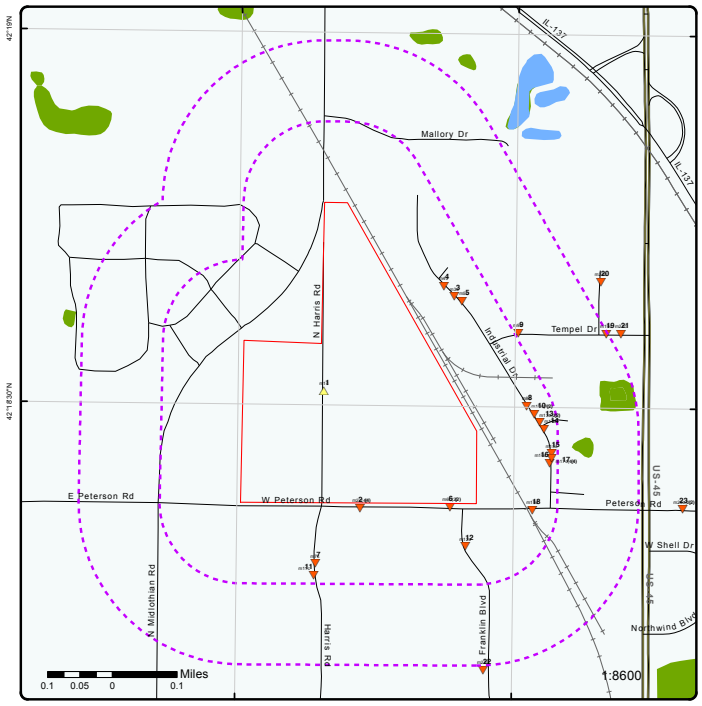
Source: © 2012 ESRI © Ecolog ERIS Ltd



Map : 0.5 Mile Radius
Order No: 20151112063
Address: Harris And Peterson Road, Libertyville, IL

Project Property	Major Highways	County Boundary	Indian Reserve Land
Buffer Outline	Major Highways Ramps	State Boundary	Historic Fill
Eris Sites with Higher Elevation	Major Roads	500 Year Flood Zone	State Brownfield Sites
Eris Sites with Same Elevation	Major Roads Ramps	100 Year Flood Zone	State Brownfield Areas
Eris Sites with Lower Elevation	Secondary Roads	National Priority List Sites	State Superfund Areas:Dept. of Defense
Eris Sites with Unknown Elevation	Secondary Roads Ramps	National Wetland	State Superfund Areas:NPL
Rails	Local Roads and Ramps	FWS Special Designation Areas	WQARF Areas

Source: © 2012 ESRI © Ecolog ERIS Ltd



Map : 0.25 Mile Radius

Order No: 20151112063

Address: Harris And Peterson Road, Libertyville, IL

ERIS ENVIRONMENTAL RISK INFORMATION SERVICE

Project Property	Major Highways	County Boundary	Indian Reserve Land
Buffer Outline	Major Highways Ramps	State Boundary	Historic Fill
Eris Sites with Higher Elevation	Major Roads	500 Year Flood Zone	State Brownfield Sites
Eris Sites with Same Elevation	Major Roads Ramps	100 Year Flood Zone	State Brownfield Areas
Eris Sites with Lower Elevation	Secondary Roads	National Priority List Sites	State Superfund Areas:Dept. of Defense
Eris Sites with Unknown Elevation	Secondary Roads Ramps	National Wetland	State Superfund Areas:NPL
Rails	Local Roads and Ramps	FWS Special Designation Areas	WQARF Areas

Source: © 2012 ESRI

© Ecolog ERIS Ltd

Aerial

Order No: 20151112063

Address: Harris And Peterson Road, Libertyville, IL

Source: ESRI World Imagery, Updated October 2014

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Detail Report

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
1	1 of 1	-/0.00	811.21	Robert Meyer Farm 30568 North Harris Road Libertyville IL 60048	UST

Facility ID: 2008929
Facility Status: Closed
Facility Type: Farm
Motor Fuel Type: Fleet
Motor Fuel Permit Insp Dt: 6/3/2014
Motor Fuel Permit Expir Dt: 12/31/2015
Green Tag Decal: O005986
Green Tag Issue Date: 6/3/2014
Green Tag Expiration Date: 12/31/2015
County: Lake

Owner Information

Owner ID: U0012870
Owner Name: Robert Meyer Farm
Owner Address: 30568 North Harris Road
Owner City: Libertyville
Owner State: IL
Owner Zip: 60048

Tank Information

Tank ID: 1
Tank Status: Removed
Tank Capacity: 10000
Product: Diesel Fuel
Date Installed:
Last Used Date: 8/1/2015
Removed Date: 8/25/2015
Abandoned Date:
Red Tage Issue Date:
OSFM First Notify Date: 5/1/1986
Fee Due: $0.00
Pending Nov: N
IEMA Number(s):

Equipment Information

Equipment Type: Corrosion Prot - Piping
Equipment: Fiberglass Non-Corrosive
Last Passing Date: N/A
Test Expire Date: N/A

Equipment Type: Corrosion Prot - Tank
Equipment: Lining Materials Internal Armor Shield TL 300M
Last Passing Date: 10/7/2009
Test Expire Date: 10/7/2014

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Equipment Type: Leak Detect - Piping
Equipment: European with No Test Req Suction
Last Passing Date: N/A
Test Expire Date: N/A

Equipment Type: Leak Detect - Tank
Equipment: Automatic Tank Gauging Incon TS 750
Last Passing Date: N/A
Test Expire Date: N/A

Equipment Type: Overfill Prev Device
Equipment: Overfill Drop Tube Valve OPW 61SO
Last Passing Date: N/A
Test Expire Date: N/A

Equipment Type: Piping
Equipment: Fiberglass Single Wall Piping Western
Last Passing Date: N/A
Test Expire Date: N/A

Equipment Type: Spill Contain Device
Equipment: Manhole Pre-manufactured EBW 715
Last Passing Date: N/A
Test Expire Date: N/A

Equipment Type: Tank
Equipment: Steel Single Wall Tank
Last Passing Date: N/A
Test Expire Date: N/A

Tank Information

Tank ID: 2
Tank Status: Removed
Tank Capacity: 10000
Product: Diesel Fuel
Date Installed:
Last Used Date: 8/1/2015
Removed Date: 8/25/2015
Abandoned Date:
Red Tage Issue Date:
OSFM First Notify Date: 5/1/1986
Fee Due: $0.00
Pending Nov: N
IEMA Number(s):

Equipment Information

Equipment Type: Corrosion Prot - Piping
Equipment: Fiberglass Non-Corrosive
Last Passing Date: N/A
Test Expire Date: N/A

Equipment Type: Corrosion Prot - Tank
Equipment: Lining Materials Internal Armor Shield TL 300M
Last Passing Date: 10/7/2009
Test Expire Date: 10/7/2014

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Equipment Type: Leak Detect - Piping
Equipment: European with No Test Req Suction
Last Passing Date: N/A
Test Expire Date: N/A

Equipment Type: Leak Detect - Tank
Equipment: Automatic Tank Gauging Incon TS 750
Last Passing Date: N/A
Test Expire Date: N/A

Equipment Type: Overfill Prev Device
Equipment: Overfill Drop Tube Valve OPW 61SO
Last Passing Date: N/A
Test Expire Date: N/A

Equipment Type: Piping
Equipment: Fiberglass Single Wall Piping Western
Last Passing Date: N/A
Test Expire Date: N/A

Equipment Type: Spill Contain Device
Equipment: Manhole Pre-manufactured EBW 715
Last Passing Date: N/A
Test Expire Date: N/A

Equipment Type: Tank
Equipment: Steel Single Wall Tank
Last Passing Date: N/A
Test Expire Date: N/A

2 | 1 of 4 | S/0.01 | 800.69 | NORTH SHORE GAS, 2101 WEST PETERSON ROAD, LIBERTYVILLE IL 60048 | FINDS/FRS

Registry ID: 110002069993
FIPS Code: 17097
Program Acronyms:
HUC Code: 07120004
Site Type Name: STATIONARY
EPA Region Code: 05
Conveyor: EIS
County Name: LAKE
Source:
SIC Codes: 4923
SIC Code Descriptions: NATURAL GAS TRANSMISSION AND DISTRIBUTION
Federal Facility Code:
NAICS Codes: 486210
NAICS Code Descriptions: PIPELINE TRANSPORTATION OF NATURAL GAS.
Federal Agency Name:
US/Mexico Border Ind:
Congressional Dist No: 08
Census Block Code: 170978641061000
Create Date: 01-MAR-2000 00:00:00
Update Date: 14-APR-2015 17:26:05
Location Description:
Supplemental Location: PETERSON RD. & US ROUTE 45
Tribal Land Code:

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Tribal Land Name:
Latitude: 42.305523
Longitude: -88.006677
Coord Collection Method: INTERPOLATION-PHOTO
Accuracy Value: 20
Datum: NAD83
Reference Point: FACILITY CENTROID
Interest Types: AIR EMISSIONS CLASSIFICATION UNKNOWN, AIR MINOR, HAZARDOUS WASTE BIENNIAL REPORTER, SQG
Facility Detail Rprt URL: http://iaspub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110002069993

2 | 2 of 4 | S/0.01 | 800.69 | North Shore Gas, 2101 West Peterson Road, Libertyville IL 60048 | INST CONTROL

IEPA ID: 0970905137
US EPA ID: ILR000067751
County: Lake
Latitude: 42.304564
Longitude: -88.005556

--- Details ---
IEPA ID: 0970905137
NFR Site Name: North Shore Gas
NFR Letter Date: 5/9/2001
NFR Recorded Date: 6/26/2001
Land Use: Industrial/Commercial
Comprehensive Focused: Focused
GW Use Restriction: No
Hwy Authority Agreement: No
Ordinance: No
Industrial Commercial: Yes
Worker Caution: No
Slab On Grade: No
Building Control Technology: No
Building Slab: No
Asphalt Used: No
Concrete Used: No
Clean Soil 3ft: No
Clean Soil 10ft: No
Alternate Barrier: No
Applicant First Name: Charles
Applicant Last Name: Thompson
Applicant Company: North Shore Gas
Applicant Address: 130 East Randolph Street
City: Chicago, IL
Zip Code: 60601
Acres: 14.0663

2 | 3 of 4 | S/0.01 | 800.69 | NORTH SHORE GAS, 2101 W PETERSON RD, LIBERTYVILLE IL 60048 | RCRA GEN

EPA Handler ID: ILR000067751
Current Site Name: NORTH SHORE GAS
Generator Status Universe: Small Quantity Generator
Land Type: Private
Activity Location: IL

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

TSD Activity: N
Mixed Waste Generator: N
Importer Activity: N
Transporter Activity: N
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Inject Activity: N
Rece Waste From Off Site: N
Used Oil Transporter:
Used Oil Transfer Facility:
Used Oil Processor:
Used Oil Refiner:
Used Oil Burner:
Used Oil Market Burner:
Used Oil Spec Marketer:
Mailing Address: 130 E RANDOLPH DR, , CHICAGO, IL, 60601, US
Contact Name: STEVEN MATUSZAK
Contact Address: US
Contact Email:
Location Street 2:

Owner/Operator Information
Owner/Operator Indicator: CO
Owner/Operator Name: NORTH SHORE GAS CO
Owner/Operator Address: US
Owner/Operator Phone:
Owner/Operator Type: P
Date Became Current: 19000101
Date Ended Current:

Owner/Operator Indicator: CP
Owner/Operator Name: NORTH SHORE GAS CO
Owner/Operator Address: US
Owner/Operator Phone:
Owner/Operator Type: P
Date Became Current: 19000101
Date Ended Current:

Owner/Operator Indicator: CO
Owner/Operator Name: NORTH SHORE GAS CO
Owner/Operator Address: 3001 GRAND AVE WAUKEGAN IL 60085
Owner/Operator Phone: 3122404560
Owner/Operator Type: P
Date Became Current:
Date Ended Current:

Owner/Operator Indicator: CO
Owner/Operator Name: NORTH SHORE GAS
Owner/Operator Address: 3001 GRAND AVE WAUKEGAN IL US 60085
Owner/Operator Phone:
Owner/Operator Type: P
Date Became Current: 19000101
Date Ended Current:

Owner/Operator Indicator: CP
Owner/Operator Name: NORTH SHORE GAS
Owner/Operator Address: 130 E RANDOLF RD CHICAGO IL US 606016207

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Owner/Operator Phone:
Owner/Operator Type: P
Date Became Current: 19000101
Date Ended Current:

NAICS Information

Naics Code: 2212
Naics Description: NATURAL GAS DISTRIBUTION

Naics Code: 22121
Naics Description: NATURAL GAS DISTRIBUTION

Handler Information

Date Received: 20060401
Facility Name: NORTH SHORE GAS CO
Date Received: 19990927
Facility Name: NORTH SHORE GAS CO
Classification: Large Quantity Generator

Date Received: 20000301
Facility Name: NORTH SHORE GAS
Classification: Large Quantity Generator

Date Received: 20080301
Facility Name: NORTH SHORE GAS
Classification: Small Quantity Generator

Hazardous Waste Information

Waste Code: D002
Waste: CORROSIVE WASTE

Violation/Evaluation Information

2 | 4 of 4 | S/0.01 | 800.69 | North Shore Gas, 2101 West Peterson Road, Libertyville IL 60048 | SRP

IEPA ID: 0970905137
USEPA ID: ILR000067751
County: Lake
Longitude: -88.005556
Latitude: 42.304564

--- Details ---
Active Site: No
NFR Site Name: North Shore Gas
NFR Recorded Date: 6/26/2001
NFR Letter Date: 5/9/2001
Land Use: Industrial/Commercial
Comprehensive Focused: Focused
Acres: 14.0663
Ground Water Use Restriction: No
Highway Authority Agreement: No
Ordinance: No
Industrial Commercial: Yes

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Worker Caution: No
Slab On Grade: No
BCT: No
Building Slab: No
Asphalt Used: No
Concrete Used: No
Clean Soil 3ft: No
Clean Soil 10: No
Alternate Barrier: No
4Y Letter Date:
Effective: TRUE
Company: North Shore Gas Company
Applicant First Name: Steven
Applicant Last Name: Matuszak
Address: 130 East Randolph Drive
City: Chicago, IL
Zip Code: 60601
Phone: (312) 240-4729
Received SA Date: 5/10/1999
Consultant Company: Roy F. Weston, Inc.
Consultant Contact: John P. Woodyard, P.E.
Consultant Address: 3 Hawthorn Parkway
Consultant City: Vernon Hills, IL
Consultant Zip Code: 60061-1450
Consultant Phone: (847) 918-4000
Project Manager: Russell Irwin

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
3	1 of 1	NE/0.07	793.79	ANTENNA COILS MFG INC 1921 INDUSTRIAL DR LIBERTYVILLE IL 60048	RCRA GEN

EPA Handler ID: ILD984921601
Current Site Name: ANTENNA COILS MFG INC
Generator Status Universe: Small Quantity Generator
Land Type: Private
Activity Location: IL
TSD Activity: N
Mixed Waste Generator: N
Importer Activity: N
Transporter Activity: N
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Inject Activity: N
Rece Waste From Off Site: N
Used Oil Transporter:
Used Oil Transfer Facility:
Used Oil Processor:
Used Oil Refiner:
Used Oil Burner:
Used Oil Market Burner:
Used Oil Spec Marketer:
Mailing Address: 1921 INDUSTRIAL DR, , LIBERTYVILLE, IL, 60048,
Contact Name: DAVID VAN HOOK
Contact Address: 1921 INDUSTRIAL DR, , LIBERTYVILLE, IL, 60048, US
Contact Email:
Location Street 2:

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Owner/Operator Information
Owner/Operator Indicator: CO
Owner/Operator Name: LETSCHER PHILLIP AND EMMA
Owner/Operator Address: 22270 MAPLE CT KILDEER IL 60047
Owner/Operator Phone: 5474388667
Owner/Operator Type: P
Date Became Current:
Date Ended Current:

NAICS Information

Handler Information

Date Received: 19970630
Facility Name: ANTENNA COILS MFG INC
Classification: Small Quantity Generator

Hazardous Waste Information

Waste Code: D027
Waste: 1,4-DICHLOROBENZENE

Waste Code: D006
Waste: CADMIUM

Waste Code: D039
Waste: TETRACHLOROETHYLENE

Waste Code: D040
Waste: TRICHLORETHYLENE

Waste Code: D008
Waste: LEAD

Waste Code: D001
Waste: IGNITABLE WASTE

Waste Code: D018
Waste: BENZENE

Violation/Evaluation Information

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
4	1 of 1	NE/0.07	794.90	MANWARING BOB CO 1931 INDUSTRIAL DR LIBERTYVILLE IL 60048	RCRA GEN

EPA Handler ID: ILR000006858
Current Site Name: MANWARING BOB CO
Generator Status Universe: Small Quantity Generator
Land Type: Private
Activity Location: IL
TSD Activity: N
Mixed Waste Generator: N
Importer Activity: N
Transporter Activity: N
Transfer Facility: N
Recycler Activity: N

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Onsite Burner Exemption: N
Furnace Exemption: N
Underground Inject Activity: N
Rece Waste From Off Site: N
Used Oil Transporter:
Used Oil Transfer Facility:
Used Oil Processor:
Used Oil Refiner:
Used Oil Burner:
Used Oil Market Burner:
Used Oil Spec Marketer:
Mailing Address: 1931 INDUSTRIAL DR, , LIBERTYVILLE, IL, 60048,
Contact Name: ROGER STURT
Contact Address: 1931 INDUSTRIAL DR, , LIBERTYVILLE, IL, 60048, US
Contact Email:
Location Street 2:

Owner/Operator Information
Owner/Operator Indicator: CO
Owner/Operator Name: MANWARING BOB CO
Owner/Operator Address: 1931 INDUSTRIAL DR LIBERTYVILLE IL 60048
Owner/Operator Phone: 7083675150
Owner/Operator Type: P
Date Became Current:
Date Ended Current:

NAICS Information

Handler Information

Date Received: 19950703
Facility Name: MANWARING BOB CO
Classification: Small Quantity Generator

Hazardous Waste Information

Waste Code: D001
Waste: IGNITABLE WASTE

Violation/Evaluation Information

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
5	1 of 1	NE/0.08	793.13	BRIA RESEARCH LABS 1920 INDUSTRIAL DR LIBERTYVILLE IL 60048	RCRA NON GEN

EPA Handler ID: ILR000147454
Current Site Name: BRIA RESEARCH LABS
Generator Status Universe: No Report
Land Type: Private
Activity Location: IL
TSD Activity: N
Mixed Waste Generator: N
Importer Activity: N
Transporter Activity: N
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Furnace Exemption: N
Underground Inject Activity: N
Rece Waste From Off Site: N
Used Oil Transporter:
Used Oil Transfer Facility:
Used Oil Processor:
Used Oil Refiner:
Used Oil Burner:
Used Oil Market Burner:
Used Oil Spec Marketer:
Mailing Address: 1920 INDUSTRIAL DR, , LIBERTYVILLE, IL, 60048, US
Contact Name: ARUN NANDAGIRI
Contact Address: US
Contact Email:
Location Street 2:

Owner/Operator Information
Owner/Operator Indicator: CO
Owner/Operator Name: ARUN NANDAGIRI
Owner/Operator Address:
Owner/Operator Phone:
Owner/Operator Type: P
Date Became Current: 20070620
Date Ended Current:

Owner/Operator Indicator: CP
Owner/Operator Name: ARUN NANDAGIRI
Owner/Operator Address:
Owner/Operator Phone:
Owner/Operator Type: P
Date Became Current: 20070620
Date Ended Current:

NAICS Information

Naics Code: 54138
Naics Description: TESTING LABORATORIES

Handler Information

Date Received: 20070620
Facility Name: BRIA RESEARCH LABS
Hazardous Waste Information

Waste Code: D001
Waste: IGNITABLE WASTE

Violation/Evaluation Information

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
6	1 of 2	SE/0.01	791.91	EXECUTIVE CLEANERS 1844 W RTE 20 GRAYSLAKE IL 60030	FINDS/FRS

Registry ID: 110006165425
FIPS Code: 17097
Program Acronyms:
HUC Code:

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Site Type Name: STATIONARY
EPA Region Code: 05
Conveyor:
County Name: LAKE
Source:
SIC Codes:
SIC Code Descriptions:
Federal Facility Code:
NAICS Codes: 339999
NAICS Code Descriptions: ALL OTHER MISCELLANEOUS MANUFACTURING.
Federal Agency Name:
US/Mexico Border Ind:
Congressional Dist No:
Census Block Code:
Create Date: 01-MAR-2000 00:00:00
Update Date: 26-JAN-2012 13:12:33
Location Description:
Supplemental Location:
Tribal Land Code:
Tribal Land Name:
Latitude:
Longitude:
Coord Collection Method:
Accuracy Value:
Datum: NAD83
Reference Point:
Interest Types: HAZARDOUS WASTE BIENNIAL REPORTER, STATE MASTER, UNSPECIFIED UNIVERSE
Facility Detail Rprt URL: http://iaspub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110006165425

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
6	2 of 2	SE/0.01	791.91	EXECUTIVE CLEANERS 1844 W RTE 20 GRAYSLAKE IL 60030	RCRA NON GEN

EPA Handler ID: IL0000875617
Current Site Name: EXECUTIVE CLEANERS
Generator Status Universe: No Report
Land Type: Private
Activity Location: IL
TSD Activity: N
Mixed Waste Generator: N
Importer Activity: N
Transporter Activity: N
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Inject Activity: N
Rece Waste From Off Site: N
Used Oil Transporter:
Used Oil Transfer Facility:
Used Oil Processor:
Used Oil Refiner:
Used Oil Burner:
Used Oil Market Burner:
Used Oil Spec Marketer:
Mailing Address: 1844 W RTE 20, , GRAYSLAKE, IL, 60030, US
Contact Name: ENV COORDINATOR
Contact Address: US

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Contact Email:
Location Street 2:

Owner/Operator Information
Owner/Operator Indicator: CO
Owner/Operator Name: EXECUTIVE CLEANERS
Owner/Operator Address: US
Owner/Operator Phone:
Owner/Operator Type: P
Date Became Current: 19000101
Date Ended Current:

Owner/Operator Indicator: CP
Owner/Operator Name: EXECUTIVE CLEANERS
Owner/Operator Address: US
Owner/Operator Phone:
Owner/Operator Type: P
Date Became Current: 19000101
Date Ended Current:

Owner/Operator Indicator: CO
Owner/Operator Name: KWON DONG
Owner/Operator Address: 1844 W RTE 20 GRAYSLAKE IL 60030
Owner/Operator Phone: 7082232377
Owner/Operator Type: P
Date Became Current:
Date Ended Current:

NAICS Information

Naics Code: 339999
Naics Description: ALL OTHER MISCELLANEOUS MANUFACTURING

Handler Information

Date Received: 20060401
Facility Name: EXECUTIVE CLEANERS
Date Received: 19940823
Facility Name: EXECUTIVE CLEANERS
Classification: Large Quantity Generator

Hazardous Waste Information

Waste Code: D002
Waste: CORROSIVE WASTE

Waste Code: F002
Waste: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation/Evaluation Information

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
7	1 of 1	SSW/0.09	800.94	CULLIGAN INTERNATIONAL 1540 HARRIS RD LIBERTYVILLE IL 60048	RCRA GEN

EPA Handler ID: ILR000176289
Current Site Name: CULLIGAN INTERNATIONAL
Generator Status Universe: Conditionally Exempt Small Quantity Generator
Land Type: Private
Activity Location: IL
TSD Activity: N
Mixed Waste Generator: N
Importer Activity: N
Transporter Activity: N
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Inject Activity: N
Rece Waste From Off Site: N
Used Oil Transporter:
Used Oil Transfer Facility:
Used Oil Processor:
Used Oil Refiner:
Used Oil Burner:
Used Oil Market Burner:
Used Oil Spec Marketer:
Mailing Address: 1540 HARRIS RD, , LIBERTYVILLE, IL, 60048, US
Contact Name: ROBERT E GARDNER
Contact Address: 1540 HARRIS RD, , LIBERTYVILLE, IL, 60048, US
Contact Email: EARL.GARDNER@CULLIGAN.COM
Location Street 2:

Owner/Operator Information
Owner/Operator Indicator: CO
Owner/Operator Name: THE SILVERMAN GROUP
Owner/Operator Address: 788 MORRIS TURNPIKE SHORT HILLS NJ US 07078
Owner/Operator Phone: 9737650100
Owner/Operator Type: P
Date Became Current: 20130127
Date Ended Current:

Owner/Operator Indicator: CP
Owner/Operator Name: CULLIGAN INTERNATIONAL
Owner/Operator Address: US
Owner/Operator Phone:
Owner/Operator Type: P
Date Became Current: 20130127
Date Ended Current:

NAICS Information

Naics Code: 312112
Naics Description: BOTTLED WATER MANUFACTURING

Handler Information

Date Received: 20130321

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Facility Name: CULLIGAN INTERNATIONAL
Classification: Conditionally Exempt Small Quantity

Hazardous Waste Information

Waste Code: D001
Waste: IGNITABLE WASTE

Violation/Evaluation Information

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
8	1 of 1	E/0.09	787.79	Vacant Building 1803 Industrial Drive Libertyville IL 60048	UST

Facility ID: 2045904
Facility Status: Closed
Facility Type: Commercial / Retail
Motor Fuel Type:
Motor Fuel Permit Insp Dt:
Motor Fuel Permit Expir Dt:
Green Tag Decal:
Green Tag Issue Date:
Green Tag Expiration Date:
County: Lake

Owner Information

Owner ID: U0037818
Owner Name: BF Asset Recovery Corporation
Owner Address: 15 W. 060 North Frontage Rd.
Owner City: Burr Ridge
Owner State: IL
Owner Zip: 60527

Tank Information

Tank ID: 1
Tank Status: Removed
Tank Capacity: 2000
Product: Gasoline
Date Installed:
Last Used Date:
Removed Date: 7/30/2015
Abandoned Date:
Red Tage Issue Date:
OSFM First Notify Date: 6/12/2015
Fee Due: $0.00
Pending Nov: N
IEMA Number(s):

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
9	1 of 1	ENE/0.13	789.93	TEMPEL STEEL CO 2200 TEMPEL DR LIBERTYVILLE IL 60048	RCRA NON GEN

EPA Handler ID: ILD984787663

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Current Site Name: TEMPEL STEEL CO
Generator Status Universe: No Report
Land Type: Private
Activity Location: IL
TSD Activity: N
Mixed Waste Generator: N
Importer Activity: N
Transporter Activity: N
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Inject Activity: N
Rece Waste From Off Site: N
Used Oil Transporter:
Used Oil Transfer Facility:
Used Oil Processor:
Used Oil Refiner:
Used Oil Burner:
Used Oil Market Burner:
Used Oil Spec Marketer:
Mailing Address: 2200 TEMPEL DR, , LIBERTYVILLE, IL, 60048, US
Contact Name: FRANK GRUBACH
Contact Address: US
Contact Email:
Location Street 2:

Owner/Operator Information
Owner/Operator Indicator: CO
Owner/Operator Name: TEMPEL STEEL CO
Owner/Operator Address:
Owner/Operator Phone:
Owner/Operator Type: P
Date Became Current:
Date Ended Current:

Owner/Operator Indicator: CO
Owner/Operator Name: TEMPEL STEEL COMPANY
Owner/Operator Address: 2200 TEMPEL DRIVE LIBERTYVILLE IL US 60048
Owner/Operator Phone:
Owner/Operator Type: P
Date Became Current: 19900101
Date Ended Current:

Owner/Operator Indicator: CP
Owner/Operator Name: TEMPEL STEEL COMPANY
Owner/Operator Address: 2200 TEMPEL DRIVE LIBERTYVILLE IL US 60048
Owner/Operator Phone:
Owner/Operator Type: P
Date Became Current: 19900101
Date Ended Current:

Owner/Operator Indicator: CO
Owner/Operator Name: TEMPEL STEEL CO
Owner/Operator Address: 2200 TEMPEL DR LIBERTYVILLE IL US 60048
Owner/Operator Phone:
Owner/Operator Type: P
Date Became Current: 19900101
Date Ended Current:

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Owner/Operator Indicator: CP
Owner/Operator Name: TEMPEL STEEL CO
Owner/Operator Address: 2200 TEMPEL DR LIBERTYVILLE IL US 60048
Owner/Operator Phone:
Owner/Operator Type: P
Date Became Current: 19900101
Date Ended Current:

NAICS Information

Naics Code: 332116
Naics Description: METAL STAMPING

Handler Information

Date Received: 19900618
Facility Name: TEMPEL STEEL CO
Classification: Small Quantity Generator

Date Received: 19960301
Facility Name: TEMPEL STEEL COMPANY
Classification: Large Quantity Generator

Date Received: 19980301
Facility Name: TEMPEL STEEL CO
Classification: Large Quantity Generator

Date Received: 20000301
Facility Name: TEMPEL STEEL CO
Classification: Large Quantity Generator

Date Received: 20020301
Facility Name: TEMPEL STEEL CO
Classification: Large Quantity Generator

Date Received: 20040301
Facility Name: TEMPEL STEEL CO
Hazardous Waste Information

Waste Code: U226
Waste: ETHANE, 1,1,1-TRICHLORO- (OR) METHYL CHLOROFORM

Waste Code: F001
Waste: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLORETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste Code: D001
Waste: IGNITABLE WASTE

Violation/Evaluation Information

Evaluation Start Date: 20000922
Evaluation Agency: S

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Evaluation Type Description: NON-FINANCIAL RECORD REVIEW
Violation Short Description: Generators - Records/Reporting
Violation Determined Date: 20000922
Actual Return to Compliance Date: 20001024
Violation Responsible Agency: S
Enforcement Action Date: 20001005
Enforcement Agency: S
Disposition Status Date:
Disposition Status:
Enforcement Type Description: VIOLATION NOTICE (VN)
Proposed Penalty Amount:
Paid Amount:
Final Amount:

Evaluation Start Date: 20020213
Evaluation Agency: S
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description:
Violation Determined Date:
Actual Return to Compliance Date:
Violation Responsible Agency:
Enforcement Action Date:
Enforcement Agency:
Disposition Status Date:
Disposition Status:
Enforcement Type Description:
Proposed Penalty Amount:
Paid Amount:
Final Amount:

10	1 of 2	E/0.09	786.33	**PRECISION METAL CRAFTERS INC** **1840 INDUSTRIAL DR SUITE 350** **LIBERTYVILLE IL 60048**	RCRA GEN

EPA Handler ID: ILR000103572
Current Site Name: PRECISION METAL CRAFTERS INC
Generator Status Universe: Small Quantity Generator
Land Type: Private
Activity Location: IL
TSD Activity: N
Mixed Waste Generator: N
Importer Activity: N
Transporter Activity: N
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Inject Activity: N
Rece Waste From Off Site: N
Used Oil Transporter:
Used Oil Transfer Facility:
Used Oil Processor:
Used Oil Refiner:
Used Oil Burner:
Used Oil Market Burner:
Used Oil Spec Marketer:
Mailing Address: 1840 INDUSTRIAL DR, SUITE 350, LIBERTYVILLE, IL, 60048,
Contact Name: JOE BARON

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Contact Address: 1840 INDUSTRIAL DR, SUITE 350, LIBERTYVILLE, IL, 60048, US
Contact Email:
Location Street 2: SUITE 350

Owner/Operator Information
Owner/Operator Indicator: CO
Owner/Operator Name: WASEWER EQUITIES
Owner/Operator Address: 1840 INDUSTRIAL DR LIBERTYVILLE IL 60048
Owner/Operator Phone: 8478161840
Owner/Operator Type: P
Date Became Current:
Date Ended Current:

NAICS Information

Handler Information

Date Received: 20010316
Facility Name: PRECISION METAL CRAFTERS INC
Classification: Small Quantity Generator

Hazardous Waste Information

Violation/Evaluation Information

10	2 of 2	E/0.09	786.33	**PHARMASYN INC** **1840 INDUSTRIAL DR STE 140** **LIBERTYVILLE IL 60048**	RCRA GEN

EPA Handler ID: ILR000010223
Current Site Name: PHARMASYN INC
Generator Status Universe: Small Quantity Generator
Land Type: Private
Activity Location: IL
TSD Activity: N
Mixed Waste Generator: N
Importer Activity: N
Transporter Activity: N
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Inject Activity: N
Rece Waste From Off Site: N
Used Oil Transporter:
Used Oil Transfer Facility:
Used Oil Processor:
Used Oil Refiner:
Used Oil Burner:
Used Oil Market Burner:
Used Oil Spec Marketer:
Mailing Address: 1840 INDUSTRIAL DR STE 140, , LIBERTYVILLE, IL, 60048, US
Contact Name: GLENN NORLEY
Contact Address: 1840 INDUSTRIAL DR STE 140, , LIBERTYVILLE, IL, 60048, US
Contact Email:
Location Street 2:

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Owner/Operator Information
Owner/Operator Indicator: CO
Owner/Operator Name: NORLEY GLENN PIERPORT JOHN
Owner/Operator Address: 1840 INDUSTRIAL DR LIBERTYVILLE IL 60048
Owner/Operator Phone: 7089189018
Owner/Operator Type: P
Date Became Current:
Date Ended Current:

Owner/Operator Indicator: CO
Owner/Operator Name: NORLEY GLENN PIERPORT JOHN
Owner/Operator Address: 1840 INDUSTRIAL DR LIBERTYVILLE IL 60048
Owner/Operator Phone: 7089189018
Owner/Operator Type: P
Date Became Current:
Date Ended Current:

NAICS Information

Handler Information

Date Received: 20090204
Facility Name: PHARMASYN INC
Classification: Small Quantity Generator

Date Received: 19950920
Facility Name: PHARMASYN INC
Classification: Conditionally Exempt Small Quantity

Hazardous Waste Information

Waste Code: D003
Waste: REACTIVE WASTE

Waste Code: F005
Waste: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste Code: F003
Waste: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste Code: D002
Waste: CORROSIVE WASTE

Waste Code: F002

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Waste: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste Code: D001
Waste: IGNITABLE WASTE

Waste Code: D018
Waste: BENZENE

Waste Code: D009
Waste: MERCURY

Waste Code: D007
Waste: CHROMIUM

Violation/Evaluation Information

Evaluation Start Date: 20090204
Evaluation Agency: S
Evaluation Type Description: COMPLIANCE EVALUATION INSPECTION ON-SITE
Violation Short Description:
Violation Determined Date:
Actual Return to Compliance Date:
Violation Responsible Agency:
Enforcement Action Date:
Enforcement Agency:
Disposition Status Date:
Disposition Status:
Enforcement Type Description:
Proposed Penalty Amount:
Paid Amount:
Final Amount:

11	1 of 1	SSW/0.11	803.01	**MEDLINE INDUSTRIES** **1501 HARRIS RD** **LIBERTYVILLE IL 60048**	RCRA GEN

EPA Handler ID: ILR000169276
Current Site Name: MEDLINE INDUSTRIES
Generator Status Universe: Conditionally Exempt Small Quantity Generator
Land Type: Private
Activity Location: IL
TSD Activity: N
Mixed Waste Generator: N
Importer Activity: N
Transporter Activity: N
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Inject Activity: N

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Rece Waste From Off Site: N
Used Oil Transporter:
Used Oil Transfer Facility:
Used Oil Processor:
Used Oil Refiner:
Used Oil Burner:
Used Oil Market Burner:
Used Oil Spec Marketer:
Mailing Address: 1501 HARRIS RD, , LIBERTYVILLE, IL, 60048, US
Contact Name: GREG SCHAEFER
Contact Address: US
Contact Email: GSCHAEFER@MEDLINE.COM
Location Street 2:

Owner/Operator Information
Owner/Operator Indicator: CO
Owner/Operator Name: MEDLINE INDUSTRIES
Owner/Operator Address: US
Owner/Operator Phone:
Owner/Operator Type: P
Date Became Current: 20120409
Date Ended Current:

Owner/Operator Indicator: CP
Owner/Operator Name: MEDLINE INDUSTRIES
Owner/Operator Address: US
Owner/Operator Phone:
Owner/Operator Type: P
Date Became Current: 20120409
Date Ended Current:

NAICS Information

Naics Code: 42345
Naics Description: MEDICAL, DENTAL, AND HOSPITAL EQUIPMENT AND SUPPLIES MERCHANT WHOLESALERS

Handler Information

Date Received: 20120409
Facility Name: MEDLINE INDUSTRIES
Classification: Conditionally Exempt Small Quantity

Hazardous Waste Information

Waste Code: D001
Waste: IGNITABLE WASTE

Violation/Evaluation Information

12	1 of 1	SE/0.07	784.17	**WM MEYER & SONS INC** **1700 FRANKLIN BLVD** **LIBERTYVILLE IL 60048**	RCRA GEN

EPA Handler ID: ILR000184895
Current Site Name: WM MEYER & SONS INC
Generator Status Universe: Small Quantity Generator

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Land Type: Private
Activity Location: IL
TSD Activity: N
Mixed Waste Generator: N
Importer Activity: N
Transporter Activity: N
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Inject Activity: N
Rece Waste From Off Site: N
Used Oil Transporter:
Used Oil Transfer Facility:
Used Oil Processor:
Used Oil Refiner:
Used Oil Burner:
Used Oil Market Burner:
Used Oil Spec Marketer:
Mailing Address: 1700 FRANKLIN BLVD, , LIBERTYVILLE, IL, 60048, US
Contact Name: JAMES REEDY
Contact Address: US
Contact Email:
Location Street 2:

Owner/Operator Information
Owner/Operator Indicator: CO
Owner/Operator Name: WM MEYER & SONS INC
Owner/Operator Address: US
Owner/Operator Phone:
Owner/Operator Type: P
Date Became Current: 20140904
Date Ended Current:

Owner/Operator Indicator: CP
Owner/Operator Name: WM MEYER & SONS INC
Owner/Operator Address: US
Owner/Operator Phone:
Owner/Operator Type: P
Date Became Current: 20140904
Date Ended Current:

NAICS Information

Naics Code: 11111
Naics Description: SOYBEAN FARMING

Handler Information

Date Received: 20140904
Facility Name: WM MEYER & SONS INC
Classification: Small Quantity Generator

Hazardous Waste Information

Waste Code: D001
Waste: IGNITABLE WASTE

Waste Code: D007

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Waste: CHROMIUM

Waste Code: D035
Waste: METHYL ETHYL KETONE

Waste Code: F005
Waste: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste Code: D006
Waste: CADMIUM

Waste Code: F003
Waste: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste Code: D008
Waste: LEAD

Waste Code: D004
Waste: ARSENIC

Waste Code: D010
Waste: SELENIUM

Violation/Evaluation Information

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13 **1 of 2** **E/0.10** **785.66** **Sequoia Supply** **LUST**
1822 Industrial Dr.
Libertyville IL 60048

Incident NO: 903543
BL ID: 0970905098
US ID:
TF ID:
FIPS Code: 097
RTK DTM: 12/29/2005
RTK Status: Not Reviewed
Contact: RON MCCALL

Region: 2
Region Name: Maywood
County: Lake
PO Box:
Phone: 8474525500
Latitude: 42.30659
Longitude: -88.00721

Incident Information

Regulated By: 731
20 Day Rpt: 2/29/1992
45 Day Rpt: 2/29/1992
NFR Date: 3/13/1991

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Recorded Date:

Events Information

Event Type Code: NORL
Event Type: Notice of Release Letter sent
Event Date: 11/30/1990

Event Type Code: RESP
Event Type: Response Letter received
Event Date: 2/11/1991

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13 **2 of 2** **E/0.10** **785.66** **SEQUOIA SUPPLY** **SPILLS**
1822 INDUSTRIAL DRIVE
LIBERTYVILLE IL

Incident NO: 903543
Clean Up Actions:
Hazmat Incid Type: LEAK
Leaking UST?:
Data Input Status: CLOSED
Entered By:
Incident Rprt Date: 11/29/1990 9:31:00 AM
DI/Time Occurred:
Media or Medium:
Area Involved: FIXED FACILITY
Where Taken:
Temp:
Contacted ESDA:
ESDA on Scene:
Check if Unknown (Occur):
Check if Unknown Occurrence:
Date Time Discovered: 11/28/90 1600
Check if Unknown (Discov):
Number of People Evacuated:
Responsible Party Street:
Specific ESDA Agncy Contacted:
StateAgency Assis needed:
Contacted Agency Name:
Other Agency On Scene?:
Agency Other Than ESDA:
Contacted Fire Department:
Fire Department on Scene:
Contacted Dire Dept Name:
Contacted Police Dept:
Police Depart on Scene:
Contacted police Dep Name:
Sheriff Police Department:
Sheriff Dept on Scene:
Contactd Sheriff Dept Name:
Proper Safety Precautions:

Incident County: LAKE
Caller Represents: ALBERT HALFF ASSOCIATES
Street: 1822 INDUSTRIAL DRIVE
City: LIBERTYVILLE
State: ILLINOIS
County: LAKE
Milepost:
Section:
On Scene Contact:
Facility Manager:
Faci Mngr Phone:
Wind:
Township:
Range:

Narrative:

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

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14 **1 of 1** **E/0.10** **786.61** **Sequoia Supply** **UST**
1820 Industrial Dr
Libertyville IL 60048

Facility ID: 2018253
Facility Status: Closed
Facility Type: None
Motor Fuel Type:
Motor Fuel Permit Insp Dt:
Motor Fuel Permit Expir Dt:
Green Tag Decal:
Green Tag Issue Date:
Green Tag Expiration Date:
County: Lake

Owner Information

Owner ID: U0013773
Owner Name: Sequoia Supply
Owner Address: 1820 Industrial Dr
Owner City: Libertyville
Owner State: IL
Owner Zip: 60048

Tank Information

Tank ID: 1
Tank Status: Removed
Tank Capacity: 5000
Product: Diesel Fuel
Date Installed:
Last Used Date:
Removed Date: 11/28/1990
Abandoned Date:
Red Tage Issue Date:
OSFM First Notify Date: 1/5/1987
Fee Due:
Pending Nov: N
IEMA Number(s):

---

15 **1 of 1** **ESE/0.12** **787.27** **CONTEMPO DESIGN INC** **RCRA GEN**
1800 INDUSTRIAL DR
LIBERTYVILLE IL 60048

EPA Handler ID: ILD984915710
Current Site Name: CONTEMPO DESIGN INC
Generator Status Universe: Conditionally Exempt Small Quantity Generator
Land Type: Private
Activity Location: IL
TSD Activity: N
Mixed Waste Generator: N
Importer Activity: N

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Transporter Activity: N
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Inject Activity: N
Rece Waste From Off Site: N
Used Oil Transporter:
Used Oil Transfer Facility:
Used Oil Processor:
Used Oil Refiner:
Used Oil Burner:
Used Oil Market Burner:
Used Oil Spec Marketer:
Mailing Address: 1800 INDUSTRIAL DR, , LIBERTYVILLE, IL, 60048,
Contact Name: TIM WILSON
Contact Address: 1800 INDUSTRIAL DR, , LIBERTYVILLE, IL, 60048, US
Contact Email:
Location Street 2:

Owner/Operator Information
Owner/Operator Indicator: CO
Owner/Operator Name: CONTEMPO DESIGN INC
Owner/Operator Address: 1800 INDUSTRIAL DR LIBERTYVILLE IL 60048
Owner/Operator Phone: 7085496600
Owner/Operator Type: P
Date Became Current:
Date Ended Current:

NAICS Information

Handler Information

Date Received: 19930407
Facility Name: CONTEMPO DESIGN INC
Classification: Conditionally Exempt Small Quantity

Hazardous Waste Information

Waste Code: D001
Waste: IGNITABLE WASTE

Violation/Evaluation Information

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16 **1 of 1** **ESE/0.11** **786.37** **GRAPHIC SHEET FED SVC CORP** **RCRA GEN**
1807 INDUSTRIAL DR
LIBERTYVILLE IL 60048

EPA Handler ID: ILD984916700
Current Site Name: GRAPHIC SHEET FED SVC CORP
Generator Status Universe: Small Quantity Generator
Land Type: Private
Activity Location: IL
TSD Activity: N
Mixed Waste Generator: N
Importer Activity: N
Transporter Activity: N

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Inject Activity: N
Rece Waste From Off Site: N
Used Oil Transporter:
Used Oil Transfer Facility:
Used Oil Processor:
Used Oil Refiner:
Used Oil Burner:
Used Oil Market Burner:
Used Oil Spec Marketer:
Mailing Address: 1807 INDUSTRIAL DR, , LIBERTYVILLE, IL, 60048,
Contact Name: MARK MIRANOO
Contact Address: 1807 INDUSTRIAL DR, , LIBERTYVILLE, IL, 60048, US
Contact Email:
Location Street 2:

Owner/Operator Information
Owner/Operator Indicator: CO
Owner/Operator Name: MIRANOO MARK
Owner/Operator Address: 1807 INDUSTRIAL DR LIBERTYVILLE IL 60048
Owner/Operator Phone: 7086800700
Owner/Operator Type: P
Date Became Current:
Date Ended Current:

NAICS Information

Handler Information

Date Received: 19930419
Facility Name: GRAPHIC SHEET FED SVC CORP
Classification: Small Quantity Generator

Hazardous Waste Information

Waste Code: D001
Waste: IGNITABLE WASTE

Violation/Evaluation Information

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
17	1 of 4	ESE/0.12	786.76	ZF of North America 1810 Industrial Dr. Libertyville IL 60048	LUST

Incident NO: 930412
BL ID: 0970905053
US ID: ILD982425522
TF ID:
FIPS Code: 097
RTK DTM: 12/29/2005
RTK Status: Not Reviewed
Contact: BERND KOERNER

Region: 2
Region Name: Maywood
County: Lake
PO Box:
Phone: 8476343500
Latitude: 42.30629
Longitude: -88.00716

Incident Information

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Regulated By: 731
20 Day Rpt: 4/5/1993
45 Day Rpt: 6/9/1993
NFR Date: 9/7/1993
Recorded Date:

Events Information

Event Type Code: NORL
Event Type: Notice of Release Letter sent
Event Date: 2/23/1993

Event Type Code: RL
Event Type: Review Letter sent
Event Date: 6/16/1993

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
17	2 of 4	ESE/0.12	786.76	ZF OF NORTH AMERICA 1810 INDUSTRIAL DR LIBERTYVILLE IL 60048	RCRA NON GEN

EPA Handler ID: ILD982425522
Current Site Name: ZF OF NORTH AMERICA
Generator Status Universe: No Report
Land Type: Private
Activity Location: IL
TSD Activity: N
Mixed Waste Generator: N
Importer Activity: N
Transporter Activity: N
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Inject Activity: N
Rece Waste From Off Site: N
Used Oil Transporter:
Used Oil Transfer Facility:
Used Oil Processor:
Used Oil Refiner:
Used Oil Burner:
Used Oil Market Burner:
Used Oil Spec Marketer:
Mailing Address: 1810 INDUSTRIAL DR, , LIBERTYVILLE, IL, 60048, US
Contact Name: ENV COORDINATOR
Contact Address: US
Contact Email:
Location Street 2:

Owner/Operator Information
Owner/Operator Indicator: CO
Owner/Operator Name: ZF OF NORTH AMERICA
Owner/Operator Address: ADDRESS NOT REPORTED CITY NOT REPORTED AK 99998
Owner/Operator Phone: 3125551212
Owner/Operator Type: P
Date Became Current:
Date Ended Current:

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Owner/Operator Indicator: CP
Owner/Operator Name: NAME NOT REPORTED
Owner/Operator Address: ADDRESS NOT REPORTED CITY NOT REPORTED AK 99998
Owner/Operator Phone: 3125551212
Owner/Operator Type: P
Date Became Current:
Date Ended Current:

NAICS Information

Handler Information

Date Received: 20071101
Facility Name: ZF OF NORTH AMERICA
Date Received: 19880406
Facility Name: ZF OF NORTH AMERICA
Classification: Large Quantity Generator

Hazardous Waste Information

Waste Code: D001
Waste: IGNITABLE WASTE

Violation/Evaluation Information

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
17	3 of 4	ESE/0.12	786.76	Z F OF NORTH AMERICA 1810 INDUSTRIAL DR. LIBERTYVILLE IL	SPILLS

Incident NO: 930412
Clean Up Actions:
Hazmat Incid Type: LEAK
Leaking UST?:
Data Input Status: CLOSED
Entered By:
Incident Rprt Date: 2/18/1993 9:14:00 AM
Dt/Time Occurred:
Media or Medium:
Area Involved: FIXED FACILITY
Where Taken:
Temp:
Contacted ESDA:
ESDA on Scene:
Check if Unknown (Occur):
Check If Unknown Occurrence:
Date Time Discovered: 02/17/93 1100
Check if Unknown (Discov):
Number of People Evacuated:
Responsible Party Street: 777 HICKORY HILL DR., VERNON HILLS, IL 60061
Specific ESDA Agncy Contacted:
StateAgency Assis needed:
Contacted Agency Name:
Other Agency On Scene?:
Agency Other Than ESDA:

Incident County: LAKE
Caller Represents: Z F OF NORTH AMERICA
Street: 1810 INDUSTRIAL DR.
City: LIBERTYVILLE
State: ILLINOIS
County: LAKE
Milepost:
Section:
On Scene Contact:
Facility Manager:
Faci Mngr Phone:
Wind:
Township:
Range:

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Contacted Fire Department:
Fire Department on Scene:
Contacted Dire Dept Name:
Contacted Police Dept:
Police Depart on Scene:
Contacted police Dep Name:
Sheriff Police Department:
Sheriff Dept on Scene:
Contactd Sheriff Dept Name:
Proper Safety Precautions:

Narrative:

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
17	4 of 4	ESE/0.12	786.76	Zf Of North America 1810 Industrial Dr Libertyville IL 60048	UST

Facility ID: 2026053
Facility Status: Closed
Facility Type: Industrial / Manufacturing
Motor Fuel Type:
Motor Fuel Permit Insp Dt:
Motor Fuel Permit Expir Dt:
Green Tag Decal:
Green Tag Issue Date:
Green Tag Expiration Date:
County: Lake

Owner Information

Owner ID: U0016803
Owner Name: Zf Industries Inc
Owner Address: 777 Hickory Hill
Owner City: Vernon Hills
Owner State: IL
Owner Zip: 60061

Tank Information

Tank ID: 1
Tank Status: Removed
Tank Capacity: 2500
Product: Used Oil
Date Installed:
Last Used Date: 1/9/1993
Removed Date: 2/17/1993
Abandoned Date:
Red Tage Issue Date:
OSFM First Notify Date: 10/4/1990
Fee Due:
Pending Nov: N
IEMA Number(s):

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
18	1 of 1	ESE/0.09	784.12	Lake County Department of Transportation 19179 West Peterson Road Libertyville IL 60048	SRP

IEPA ID: 0970905235
USEPA ID:
County: Lake
Longitude: -88.007907
Latitude: 42.305851

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
19	1 of 1	ENE/0.25	782.62	AMERICAN NATIONAL BANK 1940 WHITE BLVD LIBERTYVILLE IL 60045	RCRA NON GEN

EPA Handler ID: ILD981795685
Current Site Name: AMERICAN NATIONAL BANK
Generator Status Universe: No Report
Land Type:
Activity Location: IL
TSD Activity: N
Mixed Waste Generator: N
Importer Activity: N
Transporter Activity: N
Transfer Facility: N
Recycler Activity: N
Onsite Burner Exemption: N
Furnace Exemption: N
Underground Inject Activity: N
Rece Waste From Off Site: N
Used Oil Transporter:
Used Oil Transfer Facility:
Used Oil Processor:
Used Oil Refiner:
Used Oil Burner:
Used Oil Market Burner:
Used Oil Spec Marketer:
Mailing Address: 445 W ERIE ST, , CHICAGO, IL, 60610, US
Contact Name: NANCY GOLDBERG
Contact Address: 445 W ERIE ST, , CHICAGO, IL, 60610, US
Contact Email:
Location Street 2:

Owner/Operator Information
Owner/Operator Indicator: CO
Owner/Operator Name: AMERICAN NATIONAL BANK
Owner/Operator Address: ADDRESS NOT REPORTED CITY NOT REPORTED AK 99998
Owner/Operator Phone: 3125551212
Owner/Operator Type: P
Date Became Current:
Date Ended Current:

Owner/Operator Indicator: CP
Owner/Operator Name: NAME NOT REPORTED
Owner/Operator Address: ADDRESS NOT REPORTED CITY NOT REPORTED AK 99998
Owner/Operator Phone: 3125551212

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Owner/Operator Type: P
Date Became Current:
Date Ended Current:

NAICS Information

Handler Information

Date Received: 19861110
Facility Name: AMERICAN NATIONAL BANK
Hazardous Waste Information

Waste Code: D000
Waste: DESCRIPTION

Violation/Evaluation Information

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
20	1 of 1	ENE/0.28	785.77	Hoffner Family Trust 1972 Enterprise Court Libertyville IL 60048	SRP

IEPA ID: 0970905176
USEPA ID:
County: Lake
Longitude: -88.006286
Latitude: 42.311124

--- Details ---
Active Site: No
NFR Site Name: Hoffner Family Trust
NFR Recorded Date: 10/8/1999
NFR Letter Date: 8/20/1999
Land Use: Residential or Industrial/Commercial
Comprehensive Focused: Focused
Acres: 1
Ground Water Use Restriction: No
Highway Authority Agreement: No
Ordinance: No
Industrial Commercial: No
Worker Caution: No
Slab On Grade: No
BCT: No
Building Slab: No
Asphalt Used: No
Concrete Used: No
Clean Soil 3ft: No
Clean Soil 10: No
Alternate Barrier: No
4Y Letter Date:
Effective: TRUE
Company: Hoffner Family Trust
Applicant First Name: Edward
Applicant Last Name: Goldman
Address: 203 North LaSalle Street
City: Chicago, IL
Zip Code: 60601
Phone: (312) 368-7063
Received SA Date: 4/16/1999

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Consultant Company: Pioneer Environmental, Inc.
Consultant Contact: Charity Simpson
Consultant Address: 700 North Sacramento Boulevard
Consultant City: Chicago, IL
Consultant Zip Code: 60612
Consultant Phone: (312) 587-1021
Project Manager: Not assigned

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
21	1 of 1	ENE/0.27	780.86	Oemmceo Inc. 1800 Temple Dr. Libertyville IL 60048	LUST

Incident NO: 903800
BL ID: 0970905019
US ID: ILD984838557
TF ID:
FIPS Code: 097
RTK DTM: 12/29/2005
RTK Status: Not Reviewed
Contact: DIHEL, FLOYD
Region: 2
Region Name: Maywood
County: Lake
PO Box:
Phone: 8473675000
Latitude: 42.31004
Longitude: -88.00433

Incident Information

Regulated By: 731
20 Day Rpt: 2/29/1992
45 Day Rpt: 2/29/1992
NFR Date: 3/26/1997
Recorded Date: 4/7/1997

Events Information

Event Type Code: NORL
Event Type: Notice of Release Letter sent
Event Date: 1/2/1991

Event Type Code: RESP
Event Type: Response Letter received
Event Date: 1/9/1991

Event Type Code: CACR
Event Type: Corrective Action Completion Report received
Event Date: 5/16/1996

Event Type Code: PE CERT
Event Type: Professional Engineer Certification received
Event Date: 5/16/1996

Event Type Code: CACR
Event Type: Corrective Action Completion Report received
Event Date: 9/30/1996

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
22	1 of 1	SSE/0.26	763.05	NORTH SHORE GAS FREMONT TWP* IL	NIPC

IEPA No: 0979999999
Active Sites:

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Source:
QS 1st: SE*
QS 2nd:
Map NO: 857
Prov NO: 097809000C
Township: 44N*
Range: 10E*
Section: 12*
County: LAKE COUNTY
Sites Previ Record & Map:
Sites Previ Rec&Not Map: X

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
23	1 of 2	ESE/0.32	770.95	Wisconsin Central, Ltd. 1228 Peterson Road Libertyville IL 60048	INST CONTROL

IEPA ID: 0970905190
US EPA ID:
County: Lake
Latitude: 42.306259
Longitude: -88.008221

--- Details ---
IEPA ID: 0970905190
NFR Site Name: Wisconsin Central, Ltd.
NFR Letter Date: 4/21/2009
NFR Recorded Date: 4/28/2009
Land Use: Industrial/Commercial
Comprehensive Focused: Focused
GW Use Restriction: No
Hwy Authority Agreement: No
Ordinance: No
Industrial Commercial: Yes
Worker Caution: No
Slab On Grade: No
Building Control Technology: No
Building Slab: No
Asphalt Used: No
Concrete Used: No
Clean Soil 3ft: No
Clean Soil 10ft: No
Alternate Barrier: No
Applicant First Name: Geoffrey
Applicant Last Name: Nokes
Applicant Company: Canadian National Rail Road
Applicant Address: 17641 South Ashland Avenue
City: Homewood, IL
Zip Code: 60018
Acres: 0.024

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB
23	2 of 2	ESE/0.32	770.95	Wisconsin Central, Ltd. 1228 Peterson Road Libertyville IL 60048	SRP

IEPA ID: 0970905190
USEPA ID:
County: Lake
Longitude: -88.008221

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Latitude: 42.306259

--- Details ---

Active Site: No
NFR Site Name: Wisconsin Central, Ltd.
NFR Recorded Date: 4/28/2009
NFR Letter Date: 4/10/2009
Land Use: Industrial/Commercial
Comprehensive Focused: Focused
Acres: 0.024
Ground Water Use Restriction: No
Highway Authority Agreement: No
Ordinance: No
Industrial Commercial: Yes
Worker Caution: No
Slab On Grade: No
BCT: No
Building Slab: No
Asphalt Used: No
Concrete Used: No
Clean Soil 3ft: No
Clean Soil 10: No
Alternate Barrier: No
4Y Letter Date:
Effective: FALSE
Company: Canadian National Railway
Applicant First Name: Geoffery
Applicant Last Name: Nokes
Address: 17641 South Ashland Avenue
City: Homewood, IL
Zip Code: 60430
Phone: (708) 332-3860
Received SA Date: 8/2/2001
Consultant Company: STS Consultants, Ltd.
Consultant Contact: Eric L. Reuscher
Consultant Address: 750 Corporate Woods Parkway
Consultant City: Vernon Hills, IL
Consultant Zip Code: 60061-3153
Consultant Phone: (847) 279-2500
Project Manager: Todd Gross

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Active Site: No
NFR Site Name: Wisconsin Central, Ltd.
NFR Recorded Date: 4/28/2009
NFR Letter Date: 4/21/2009
Land Use: Industrial/Commercial
Comprehensive Focused: Focused
Acres: 0.024
Ground Water Use Restriction: No
Highway Authority Agreement: No
Ordinance: No
Industrial Commercial: Yes
Worker Caution: No
Slab On Grade: No
BCT: No
Building Slab: No
Asphalt Used: No
Concrete Used: No
Clean Soil 3ft: No
Clean Soil 10: No

Map Key	Number of Records	Direction/ Distance mi	Elevation ft	Site	DB

Alternate Barrier: No
4Y Letter Date:
Effective: TRUE
Company: Canadian National Railway
Applicant First Name: Geoffery
Applicant Last Name: Nokes
Address: 17641 South Ashland Avenue
City: Homewood, IL
Zip Code: 60430
Phone: (708) 332-3860
Received SA Date: 8/2/2001
Consultant Company: STS Consultants, Ltd.
Consultant Contact: Eric L. Reuscher
Consultant Address: 750 Corporate Woods Parkway
Consultant City: Vernon Hills, IL
Consultant Zip Code: 60061-3153
Consultant Phone: (847) 279-2500
Project Manager: Todd Gross

Unplottable Summary

Total: 18 Unplottable sites

DB	Company Name/Site Name	Address	City	Zip
FINDS/FRS	FREMONT COMPOSTING/DK RECYCLING	23379 W RTE 60 & 1 3 4 MI N PETERSON RD	GRAYSLAKE IL	60030
FINDS/FRS	MARTIN, HOMER	NORTH SIDE OF PETERSON RD	LIBERTYVILLE IL	60048
FINDS/FRS	RESIDENTIAL HOMES/AVIS LLC	PETERSON RD E OF BUTTERFIELD	LIBERTYVILLE IL	60048
FINDS/FRS	LAKE COUNTY GRADING	PETERSON ROAD	LIBERTYVILLE IL	60048
FINDS/FRS	LAKE COUNTY FAIR GROUNDS	NWC PETERSEN & HARRIS RDS	GRAYSLAKE IL	60030
FINDS/FRS	INDEPENDENCE GROVE FOREST PRV	16700 W PETERSON RD	LIBERTYVILLE IL	60048
LUST	Independence Grove Forest Preserve	16700 West Peterson Rd.	Libertyville IL	60048
SPILLS	UNKNOWN	MIDLOTHIAN ROAD	MUNDELEIN IL	
SPILLS	WISCONSIN CENTRAL RAILROAD	PETERSON RD, NORTH OF RT 45 WISCONSIN CENTRAL	LIBERTYVILLE IL	
SPILLS	LAKE COUNTY FORREST PRESERVE	16700 W. PETERSON RD.	LIBERTYVILLE IL	
SPILLS	Lake County Department of Transportation	Old Peterson Rd west of US 45	Libertyville IL	
SPILLS	TOWN & COUNTRY CONSTRUCTION	FRANKLIN ST/LONG MEADOW E	MUNDELEIN IL	
SPILLS2	COMMONWEALTH EDISON	PETERSON ROAD EAST OF RT. 45	LIBERTYVILLE IL	
SPILLS2	COMMONWEALTH EDISON	PETERSON ROAD EAST OF RT. 45	LIBERTYVILLE IL	
SSU	EDCO	Route 37 and Casey Road	Grayslake IL	60030
UST	Klaus Schmechtig Co	25175 Midlothian Rd	Mundelein IL	60060
UST	SAIA LTL Freight	2260 S Midlothian Rd	Grayslake IL	60030

UST	Harold Holland Trucking	24675 N Midlothian	Mundelein IL	60060

Unplottable Report

Site: *FREMONT COMPOSTING/DK RECYCLING*
23379 W RTE 60 & 1 3 4 MI N PETERSON RD GRAYSLAKE IL 60030

FINDS/FRS

Registry ID:	110018041858
FIPS Code:	17097
Program Acronyms:	
HUC Code:	07120006
Site Type Name:	STATIONARY
EPA Region Code:	05
Conveyor:	ACES
County Name:	LAKE
Source:	
SIC Codes:	
SIC Code Descriptions:	
Federal Facility Code:	
NAICS Codes:	
NAICS Code Descriptions:	
Federal Agency Name:	
US/Mexico Border Ind:	
Congressional Dist No:	08
Census Block Code:	170978641051078
Create Date:	18-OCT-2004 11:21:48
Update Date:	21-OCT-2008 11:32:24
Location Description:	
Supplemental Location:	
Tribal Land Code:	
Tribal Land Name:	
Latitude:	42.27
Longitude:	-88.073
Coord Collection Method:	
Accuracy Value:	
Datum:	NAD83
Reference Point:	
Interest Types:	STATE MASTER
Facility Detail Rprt URL:	http://iaspub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110018041858

Site: *MARTIN, HOMER*
NORTH SIDE OF PETERSON RD LIBERTYVILLE IL 60048

FINDS/FRS

Registry ID:	110018174740
FIPS Code:	17097
Program Acronyms:	
HUC Code:	
Site Type Name:	STATIONARY
EPA Region Code:	05
Conveyor:	
County Name:	LAKE
Source:	
SIC Codes:	
SIC Code Descriptions:	
Federal Facility Code:	
NAICS Codes:	

NAICS Code Descriptions:	
Federal Agency Name:	
US/Mexico Border Ind:	
Congressional Dist No:	
Census Block Code:	
Create Date:	19-OCT-2004 08:53:11
Update Date:	17-MAR-2006 19:17:04
Location Description:	
Supplemental Location:	
Tribal Land Code:	
Tribal Land Name:	
Latitude:	
Longitude:	
Coord Collection Method:	
Accuracy Value:	
Datum:	NAD83
Reference Point:	
Interest Types:	STATE MASTER
Facility Detail Rprt URL:	http://iaspub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110018174740

Site: *RESIDENTIAL HOMES/AVIS LLC*
PETERSON RD E OF BUTTERFIELD LIBERTYVILLE IL 60048

FINDS/FRS

Registry ID:	110018312459
FIPS Code:	17097
Program Acronyms:	
HUC Code:	
Site Type Name:	STATIONARY
EPA Region Code:	05
Conveyor:	
County Name:	LAKE
Source:	
SIC Codes:	
SIC Code Descriptions:	
Federal Facility Code:	
NAICS Codes:	
NAICS Code Descriptions:	
Federal Agency Name:	
US/Mexico Border Ind:	
Congressional Dist No:	
Census Block Code:	
Create Date:	19-OCT-2004 14:29:37
Update Date:	17-MAR-2006 21:35:28
Location Description:	
Supplemental Location:	
Tribal Land Code:	
Tribal Land Name:	
Latitude:	
Longitude:	
Coord Collection Method:	
Accuracy Value:	
Datum:	NAD83
Reference Point:	
Interest Types:	STATE MASTER
Facility Detail Rprt URL:	http://iaspub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110018312459

Site: *LAKE COUNTY GRADING*
PETERSON ROAD LIBERTYVILLE IL 60048

FINDS/FRS

Registry ID:	110007267867
FIPS Code:	17097
Program Acronyms:	
HUC Code:	
Site Type Name:	STATIONARY
EPA Region Code:	05
Conveyor:	
County Name:	LAKE
Source:	
SIC Codes:	1442
SIC Code Descriptions:	CONSTRUCTION SAND AND GRAVEL
Federal Facility Code:	
NAICS Codes:	212321
NAICS Code Descriptions:	CONSTRUCTION SAND AND GRAVEL MINING.
Federal Agency Name:	
US/Mexico Border Ind:	
Congressional Dist No:	
Census Block Code:	
Create Date:	01-MAR-2000 00:00:00
Update Date:	09-JAN-2015 17:08:21
Location Description:	
Supplemental Location:	
Tribal Land Code:	
Tribal Land Name:	
Latitude:	
Longitude:	
Coord Collection Method:	
Accuracy Value:	
Datum:	NAD83
Reference Point:	
Interest Types:	AIR MINOR, STATE MASTER
Facility Detail Rprt URL:	http://iaspub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110007267867

Site: *LAKE COUNTY FAIR GROUNDS*
NWC PETERSEN & HARRIS RDS GRAYSLAKE IL 60030

FINDS/FRS

Registry ID:	110032938622
FIPS Code:	17097
Program Acronyms:	
HUC Code:	
Site Type Name:	STATIONARY
EPA Region Code:	05
Conveyor:	
County Name:	LAKE
Source:	
SIC Codes:	
SIC Code Descriptions:	
Federal Facility Code:	
NAICS Codes:	
NAICS Code Descriptions:	
Federal Agency Name:	
US/Mexico Border Ind:	
Congressional Dist No:	
Census Block Code:	
Create Date:	22-DEC-2007 16:51:57
Update Date:	08-JUL-2013 15:50:59
Location Description:	
Supplemental Location:	
Tribal Land Code:	
Tribal Land Name:	
Latitude:	

Longitude:	
Coord Collection Method:	
Accuracy Value:	
Datum:	NAD83
Reference Point:	
Interest Types:	ICIS-NPDES NON-MAJOR, STORM WATER CONSTRUCTION
Facility Detail Rprt URL:	http://iaspub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110032938622

Site: *INDEPENDENCE GROVE FOREST PRV*
16700 W PETERSON RD LIBERTYVILLE IL 60048

FINDS/FRS

Registry ID:	110018174223
FIPS Code:	17097
Program Acronyms:	
HUC Code:	07120004
Site Type Name:	STATIONARY
EPA Region Code:	05
Conveyor:	ACES
County Name:	LAKE
Source:	
SIC Codes:	
SIC Code Descriptions:	
Federal Facility Code:	
NAICS Codes:	
NAICS Code Descriptions:	
Federal Agency Name:	
US/Mexico Border Ind:	
Congressional Dist No:	08
Census Block Code:	170978641011070
Create Date:	19-OCT-2004 08:52:10
Update Date:	22-DEC-2007 05:24:11
Location Description:	
Supplemental Location:	
Tribal Land Code:	
Tribal Land Name:	
Latitude:	42.30698
Longitude:	-88.02598
Coord Collection Method:	
Accuracy Value:	
Datum:	NAD83
Reference Point:	
Interest Types:	STATE MASTER
Facility Detail Rprt URL:	http://iaspub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110018174223

Site: *Independence Grove Forest Preserve*
16700 West Peterson Rd. Libertyville IL 60048

LUST

Incident NO:	971931	**Region:**	2
BL ID:	0970905167	**Region Name:**	Maywood
US ID:		**County:**	Lake
TF ID:		**PO Box:**	
FIPS Code:	097	**Phone:**	8473676640
RTK DTM:	12/29/2005	**Latitude:**	42.3069833333333
RTK Status:	Not Reviewed	**Longitude:**	-88.0259833333333
Contact:	LARRY BAKANEC		

Incident Information

--	--
Regulated By:	732
20 Day Rpt:	12/22/1997

45 Day Rpt:	12/22/1997
NFR Date:	3/1/2005
Recorded Date:	3/10/2005
--	--
Events Information	
--	--
Event Type Code:	NORL
Event Type:	Notice of Release Letter sent
Event Date:	10/20/1997
--	--
Event Type Code:	MISC COR
Event Type:	Miscellaneous Correspondence received
Event Date:	5/11/1998
--	--
Event Type Code:	ELECT YES
Event Type:	Elect to proceed under Title XVI form (letter) re
Event Date:	12/22/1997
--	--
Event Type Code:	MISC COR
Event Type:	Miscellaneous Correspondence received
Event Date:	11/15/1999
--	--
Event Type Code:	RL
Event Type:	Review Letter sent
Event Date:	3/3/2000
--	--
Event Type Code:	GWRPT
Event Type:	Groundwater Monitoring Report received
Event Date:	3/21/2002
--	--
Event Type Code:	STATUSRPT
Event Type:	Status Report received
Event Date:	12/16/2002
--	--
Event Type Code:	PE CERT
Event Type:	Professional Engineer Certification received
Event Date:	3/11/2003
--	--
Event Type Code:	PE CERT
Event Type:	Professional Engineer Certification received
Event Date:	11/24/2004
--	--
T16 Events Information	
--	--
Type:	SCPRO
Event Description Information	Site Classification Work Plan
Date:	12/16/1997
Resp. Due:	4/15/1998
Decision:	MOD
Mailed:	4/8/1998
--	--
Type:	SCBUD
Date:	12/16/1997
Resp. Due:	4/15/1998
Decision:	DEN
Mailed:	4/8/1998
--	--
Type:	SCCOM
Event Description Information	Site Classification Completion Report
Date:	5/27/1998
Resp. Due:	9/24/1998
Decision:	APR

Mailed:	9/21/1998
--	--
Type:	GWPLN
Event Description Information	Low Priority Corrective Action Plan
Date:	5/27/1998
Resp. Due:	9/24/1998
Decision:	APR
Mailed:	9/21/1998
--	--
Type:	GWBUD
Event Description Information	Low Priority Corrective Action Plan Budget
Date:	5/27/1998
Resp. Due:	9/24/1998
Decision:	DEN
Mailed:	9/21/1998
--	--
Type:	GWREP1
Event Description Information	Groundwater Monitoring Report/Low Priority [year 1]
Date:	5/12/1999
Resp. Due:	9/9/1999
Decision:	DEN
Mailed:	9/8/1999
--	--
Type:	GWREP2
Event Description Information	Groundwater Monitoring Report/Low Priority [year 2]
Date:	3/21/2002
Resp. Due:	7/19/2002
Decision:	DEN
Mailed:	9/19/2002
--	--
Type:	HCACR
Date:	11/24/2004
Resp. Due:	3/24/2005
Decision:	APR
Mailed:	3/1/2005
--	--
Type:	HPCAP
Date:	4/8/2004
Resp. Due:	8/6/2004
Decision:	MOD
Mailed:	6/30/2004
--	--
Type:	HCACR
Date:	3/11/2003
Resp. Due:	7/9/2003
Decision:	DEN
Mailed:	7/9/2003
--	--
Type:	HCACR
Date:	8/5/2003
Resp. Due:	12/3/2003
Decision:	DEN
Mailed:	12/3/2003
--	--
Type:	GWREP3
Event Description Information	Groundwater Monitoring Report/Low Priority [year 3]
Date:	9/26/2002
Resp. Due:	1/24/2003
Decision:	DEN
Mailed:	1/6/2003
--	--
Type:	CACR

Date:	9/26/2002
Resp. Due:	1/24/2003
Decision:	DEN
Mailed:	1/6/2003
--	--

Site: ***UNKNOWN***
MIDLOTHIAN ROAD MUNDELEIN IL SPILLS

Incident NO:	900757	**Incident County:**	LAKE
Clean Up Actions:		**Caller Represents:**	MESLUND AND ASSOC.,INC.
Hazmat Incid Type:	LEAK	**Street:**	MIDLOTHIAN ROAD
Leaking UST?:		**City:**	MUNDELEIN
Data Input Status:	CLOSED	**State:**	ILLINOIS
Entered By:		**County:**	LAKE
Incident Rprt Date:	3/22/1990 4:13:00 PM	**Milepost:**	
Dt/Time Occurred:		**Section:**	
Media or Medium:		**On Scene Contact:**	
Area Involved:	FIXED FACILITY	**Facility Manager:**	
Where Taken:	NONE	**Faci Mngr Phone:**	
Temp:		**Wind:**	
Contacted ESDA:		**Township:**	
ESDA on Scene:		**Range:**	
Check if Unknown (Occur):			
Check If Unknown Occurrence:			
Date Time Discovered:	03/22/90 1400		
Check if Unknown (Discov):			
Number of People Evacuated:	NONE		
Responsible Party Street:	115 SO.RIVER ST. RTE 25 NORTH AURORA,IL 60542		
Specific ESDA Agncy Contacted:			
StateAgency Assis needed:			
Contacted Agency Name:			
Other Agency On Scene?:			
Agency Other Than ESDA:			
Contacted Fire Department:			
Fire Department on Scene:			
Contacted Dire Dept Name:			
Contacted Police Dept:			
Police Depart on Scene:			
Contacted police Dep Name:			
Sheriff Police Department:			
Sheriff Dept on Scene:			
Contactd Sheriff Dept Name:			
Proper Safety Precautions:	NONE		

Narrative:

Site: ***WISCONSIN CENTRAL RAILROAD***
PETERSON RD, NORTH OF RT 45 WISCONSIN CENTRAL LIBERTYVILLE IL SPILLS

Incident NO:	H 2001 0151	**Incident County:**	LAKE
Clean Up Actions:	SUPERIOR SERVICES HAS BEEN HIRED TO HANDLE CLEAN UP	**Caller Represents:**	
Hazmat Incid Type:	LEAK OR SPILL	**Street:**	PETERSON RD, NORTH OF RT 45 WISCONSIN CENTRAL
Leaking UST?:		**City:**	LIBERTYVILLE

Data Input Status:	CLOSED	**State:**	ILLINOIS
Entered By:		**County:**	LAKE
Incident Rprt Date:	1/27/2001 12:00:00 AM	**Milepost:**	
Dt/Time Occurred:	01/27/2001 @ Unknown	**Section:**	
Media or Medium:		**On Scene Contact:**	BOB HOLCUMBE
Area Involved:	HIGHWAY,RAIL	**Facility Manager:**	
Where Taken:	CONDELL HOSPITAL	**Faci Mngr Phone:**	
Temp:		**Wind:**	NORTH 5
Contacted ESDA:		**Township:**	
ESDA on Scene:		**Range:**	
Check if Unknown (Occur):	01/27/2001 @ Unknown		
Check If Unknown Occurrence:			
Date Time Discovered:	01/27/2001 @ 09:15		
Check if Unknown (Discov):			
Number of People Evacuated:	NONE		
Responsible Party Street:	2 HARRISON ST. NORTH FOND DU LAC, WISCONSIN 54937		
Specific ESDA Agncy Contacted:			
StateAgency Assis needed:	NONE		
Contacted Agency Name:	SUPERIOR SPECIAL SERVICES, WISCONSIN CENTRAL MAINTENANCE OF WAY		
Other Agency On Scene?:			
Agency Other Than ESDA:	YES		
Contacted Fire Department:	YES		
Fire Department on Scene:			
Contacted Dire Dept Name:			
Contacted Police Dept:	YES		
Police Depart on Scene:			
Contacted police Dep Name:			
Sheriff Police Department:			
Sheriff Dept on Scene:			
Contactd Sheriff Dept Name:			
Proper Safety Precautions:	NONE		

Narrative:

IEPA, IDOT STATION 1, ICC, ISP COMMAND CENTER, IEMA REGION 4

Site: ***LAKE COUNTY FORREST PRESERVE***
16700 W. PETERSON RD. LIBERTYVILLE IL SPILLS

Incident NO:	971931	**Incident County:**	LAKE
Clean Up Actions:		**Caller Represents:**	GSC ENVIRONMENTAL LABS.
Hazmat Incid Type:	LEAK	**Street:**	16700 W. PETERSON RD.
Leaking UST?:		**City:**	LIBERTYVILLE
Data Input Status:	CLOSED	**State:**	ILLINOIS
Entered By:		**County:**	LAKE
Incident Rprt Date:	10/10/1997 9:17:00 AM	**Milepost:**	
Dt/Time Occurred:	UNKNOWN	**Section:**	
Media or Medium:		**On Scene Contact:**	
Area Involved:	FIXED FACILITY	**Facility Manager:**	
Where Taken:	-0-	**Faci Mngr Phone:**	
Temp:		**Wind:**	
Contacted ESDA:		**Township:**	
ESDA on Scene:		**Range:**	
Check if Unknown (Occur):	UNKNOWN		
Check If Unknown Occurrence:			
Date Time Discovered:	10/09/97 1130		

Check if Unknown (Discov):
Number of People Evacuated: -0-
Responsible Party Street: 2000 N. MILWAUKEE AVE., LIBERTYVILLE, IL 60048
Specific ESDA Agncy Contacted:
StateAgency Assis needed:
Contacted Agency Name:
Other Agency On Scene?:
Agency Other Than ESDA:
Contacted Fire Department:
Fire Department on Scene:
Contacted Dire Dept Name:
Contacted Police Dept:
Police Depart on Scene:
Contacted police Dep Name:
Sheriff Police Department:
Sheriff Dept on Scene:
Contactd Sheriff Dept Name:
Proper Safety Precautions: NONE

Narrative:

Site: ***Lake County Department of Transportation***
Old Peterson Rd west of US 45 Libertyville IL SPILLS

Incident NO:	H-2007-0335	**Incident County:**	Lake
Clean Up Actions:	Sand applied to the diesel that was on the road surface. Soil from ditch will be excavated and properly disposed of.	**Caller Represents:**	GeoTrans Inc
Hazmat Incid Type:	Leak or Spill	**Street:**	Old Peterson Rd west of US 45
Leaking UST?:		**City:**	Libertyville
Data Input Status:	Closed	**State:**	ILLINOIS
Entered By:	Kirgan, Ken/Comm Center/IEMA	**County:**	Lake
Incident Rprt Date:	3/20/2007 2:43:00 PM	**Milepost:**	
Dt/Time Occurred:		**Section:**	
Media or Medium:		**On Scene Contact:**	#1
Area Involved:		**Facility Manager:**	
Where Taken:	none	**Faci Mngr Phone:**	
Temp:		**Wind:**	
Contacted ESDA:		**Township:**	
ESDA on Scene:		**Range:**	

Check if Unknown (Occur):
Check If Unknown Occurrence:
Date Time Discovered: 3/13/2007 10:00
Check if Unknown (Discov):
Number of People Evacuated:
Responsible Party Street: 600 Winchester Rd, Libertyville, IL 60048
Specific ESDA Agncy Contacted:
StateAgency Assis needed:
Contacted Agency Name:
Other Agency On Scene?:
Agency Other Than ESDA:
Contacted Fire Department:
Fire Department on Scene:
Contacted Dire Dept Name:
Contacted Police Dept:

Police Depart on Scene:
Contacted police Dep Name:
Sheriff Police Department:
Sheriff Dept on Scene:
Contactd Sheriff Dept Name:
Proper Safety Precautions: none

Narrative:

3/20/07 1451 (KK) Laura/ISPCC advised. 3/20/07 1451 (KK) Louie/IDOT station 1 advised. 3/20/07 1453 (KK) faxed to IEPA, NRTP, ISPCC, IDOT station 1, IEMA region 3 on behalf of region 4.

Site: ***TOWN & COUNTRY CONSTRUCTION***
FRANKLIN ST/LONG MEADOW E MUNDELEIN IL SPILLS

Incident NO:	971048	**Incident County:**	LAKE
Clean Up Actions:		**Caller Represents:**	MUNDELEIN FD
Hazmat Incid Type:	SPILL	**Street:**	FRANKLIN ST/LONG MEADOW E
Leaking UST?:		**City:**	MUNDELEIN
Data Input Status:	CLOSED	**State:**	ILLINOIS
Entered By:		**County:**	LAKE
Incident Rprt Date:	6/12/1997 3:40:00 PM	**Milepost:**	
Dt/Time Occurred:	06/12/97 1530	**Section:**	
Media or Medium:		**On Scene Contact:**	
Area Involved:	OTHER/UNKNOWN POSSIBLEY STORM SEWER	**Facility Manager:**	
Where Taken:	NONE	**Faci Mngr Phone:**	
Temp:		**Wind:**	
Contacted ESDA:		**Township:**	
ESDA on Scene:		**Range:**	

Check if Unknown (Occur): 06/12/97 1530
Check If Unknown Occurrence:
Date Time Discovered:
Check if Unknown (Discov):
Number of People Evacuated: NONE
Responsible Party Street:
Specific ESDA Agncy Contacted:
StateAgency Assis needed:
Contacted Agency Name:
Other Agency On Scene?:
Agency Other Than ESDA:
Contacted Fire Department:
Fire Department on Scene:
Contacted Dire Dept Name:
Contacted Police Dept:
Police Depart on Scene:
Contacted police Dep Name:
Sheriff Police Department:
Sheriff Dept on Scene:
Contactd Sheriff Dept Name:
Proper Safety Precautions: NONE

Narrative:

INCIDENT_LOC[ESTATES] CAUSE_RELEAS[TRAFFIC ACCIDENT]

Site: ***COMMONWEALTH EDISON***

PETERSON ROAD EAST OF RT. 45 LIBERTYVILLE IL SPILLS2

Incident ID:	NL830238	**Occurence Dt:**	
Record Date:	4/12/1983	**LUST:**	
Incid County:	LAKE	**AC:**	

Site: ***COMMONWEALTH EDISON***
PETERSON ROAD EAST OF RT. 45 LIBERTYVILLE IL SPILLS2

Incident ID:	NL830238	**Occurence Dt:**	
Record Date:	4/13/1983	**LUST:**	
Incid County:	LAKE	**AC:**	

Site: ***EDCO***
Route 37 and Casey Road Grayslake IL 60030 SSU

Site ID:	0970250001	**Year Comp:**	2001
SSU Status:	Completed	**DTM Year Entered:**	
Site Type:	Landfill	**Project Manager:**	Rivera
Site Size:	19	**Commu Relation:**	McGinnis
FOS:	NA	**Region Name:**	Des Plaines
Use Paid:	ILD9806509	**County:**	Lake
Current Prog:	SSU-CO	**Latitude:**	42.319134
Financed:	PRP	**Longitude:**	-88.016182
LP52:	F85		
Month Completed:			

Site: ***Klaus Schmechtig Co***
25175 Midlothian Rd Mundelein IL 60060 UST

Facility ID: 2015296
Facility Status: Closed
Facility Type: Private Institution
Motor Fuel Type:
Motor Fuel Permit Insp Dt:
Motor Fuel Permit Expir Dt:
Green Tag Decal:
Green Tag Issue Date:
Green Tag Expiration Date:
County: Lake

Owner Information
-- --
Owner ID: U0008521
Owner Name: Klaus Schmechtig Co
Owner Address: 23196 N Indian Creek Rd
Owner City: Lincolnshire
Owner State: IL
Owner Zip: 60069
-- --
Tank Information
-- --
Tank ID: 1
Tank Status: Removed
Tank Capacity: 2000
Product: Gasoline
Date Installed:

Last Used Date: 4/1/1994
Removed Date: 10/19/1994
Abandoned Date:
Red Tage Issue Date:
OSFM First Notify Date: 4/7/1986
Fee Due:
Pending Nov: N
IEMA Number(s):
-- --
-- --

Site: ***SAIA LTL Freight***
2260 S Midlothian Rd Grayslake IL 60030 UST

Facility ID: 2045858
Facility Status: Not Installed
Facility Type: None
Motor Fuel Type:
Motor Fuel Permit Insp Dt:
Motor Fuel Permit Expir Dt:
Green Tag Decal:
Green Tag Issue Date:
Green Tag Expiration Date:
County: Lake

Owner Information
-- --
Owner ID: U0035172
Owner Name: Saia Motor Freight Lines, LLC
Owner Address: 11465 Johns Creek Pkwy Suite 330
Owner City: Johns Creek
Owner State: GA
Owner Zip: 30097
-- --
Tank Information
-- --
Tank ID: 1
Tank Status: Not Installed
Tank Capacity: 20000
Product: Diesel Fuel
Date Installed:
Last Used Date:
Removed Date:
Abandoned Date:
Red Tage Issue Date:
OSFM First Notify Date:
Fee Due: $0.00
Pending Nov: N
IEMA Number(s):
-- --
-- --
Tank Information
-- --
Tank ID: 2
Tank Status: Not Installed
Tank Capacity: 20000
Product: Diesel Fuel
Date Installed:
Last Used Date:
Removed Date:
Abandoned Date:
Red Tage Issue Date:

OSFM First Notify Date:
Fee Due: $0.00
Pending Nov: N
IEMA Number(s):
-- --
-- --
Tank Information
-- --
Tank ID: 3
Tank Status: Not Installed
Tank Capacity: 8000
Product: Diesel Exhaust Fluid (Non-Regulated)
Date Installed:
Last Used Date:
Removed Date:
Abandoned Date:
Red Tage Issue Date:
OSFM First Notify Date:
Fee Due: $0.00
Pending Nov: N
IEMA Number(s):
-- --
-- --

Site: ***Harold Holland Trucking***
24675 N Midlothian Mundelein IL 60060 UST

Facility ID: 2016049
Facility Status: Exempt
Facility Type: None
Motor Fuel Type:
Motor Fuel Permit Insp Dt:
Motor Fuel Permit Expir Dt:
Green Tag Decal:
Green Tag Issue Date:
Green Tag Expiration Date:
County: Lake

Owner Information
-- --
Owner ID: U0006483
Owner Name: Harold Holland Trucking
Owner Address: 24675 N Midlothian
Owner City: Mundelein
Owner State: IL
Owner Zip: 60060
-- --
Tank Information
-- --
Tank ID: 1
Tank Status: Exempt from registration
Tank Capacity: 1000
Product: Diesel Fuel
Date Installed:
Last Used Date: 12/1/1988
Removed Date: 12/1/1988
Abandoned Date:
Red Tage Issue Date:
OSFM First Notify Date: 3/26/1986
Fee Due:
Pending Nov: N
IEMA Number(s):

-- --
-- --

Appendix: Database Descriptions

Ecolog Environmental Risk Information Services Ltd (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ERIS updates databases as set out in ASTM Standard E1527-13, Section 8.1.8 Sources of Standard Source Information:

"Government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public."

Standard Environmental Record Sources

Federal

National Priority List: NPL
National Priorities List (Superfund)-NPL: EPA's (United States Environmental Protection Agency) list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. The NPL, which EPA is required to update at least once a year, is based primarily on the score a site receives from EPA's Hazard Ranking System. A site must be on the NPL to receive money from the Superfund Trust Fund for remedial action.
Government Publication Date: Oct 8, 2015

National Priority List - Proposed: PROPOSED NPL
Includes sites proposed (by the EPA, the state, or concerned citizens) for addition to the NPL due to contamination by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.
Government Publication Date: Oct 8, 2015

Deleted NPL: DELETED NPL
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.
Government Publication Date: Oct 8, 2015

Comprehensive Environmental Response, Compensation and Liability Information System - CERCLIS: CERCLIS
Superfund is a program administered by the United States Environmental Protection Agency (EPA) to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The EPA administers the Superfund program in cooperation with individual states and tribal governments; this database is made available by the EPA.
Government Publication Date: Oct 25, 2013

CERCLIS - No Further Remedial Action Planned: CERCLIS NFRAP
An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. The Archive designation means that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.
Government Publication Date: Oct 25, 2013

CERCLIS Liens: CERCLIS LIENS
A Federal Superfund lien exists at any property where EPA has incurred Superfund costs to address contamination ("Superfund site") and has provided notice of liability to the property owner. A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. This database is made available by the United States Environmental Protection Agency (EPA).
Government Publication Date: Jan 30, 2014

RCRA CORRACTS- Corrective Action: RCRA CORRACTS
RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. At these sites, the Corrective Action Program ensures that cleanups occur. EPA and state regulators work with facilities and communities to design remedies based on the contamination, geology, and anticipated use unique to each site.
Government Publication Date: Oct 13, 2015

RCRA non-CORRACTS TSD Facilities: RCRA TSD
RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).
Government Publication Date: Oct 13, 2015

RCRA Generator List: RCRA GEN
RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10).
Government Publication Date: Oct 13, 2015

RCRA Non-Generators: RCRA NON GEN
RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Non-Generators do not presently generate hazardous waste.
Government Publication Date: Oct 13, 2015

Federal Engineering Controls-ECs: FED ENG
Engineering controls (ECs) encompass a variety of engineered and constructed physical barriers (e.g., soil capping, sub-surface venting systems, mitigation barriers, fences) to contain and/or prevent exposure to contamination on a property. This database is made available by the United States Environmental Protection Agency (EPA).
Government Publication Date: Jul 30, 2014

Federal Institutional Controls- ICs: FED INST
Institutional controls are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's (United States Environmental Protection Agency) expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site.
Government Publication Date: Jul 30, 2014

Emergency Response Notification System: ERNS 1982 TO 1986
Database of oil and hazardous substances spill reports controlled by the The National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting all oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.
Government Publication Date: 1982-1986

Emergency Response Notification System: ERNS 1987 TO 1989
Database of oil and hazardous substances spill reports controlled by the The National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting all oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.
Government Publication Date: 1987-1989

Emergency Response Notification System: ERNS
Database of oil and hazardous substances spill reports controlled by the The National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting all oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories. This database is made available by the United States Environmental Protection Agency (EPA).
Government Publication Date: Oct 7, 2015

The Assessment, Cleanup and Redevelopment Exchange System (ACRES) Brownfield Database: FED BROWNFIELDS
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This database is made available by the United States Environmental Protection Agency (EPA).
Government Publication Date: Jul 20, 2015

State

State Response Action Program Database: SSU
The State Response Action Program database identifies the status of all sites under the responsibility of the Illinois EPA's State Sites Unit. The State Response Action Program database made available by Illinois Environmental Protection Agency. This database is state equivalent CERCLIS.
Government Publication Date: Jul 21, 2015

Solid Waste Landfills Subject to State Surcharge Database: SWF/LF
The Bureau of Land maintains a list of solid waste facilities and landfills throughout the state. This list made available by Illinois Environmental Protection Agency's Bureau of land.
Government Publication Date: Dec 11, 2014

Special Waste Site List: SWF/LF SPECIAL
The following landfills are those that as of January 1, 1990, accept non-hazardous special waste pursuant to the Illinois Environmental Protection Agency Non-Hazardous Special Waste Definition. List A includes landfills that may receive any non-hazardous waste. Non-Regional Pollutant Control Facilities are so noted. List B includes landfills designed to receive specific non-hazardous wastes. List B landfills are designated as a Regional Pollutant Control Facility by RPCF, or Non-regional Pollutant Control Facility by Non-RPCF.
Government Publication Date: Jan 1, 1990

Northeastern Illinois Planning Commission Historical Inventory of Solid Waste Disposal Sites in Northeastern Illinois: NIPC
Historical inventory of solid waste disposal sites in northeastern Illinois prepared by the Northeastern Illinois Planning Commission (NIPC).
Government Publication Date: Dec 1987

Clean Construction or Demolition Debris: CCDD
This is a list of CCDD Fill Operations with Approved Permits. Beginning July 1, 2008, no person can use CCDD as fill material in a current or former quarry, mine, or other excavation unless they have obtained a permit from the Illinois EPA.
Government Publication Date: May 8, 2015

Leaking Underground Storage Tanks (LUST): LUST
The Leaking Underground Storage Tank Incident Tracking (LIT) database identifies the status of all Illinois LUST incidents reported to the Illinois Emergency Management Agency (IEMA) and to the Illinois Environmental Protection Agency.
Government Publication Date: Sep 7, 2015

Underground Storage Tank Fund Payment Priority List: LUST TRUST
In case sufficient funds are not available in the Underground Storage Tank Fund, requests for payment are entered on the Payment Priority List by "queue date" order. As required by the Environmental Protection Act, the queue date is the date that a complete request for partial or final payment was received by the Agency. The queue date is "officially" confirmed at the end of the payment review process when a Final Decision Letter is sent to the site owner. The Underground Storage Tank Fund Priority list made available by Illinois Environmental Protection Agency.
Government Publication Date: Sep 1, 2015

Underground Storage Tank Database (UST): UST
This database maintained by Division of Petroleum & Chemical Safety, contains information derived from tank registration information supplied to the Office of the Illinois State Fire Marshal (OSFM) from outside sources.
Government Publication Date: Sept 14, 2015

Sites with Engineering Controls: ENG CONTROLS
Sites in the Illinois Environmental Protection Agency (IEPA)'s Site Remedition Program (SRP) database with engineering controls in place.
Government Publication Date: Jul 15, 2015

Institutional Controls: INST CONTROL
Sites in the Illinois Environmental Protection Agency (IEPA)'s Site Remedition Program (SRP) database with institutional controls in place.
Government Publication Date: Jul 15, 2015

Illinois Site Remediation Program Database: SRP
The Site Remediation Program (SRP) database identifies the status of all voluntary remediation projects administered through the Pre-Notice Site Cleanup Program (1989 to 1995) and the Site Remediation Program (1996 to the present). This Site Remediation program database made available by Illinois Environmental Protection Agency.
Government Publication Date: Jul 15, 2015

Brownfields Redevelopment Assessment Database: BROWNFIELDS
The Office of Site Evaluations Redevelopment Assessment database identifies the status of all properties within the State in which the Illinois EPA's Office of Site Evaluation has conducted a Municipal Brownfields Redevelopment Grant (MBRG) project.
Government Publication Date: May 12, 2015

Municipal Brownfields Redevelopment Grant Program (MBRGP) project sites administered through OBA: BROWN MBRGP
The Office of Brownfields Assistance (OBA) database identifies the status of all Municipal Brownfields Redevelopment Grant Program (MBRGP) project sites administered through OBA. Office of Brownfields Assistance Database search made available by Illinois Environmental Protection Agency's Bureau of Land Data-Center.
Government Publication Date: Mar 31, 2013

Tribal

Leaking Underground Storage Tanks on Indian Lands: INDIAN LUST
List of Leaking Underground Storage Tanks (LUSTs) on Tribal/Indian Lands in EPA Region 5, which includes Michigan, Minnesota and Wisconsin. There no LUST records in Illinois at this time.

Government Publication Date: Aug 13, 2013

Underground Storage Tanks (USTs) on Indian Lands: INDIAN UST
Underground Storage Tanks (USTs) on Tribal/Indian Lands in EPA Region 5. There are no UST records in Illinois at this time.
Government Publication Date: Aug 13, 2013

County

No County standard environmental record sources available for this State.

Additional Environmental Record Sources

Federal

Facility Registry Service/Facility Index: FINDS/FRS
The US Environmental Protection Agency (EPA)'s Facility Registry System (FRS) is a centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental interest. FRS creates high-quality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from program national systems, state master facility records, data collected from EPA's Central Data Exchange registrations and data management personnel.
Government Publication Date: Sep 24, 2015

Toxics Release Inventory (TRI) Program: TRIS
The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment. One of TRI's primary purposes is to inform communities about toxic chemical releases to the environment.
Government Publication Date: 1987-2013

Hazardous Materials Information Reporting System: HMIRS
US DOT - Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) Incidents Reports Database taken from Hazmat Intelligence Portal, U.S. Department of Transportation.
Government Publication Date: Feb 24, 2015

National Clandestine Drug Labs: NCDL
The U.S. Department of Justice ("the Department") provides this data as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy.
Government Publication Date: Sep 5, 2015

Inventory of Open Dumps, June 1985: ODI
The Resource Conservation and Recovery Act (RCRA of the Act) provides for publication of an inventory of open dumps. The Act defines "open dumps" as facilities which do not comply with EPA's "Criteria for Classification of Solid Waste Disposal Facilities and Practices" (40 CFR 257).
Government Publication Date: Jun 1985

EPA Report on the Status of Open Dumps on Indian Lands: IODI

Public Law 103-399, The Indian Lands Open Dump Cleanup Act of 1994, enacted October 22, 1994, identified ongressional concerns that solid waste open dump sites located on American Indian or Alaska Native (AI/AN) lands threaten the health and safety of residents of those lands and contiguous areas. The purpose of the Act is to identify the location of open dumps on Indian lands, assess the relative health and environment hazards posed by those sites, and provide financial and technical assistance to Indian tribal governments to close such dumps in compliance with Federal standards and regulations or standards promulgated by Indian Tribal governments or Alaska Native entities.

Government Publication Date: Dec 31, 1998

Toxic Substances Control Act: TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.
The CDR enables EPA to collect and publish information on the manufacturing, processing, and use of commercial chemical substances and mixtures (referred to hereafter as chemical substances) on the TSCA Chemical Substance Inventory (TSCA Inventory). This includes current information on chemical substance production volumes, manufacturing sites, and how the chemical substances are used. This information helps the Agency determine whether people or the environment are potentially exposed to reported chemical substances. EPA publishes submitted CDR data that is not Confidential Business Information (CBI).

Government Publication Date: Jun 30, 2014

Hist TSCA: HIST TSCA

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.
The 2006 IUR data summary report includes information about chemicals manufactured or imported in quantities of 25,000 pounds or more at a single site during calendar year 2005. In addition to the basic manufacturing information collected in previous reporting cycles, the 2006 cycle is the first time EPA collected information to characterize exposure during manufacturing, processing and use of organic chemicals. The 2006 cycle also is the first time manufacturers of inorganic chemicals were required to report basic manufacturing information.

Government Publication Date: 2006

State

Spills and Incidences: SPILLS

A list of reports taken by Illinois Emergency Management Agency (IEMA) of Hazardous Material spills in Illinois.

Government Publication Date: Sep 2, 2015

Emergency Response Releases & Spills Database: SPILLS2

The Office of Emergency Response (OER) maintains the Emergency Response Releases & Spills Database.
The Emergency Operations Unit, within OER, coordinates Illinois EPA's response to environmental emergencies involving oil or hazardous materials and ensures that any environmental contamination is cleaned up. EOU works with other response agencies including the Illinois Emergency Management Agency (IEMA), which is the initial contact for responses to an emergency or disaster in Illinois.

Government Publication Date: May 14, 2015

Tribal

No Tribal additional environmental record sources available for this State.

County

No County additional environmental record sources available for this State.

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries". All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and were included as reference.

APPENDIX F

Qualifications

PIONEER ENVIRONMENTAL SERVICES, LLC
700 N Sacramento Blvd. Suite 101
Chicago IL 60612
773.722.9200 Phone - 773.722.9201 Fax
www.pioneerEES.com

BOYD R. RAVELING

TITLE: Vice President - Phase I Manager
Pioneer Environmental Services, LLC

EDUCATION: B.A. Journalism
Columbia College, Chicago, IL

A.A. Liberal Studies
Elgin Community College, Elgin, IL

Engineering
University of Wisconsin, Madison

CERTIFICATIONS: Completed ASTM Site Assessment Training

QUALIFICATIONS:

- Supervision of Phase I Environmental Site Assessment staff for over 15 years. Pioneer's Phase I Group produces several hundred property investigation reports annually. Duties include technical writing/ editing, performance review, employee training, client contact, and final report authorization.

- Conducted in excess of 200 Phase I Environmental Site Assessments, over 20 years of experience, for industrial and commercial properties throughout the United States. Facilities inspected have included large-scale printing operations, distribution facilities, and manufacturing plants. The assessments included on-site surveys, asbestos, lead-based paint (LBP) and polychlorinated biphenyl (PCB) surveys, underground storage tank (UST) investigations, prior use evaluation, and neighborhood hazardous waste activity review.

- Conducted numerous Transaction Screen Process (TSP) studies for residential and light commercial properties throughout the Midwest. These studies also included on-site surveys, asbestos, LBP and PCB surveys, UST investigations, prior use identification, and neighborhood hazardous waste activity review.

- Conducted numerous Asbestos Surveys and pre-demolition asbestos inspections for commercial and multi-unit residential properties. These studies included asbestos identification, sampling, quantification assessments, and abatement cost estimates outlined in detailed reports.

- Assisted in the preparation of numerous Phase II Environmental Site Assessments, including core sampling, field testing, and groundwater monitoring.

- Experienced in wastewater sampling and sanitary district compliance issues. Facilities monitored include plating facilities, metal foundry operations, meat-packing plants, and printing operations.

- Extensive technical writing experience.

PRELIMINARY STORMWATER MANAGEMENT REPORT

FOR

INDUSTRIAL DEVELOPMENT

NE CORNER OF MIDLOTHIAN RD & PETERSON RD
VILLAGE OF LIBERTYVILLE/GRAYSLAKE, ILLINOIS

PREPARED FOR:

BCI ACRYLIC BATH SYSTEMS
1800 INDUSTRIAL DRIVE
LIBERTYVILLE, ILLINOIS 60048

PREPARED BY:

MANHARD CONSULTING
ONE OVERLOOK POINT, SUITE 290
LINCOLNSHIRE, ILLINOIS 60069
PHONE: (847) 634-5550 FAX: (847) 634-0095
MANHARD CONSULTING PROJECT – BCALYIL01

DECEMBER 5, 2025

Manhard CONSULTING LTD

1

NARRATIVE

- INTRODUCTION
- PROJECT SUMMARY
  - SITE UTILITIES
  - SITE ACCESS
- EXISTING CONDITIONS
- PROPOSED CONDITIONS
- DETENTION BASIN DESIGN
  - REQUIRED CONDITIONS
  - DEPRESSIONAL STORAGE
  - PROPOSED CONDITIONS
  - OUTLET CONTROL STRUCTURE & RELEASE RATE
  - EMERGENCY OVERFLOW SPILLWAY
- STORM SEWER SYSTEM
  - STORM SEWER & GRATE CAPACITY SIZING CALCULATIONS
- RUNOFF VOLUME REDUCTION (RVR)
- SOIL EROSION AND SEDIMENT CONTROL
- DRAIN TILE STUDY
- FLOOD PROTECTION AREA
- GROUNDWATER AND GEOTECHNICAL OBSERVATIONS
- WETLAND AND RIPARIAN AREAS
- CONCLUSION

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CALCULATIONS AND EXHIBITS

- PROPOSED DRAINAGE AREA EXHIBIT
- PROPOSED CN CALCULATIONS – PHASE 1
- PROPOSED CN CALCULATIONS – PHASE 1&2
- LAKE COUNTY WDO APPENDIX K
- DEPRESSIONAL STORAGE AREA EXHIBIT
- DEPRESSIONAL STORAGE AREA STAGE STORAGE CALCULATIONS
- DETENTION BASIN STAGE STORAGE CALCULATIONS

3

MAPS

- NRCS SOIL MAP
- FEMA FIRMETTE
- NWI MAP

4

GEOTECHNICAL REPORT

- GEOTECHNICAL REPORT – BY APPLIED GEOSCIENCE, INC. (DATED 12-29-2022)

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WETLAND REPORT

- WETLAND DELINEATION REPORT – BY HEY AND ASSOCIATES, INC. (DATED 09-02-2022)

Manhard CONSULTING LTD

APPENDIX 1

INTRODUCTION

The proposed Industrial Development project is a 46.26 acre property that consists of an industrial building, detention basins, a roadway, and parking lots. The site is located at the northeast corner of Harris Road and Peterson Road in Libertyville, Lake County, Illinois. The site is bound by Peterson Road on the southern property line, Harris Road on the western property line, and Wisconsin Central Railroad on the east property line. The Harris Road right-of-way will be modified, and a new roadway will be constructed with the onsite improvements. The purpose of this report is to demonstrate that the proposed stormwater design associated with the development meets the requirements of the Village of Libertyville and Lake County Watershed Development Ordinance.

PROJECT SUMMARY

The project consists of the development of farmed agricultural land into an industrial development. The proposed facility is approximately 600,000 SF with included office areas. The proposed storm water facility consists of four detention basins located around the perimeter of the site along the northern and eastern areas of the property along with associated storm sewer. The basins will release into one another toward the southeastern basin with the ultimate release point at the southeast corner of the property along the north right-of-way of Peterson Road.

SITE UTILITIES

The proposed development will require the extension of the existing sanitary sewer and water main of both the Village of Libertyville and the Village of Grayslake infrastructure along with the sanitary and water services for the buildings.

Sanitary: Sanitary sewer serving the industrial building will connect to an existing 8" main approximately 20' to the east of Franklin Road along the southern right-of-way of Peterson Road. The extensions of the public sanitary sewer will require the sewer to be auger and jacked underneath Peterson where necessary to cross the roads.

Water Main: Water main serving the industrial building will connect to the existing 12" main approximately 10' west of Franklin Road along the southern right-of-way of Peterson Road and connect to the existing 12" main approximately 10' east of Harris Road in the Harris Road right-of-way south of Peterson Road. The extensions of the public water main will require the pipes to be auger and jacked underneath Peterson Road where necessary to cross the roads.

Water main and sanitary sewer connections will require permitting through the IEPA, Village of Libertyville, Lake County Public Works Department, and Lake County Department of Transportation.

A JAWA transmission main exists along the west side of the Harris Road right-of-way as well as a few Nicor high pressure gas mains located on the east and west sides of the Harris Road right-of-way and along the east property line that all extend through the site from south to north. Permitting for crossing these utilities is anticipated in addition to the agencies and municipalities listed above.

SITE ACCESS

The site configuration of the development will have two access points to access the industrial development. An existing full access located at the intersection of Harris Road and Peterson Road will be utilized with some small geometric changes to align the site access at the north end of the intersection with the existing Harris Road to the south. A proposed full access will be located at the southeast corner of the site that connects to the north side of the intersection of Franklin Boulevard and Peterson Road.

Provisions for right-of-way dedications have been included in the master plan of the site in coordination with the Village of Libertyville and Lake County Department of Transportation (LCDOT). Ongoing traffic impact studies and LCDOT roadway modifications may be require revisions to the number and location of access points may be required.

EXISTING CONDITIONS

The existing property consists of agricultural farmland. Based on topographic survey, stormwater runoff generally flows from west to east across the property. There is a general high point located on the center of the site that splits the drainage radially away from the middle, but the drainage still eventually leads to the eastern property line. Runoff on the northwest side of the property flows to a depressional area which fills up and overflows to the northeast to a swale located on the west side of the Wisconsin Central Railroad which then flows south toward the southeast corner of the property. Runoff on the north and east sides of the site flow directly to the east into a swale located on the west side of the Wisconsin Central Railroad which then flows south toward the southeast corner of the property. Runoff on the south side of the site, flows to the south into a swale in the north right-of-way of Peterson Road which drains to a small depressional area and then overflows to the southeast corner of the property.

There are offsite flows that come from the northwest of the site from a culvert that crosses underneath Midlothian Road. Three interconnecting basins west of Midlothian Road that serve the Lake County Fairgrounds Development discharge into a ditch along the west right-of-way of Midlothian Road that then flow through the culvert underneath the road onto the project site.

PROPOSED CONDITIONS

Proposed drainage patterns for the property generally flow from south to north through storm sewer and swales to any of the four detention basins onsite. Approximately 44.08 acres will be disturbed for the development. These four interconnected detention basins, located along the northern, southern, and eastern property lines are proposed to serve as the stormwater management facility for the development and are delineated as Basin A, Basin A1, Basin B, and Basin C.

DETENTION BASIN DESIGN

REQUIRED CONDITIONS

The required storage volume for the proposed condition was estimated using the Lake County Watershed Development Ordinance Appendix K – Detention Volume vs Curve Number with a 100-year release rate of 0.15 cfs/ac. By using Appendix K, the required storage volume for the onsite area yielded 21.4 ac-ft. The approximate required storage volume for the anticipated full buildout site plan is approximately 30.7 ac-ft. Refer to Appendix 2 for calculations and drainage area exhibits.

DEPRESSIONAL STORAGE

There are two separate depressional storage areas that are located within the property limits. These areas are located in the northwest corner and southeast corner of the property. The total depressional storage area volume was approximated using topographic survey information and is estimated to be 4.01 ac-ft. The total depressional storage volume that would be impacted by the anticipated full buildout site plan would be 6.20 ac-ft. These depressional storage areas are to be eliminated in the proposed master grading plan and will require the volume to be replaced within the proposed detention basins. The total combined required detention volume and depressional storage area volume will be approximately 25.41 ac-ft. The total combined required detention for the anticipated full buildout site plan would approximately be 36.90 ac-ft. Refer to Appendix 2 for stage storage calculations and approximate limits of the depressional storage area.

PROPOSED CONDITIONS

Basins A-C are designed to provide 39.07 ac-ft in total among the four basins. The provided volume has been conservatively designed to account for all onsite impervious area as well as future building additions and adjacent developments to be implemented in Phase 2 that may be tributary to the stormwater facility. Refer to Appendix 2 for stage storage calculations for the basin detention volumes.

Outlet Control Structure & Release Rate

The stormwater facility will have 3 outlet control structures. The structures are located at the outfalls of Basins A, B, and C. The outlet control structure for Basin C will be over restricted to take advantage of the large amount of detention volume. This will allow for the outlet control structures for Basins A and B to increase in release rate while still maintaining the overall maximum allowable 100-year release rate for the site. The outlet control structure for basin C discharges into basin B via underground sewer. The outlet control structure for basin B discharges into basin A via underground sewer. The outlet control structure for basin A discharges into the existing ditch along the west side of the railroad at the southeast corner of the site.

Emergency Overflow Spillway

The emergency overflow route for each of the detention basins will mostly discharge to separate locations across the site. The emergency overflow route for Basin C will flow to the existing ditch along the west side of the railroad. The emergency overflow route for the detention basins in the east watershed will flow from Basins B and A1 overland across access drives and grass swales into Basin A.

The ultimate overflow weir for the development is located at Basin A in the southeast corner of the property and overflows into the north right-of-way of Peterson Road which then flows to the east to a culvert in the existing swale adjacent to the Wisconsin Central Railroad to pass underneath Peterson Road. There is also an overflow weir located on the south side of Basin A1 to add to the ultimate overflow capacity in conjunction with Basin A. This weir will overflow into the north right-of-way of Peterson Road.

Storm Sewer System

Storm Sewer & Grate Capacity Sizing Calculations

Proposed storm sewers and grate capacities are generally sized to convey 10-year storm events utilizing Bulletin 75 rainfall data. Due to site constraints in scenarios where the overland flow route for the 100-year storm event cannot be maintained, the 100-year flows will need to be conveyed through storm sewer and the pipes and grate capacities will be sized accordingly.

Runoff Volume Reduction (RVR)

RVR volume requirements will be provided in detention basins with the incorporation of native wetland plantings along with the utilization of grass swales to convey storm water flow wherever practical. Per the Lake County Watershed Development Ordinance (LCWDO), the required RVR volume shall be equal to

one inch over the impervious surface. The required volume per LCWDO is 2.05 ac-ft for the phase 1 improvements and approximately 3.46 ac-ft for the anticipated full buildout site plan. The required volume will be provided within the 1' below the outfalls of Basins A, B, and C.

SOIL EROSION AND SEDIMENT CONTROL

The proposed development disturbs approximately 44.08 acres which will require an NPDES permit from the IEPA Division of Water Pollution Control. A Notice of Intent (NOI) signed by the property developer will be submitted to the IEPA with associated fees. The NPDES permit shall be obtained prior to any land disturbance. Also, as required by the LCWDO, a Designated Erosion Control Inspector (DECI) will be required to ensure the site complies with the approved soil erosion and sediment control (SESC) plan measures of the development. A preliminary SESC plan has been provided in the preliminary civil plans.

DRAIN TILE STUDY

A drain tile study will be provided during Final Engineering.

FLOOD PROTECTION AREA

Per FEMA firm panel 17097C0142K and 17097C0134K effective 9/18/2013, no floodplain exists within the development site. The National Flood Hazard Layer FIRMette is attached in Appendix 3.

GROUNDWATER AND GEOTECHNICAL OBSERVATIONS

A geotechnical report has been completed by Applied Geoscience, Inc. dated December 29, 2022. Geotechnical report for the site is attached in Appendix 4. An NRCS soil map is attached and located in Appendix 3.

WETLAND AND RIPARIAN AREAS

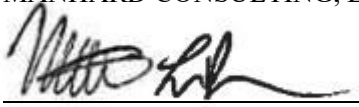
Per the National Wetlands Inventory map, no wetlands were found located on the site. A wetland delineation report was performed by Hey and Associates, Inc. dated September 2nd, 2022, and found no wetlands to be observed or delineated on the project site. NWI Map is attached in Appendix 3. Wetland delineation report is attached in Appendix 5.

CONCLUSION

In summary, we believe the stormwater management design for the proposed development complies with the appropriate provisions of the Village of Libertyville and Lake County Watershed Development Ordinance. If you have any questions, comments, or concerns regarding the content of this report, please do not hesitate to email at mlebeau@manhard.com or call at (847) 325-7024.

Sincerely,

MANHARD CONSULTING, LTD.



Matthew Le Beau, P.E.
Project Engineer

Manhard
CONSULTING LTD

APPENDIX 2

WEST TRIBUTARY AREA PHASE 2
TOTAL AREA: 16.93 AC
IMPERVIOUS AREA: 12.32 AC
PERVIOUS AREA: 4.61 AC
CN: 93.10

EAST TRIBUTARY AREA PHASE 1
TOTAL AREA: 44.08 AC
IMPERVIOUS AREA: 24.79 AC
PERVIOUS AREA: 19.29 AC
CN: 90.12

EAST TRIBUTARY AREA PHASE 1&2
TOTAL AREA: 44.08 AC
IMPERVIOUS AREA: 27.63 AC
PERVIOUS AREA: 16.45 AC
CN: 91.28

N

0 60 120 240
SCALE: 1"=120'

LEGEND
- IMPERVIOUS AREA: PHASE 1
- IMPERVIOUS AREA: PHASE 2
- PERVIOUS AREA:
- TRIBUTARY AREA

DETENTION BASIN C
HWL=807.50
NWL=800.00

MIDLOTHIAN ROAD

WISCONSIN CENTRAL RAILROAD

BOILER ROOM

COMPACTOR

LOT NO. 1

PROPOSED FACILITY NO. 1
:596,165 S.F.
FF=810.50
GF=810.00
DOCK=808.50

20' EXTERIOR DOCKS

27' EXTERIOR DOCKS

PATIO

OFFICE W/BATHROOMS
36,457 S.F.
(2 STORIES)

RELOCATE EXISTING HYDRANT

LOT NO. 3

PROPOSED FACILITY NO. 3
:262,800 S.F.
FF=817.00
GF=816.50
DOCK=813.00

DETENTION BASIN B
HWL=798.50
NWL=794.00

PROPOSED FACILITY NO. 2
:48,100 S.F.
FF=800.30
GF=799.80
DOCK=796.30

DETENTION BASIN A
HWL=793.00
NWL=790.00

DETENTION BASIN A1
HWL=793.00
NWL=790.00

PETERSON ROAD

PETERSON ROAD

DRAWN BY
REVISIONS
DATE

Manhard CONSULTING
One Overlook Point, Suite 250, Lincolnshire, IL 60069
Civil Engineers • Surveyors • Water Resource Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners
847.634.0066 main
847.634.5500 fax
manhard.com

BATH CONCEPTS
VILLAGE OF LIBERTYVILLE/GRAYSLAKE, ILLINOIS
PROPOSED DRAINAGE AREA EXHIBIT

PROJ. MGR.: JSP
PROJ. ASSOC.: MSL
DRAWN BY: MSL
DATE: 12-05-25
SCALE: 1"=120'

SHEET
EXH
BCA.LYIL01

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December 2, 2025 - 10:09 Dwg Name: P:\Bca\V01\dwg\&Storm\Water\Exhibits\Proposed Drainage Exhibit ALT.dwg Updated By: MLeBeau

COMPOSITE RUNOFF CURVE NUMBER (*CN*)

PROJECT: Bath Concepts **PROJECT NUMBER:** BCA.LYIL01

LOCATION: Libertyville - East Phase 1 **DATE:** 12/5/2025

TYPE OF AREA (SELECT WITH DROP-DOWN)

- **X** DETAINED AREA
- ___ UNRESTRICTED AREA
- ___ UPSTREAM AREA
- ___ MAJOR STORMWATER SYSTEM
- ___ OTHER: _____

CONDITION (SELECT WITH DROP-DOWN)

- **X** PROPOSED CONDITION
- ___ EXISTING CONDITION

RUNOFF CURVE NUMBER

Surface Description	Hydrologic Soil Group (HSG)	CN	Area (acres)	Product (CN)(Area)
Impervious Area	D	98	24.79	2429.42
Pervious Area	D	80	19.29	1543.20
TOTALS:			44.08	3972.62

COMPOSITE RUNOFF CURVE NUMBER

$$\text{Composite CN} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{3972.62}{44.08} \rightarrow \textbf{Composite CN} = \textbf{90.12}$$

COMPOSITE RUNOFF CURVE NUMBER (*CN*)

PROJECT: Bath Concepts **PROJECT NUMBER:** BCA.LYIL01

LOCATION: Libertyville - Full Development **DATE:** 12/5/2025

TYPE OF AREA (SELECT WITH DROP-DOWN)

- [X] DETAINED AREA
- [ ] UNRESTRICTED AREA
- [ ] UPSTREAM AREA
- [ ] MAJOR STORMWATER SYSTEM
- [ ] OTHER:

CONDITION (SELECT WITH DROP-DOWN)

- [X] PROPOSED CONDITION
- [ ] EXISTING CONDITION

RUNOFF CURVE NUMBER

Surface Description	Hydrologic Soil Group (HSG)	CN	Area (acres)	Product (CN)(Area)
Impervious Area	C	98	39.95	3915.10
Pervious Area	C	80	21.06	1684.80
TOTALS:			61.01	5599.90

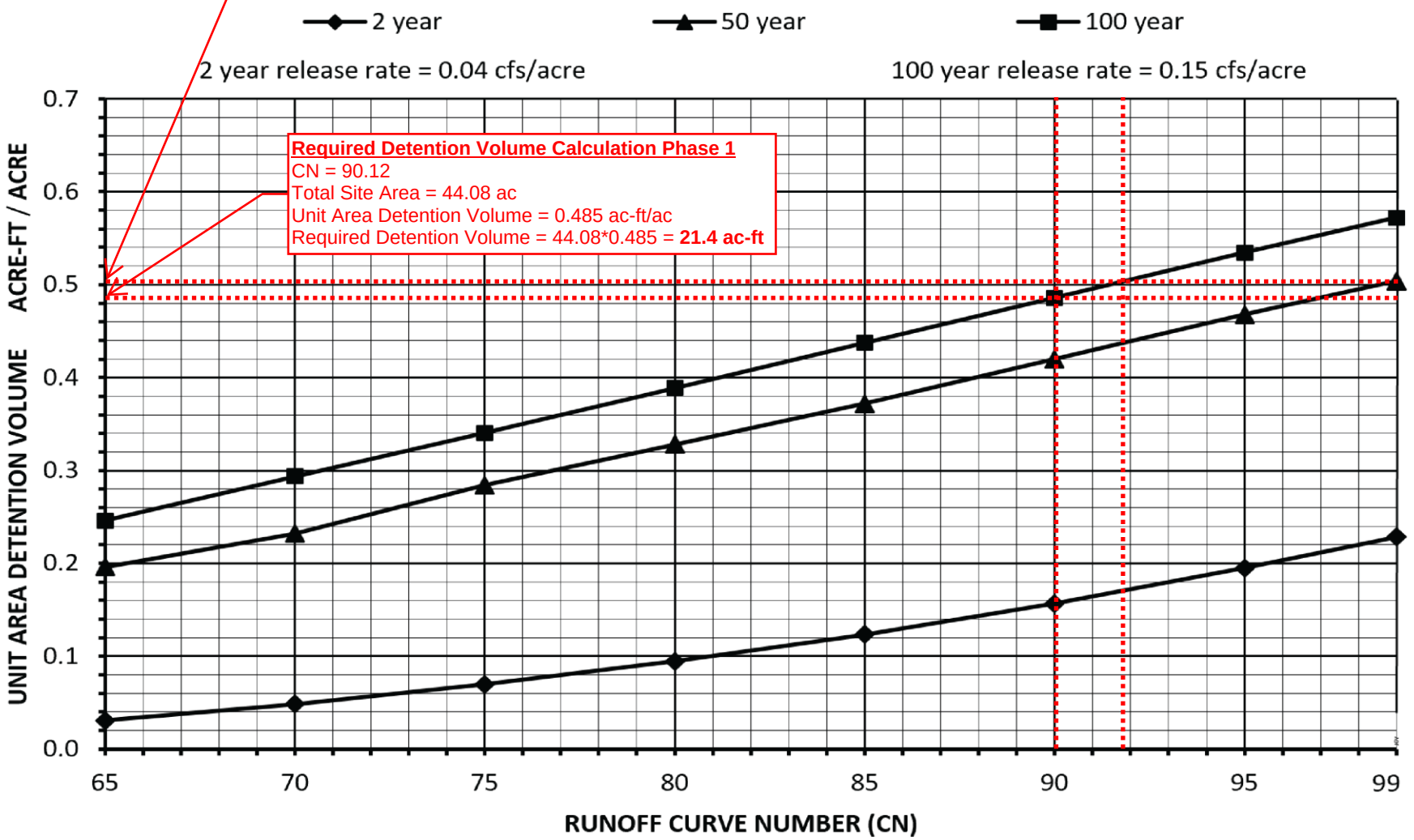
COMPOSITE RUNOFF CURVE NUMBER

$$\text{Composite CN} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{5599.90}{61.01} \rightarrow \textbf{Composite CN} = \textbf{91.79}$$

Appendix K: Detention Volume Versus Curve Number

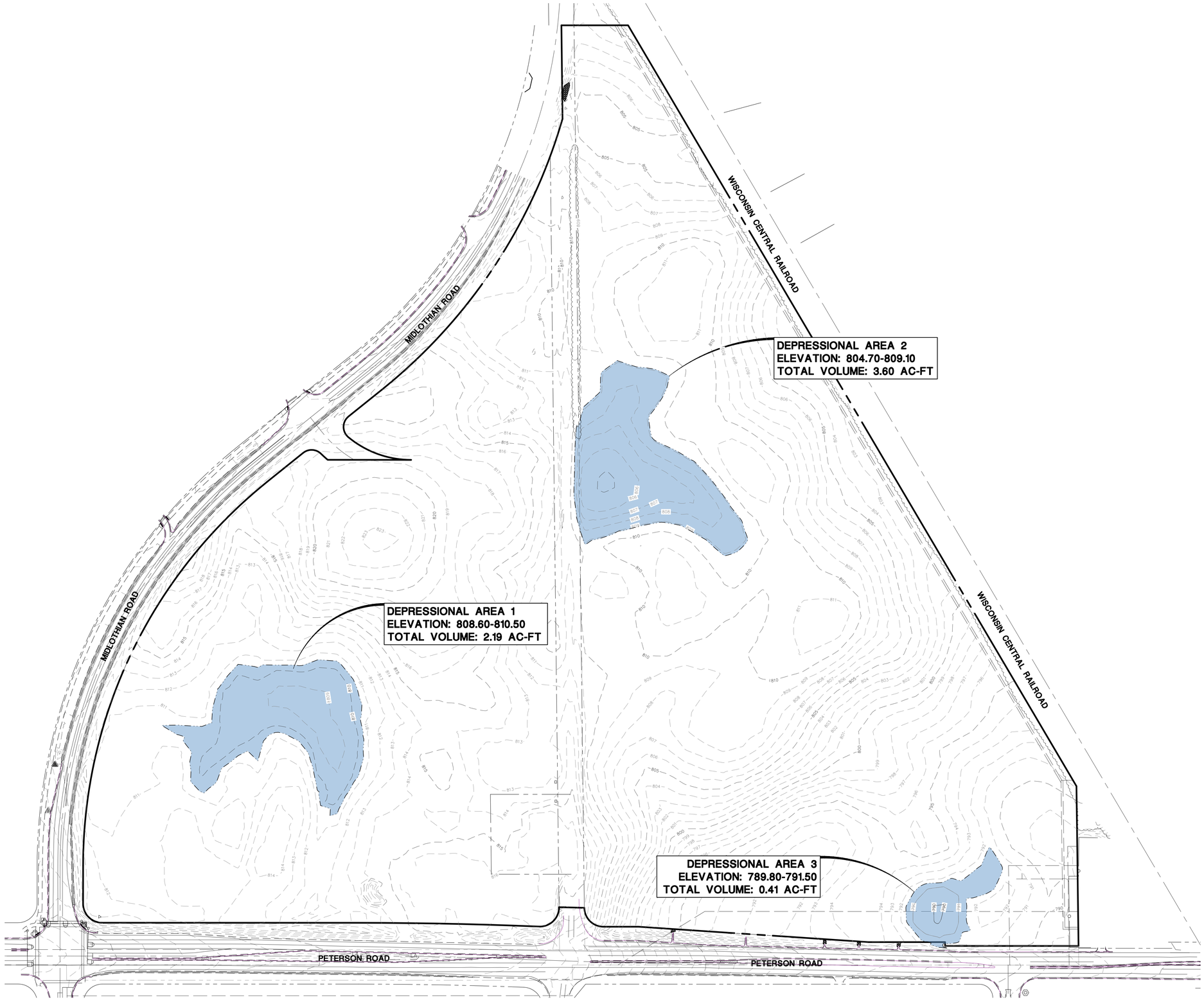
Required Detention Volume Calculation Phase 1&2
CN = 91.79
Total Site Area = 61.01 ac
Unit Area Detention Volume = 0.503 ac-ft/ac
Required Detention Volume = 61.01*0.503 = **30.7 ac-ft**

Required Detention Volume Calculation Phase 1
CN = 90.12
Total Site Area = 44.08 ac
Unit Area Detention Volume = 0.485 ac-ft/ac
Required Detention Volume = 44.08*0.485 = **21.4 ac-ft**



CN Estimate Phase 1:
total site area = 44.08 ac
impervious area = 24.79 ac
pervious area = 19.29 ac
CN=90.12

CN Estimate Phase 1&2:
total site area = 61.01 ac
impervious area = 39.95 ac
pervious area = 21.06 ac
CN=91.79



N

0 60 120 240

SCALE: 1"=120'

LEGEND

DEPRESSIONAL STORAGE AREA

DRAWN BY

REVISIONS

DATE

Manhard CONSULTING
One Overlook Point, Suite 250, Lincolnshire, IL 60069 p:847.634.5500 f:847.634.0066 manhard.com
Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

INDUSTRIAL DEVELOPMENT

VILLAGE OF LIBERTYVILLE/GRAYSLAKE, ILLINOIS

DEPRESSIONAL STORAGE AREA EXHIBIT

PROJ. MGR.:	JSP
PROJ. ASSOC.:	MSL
DRAWN BY:	MSL
DATE:	01/10/25
SCALE:	1"=120'

SHEET

EXH

BCA.LYIL01

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December 2, 2025 - 11:26 Dwg Name: P:\Bca\v01\dwg\StormWater\Exhibits\Depressional Storage Area Exhibit.dwg Updated By: MLoBeau

DEPRESSIONAL STORAGE AREA
STAGE STORAGE CALCULATIONS
LIBERTYVILLE, ILLINOIS
December 5, 2025

Depressional Area 1

	Stage	ΔElev.	Area (ft^2)	Area (ac.)	Avg. Area (ac.)	$Storage_i$ (ac-ft)	$\sum Storage_i$ (ac-ft)
NWL	808.60	0.00	0	**0.00**	-	-	0.00
	809.00	0.40	18,163	**0.42**	0.21	0.08	0.08
	810.00	1.00	73,694	**1.69**	1.05	1.05	1.14
	810.50	0.50	109,916	**2.52**	2.11	1.05	2.19

Depressional Area 2

Stage	ΔElev.	Area (ft^2)	Area (ac.)	Avg. Area (ac.)	$Storage_i$ (ac-ft)	$\sum Storage_i$ (ac-ft)
804.70	0.00	0	**0.00**	-	-	0.00
805.00	0.30	1,819	**0.04**	0.02	0.01	0.01
806.00	1.00	18,812	**0.43**	0.24	0.24	0.24
807.00	1.00	43,191	**0.99**	0.71	0.71	0.95
808.00	1.00	74,202	**1.70**	0.87	0.87	1.83
809.00	1.00	119,022	**2.73**	1.58	1.58	3.41
809.10	0.10	124,043	**2.85**	1.92	0.19	3.60

Depressional Area 3

Stage	ΔElev.	Area (ft^2)	Area (ac.)	Avg. Area (ac.)	$Storage_i$ (ac-ft)	$\sum Storage_i$ (ac-ft)
789.80	0.00	0	**0.00**	-	-	0.00
790.00	0.20	1,010	**0.02**	0.01	0.00	0.00
791.00	1.00	12,797	**0.29**	0.16	0.16	0.16
791.50	0.50	29,931	**0.69**	0.49	0.25	0.41

DETENTION BASIN
STAGE STORAGE CALCULATIONS
LIBERTYVILLE, ILLINOIS
December 5, 2025

Detention Basin A

	Stage	ΔElev.	Area (ft^2)	Area (ac.)	Avg. Area (ac.)	$Storage_i$ (ac-ft)	$\sum Storage_i$ (ac-ft)
NWL	790.00	0.00	17,996	**0.41**	-	-	0.00
	791.00	1.00	21,247	**0.49**	0.45	0.45	0.45
	792.00	1.00	24,677	**0.57**	0.53	0.53	0.98
HWL	793.00	1.00	28,129	**0.65**	0.61	0.61	1.58

Detention Basin B

	Stage	ΔElev.	Area (ft^2)	Area (ac.)	Avg. Area (ac.)	$Storage_i$ (ac-ft)	$\sum Storage_i$ (ac-ft)
NWL	794.00	0.00	34,149	**0.78**	-	-	0.00
	795.00	1.00	37,823	**0.87**	0.83	0.83	0.83
	796.00	1.00	41,598	**0.95**	0.91	0.91	1.74
	797.00	1.00	45,743	**1.05**	1.00	1.00	2.74
	798.00	1.00	49,449	**1.14**	1.09	1.09	3.83
HWL	798.50	0.50	52,640	**1.21**	1.17	0.59	4.42

Detention Basin C

	Stage	ΔElev.	Area (ft^2)	Area (ac.)	Avg. Area (ac.)	$Storage_i$ (ac-ft)	$\sum Storage_i$ (ac-ft)
NWL	799.50	0.00	172,807	**3.97**	-	-	0.00
	800.00	0.50	180,117	**4.13**	4.05	2.03	2.03
	801.00	1.00	187,527	**4.31**	4.22	4.22	6.25
	802.00	1.00	195,038	**4.48**	4.39	4.39	10.64
	803.00	1.00	202,650	**4.65**	4.56	4.56	15.20
	804.00	1.00	210,362	**4.83**	4.74	4.74	19.94
	805.00	1.00	218,174	**5.01**	4.92	4.92	24.86
	806.00	1.00	226,087	**5.19**	5.10	5.10	29.96
HWL	806.50	0.50	230,081	**5.28**	5.24	2.62	32.58

Detention Basin A1

	Stage	ΔElev.	Area (ft^2)	Area (ac.)	Avg. Area (ac.)	$Storage_i$ (ac-ft)	$\sum Storage_i$ (ac-ft)
NWL	790.00	0.00	3,378	**0.08**	-	-	0.00
	791.00	1.00	5,876	**0.13**	0.11	0.11	0.11
	792.00	1.00	8,335	**0.19**	0.16	0.16	0.27
HWL	793.00	1.00	10,894	**0.25**	0.22	0.22	0.49

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APPENDIX 3

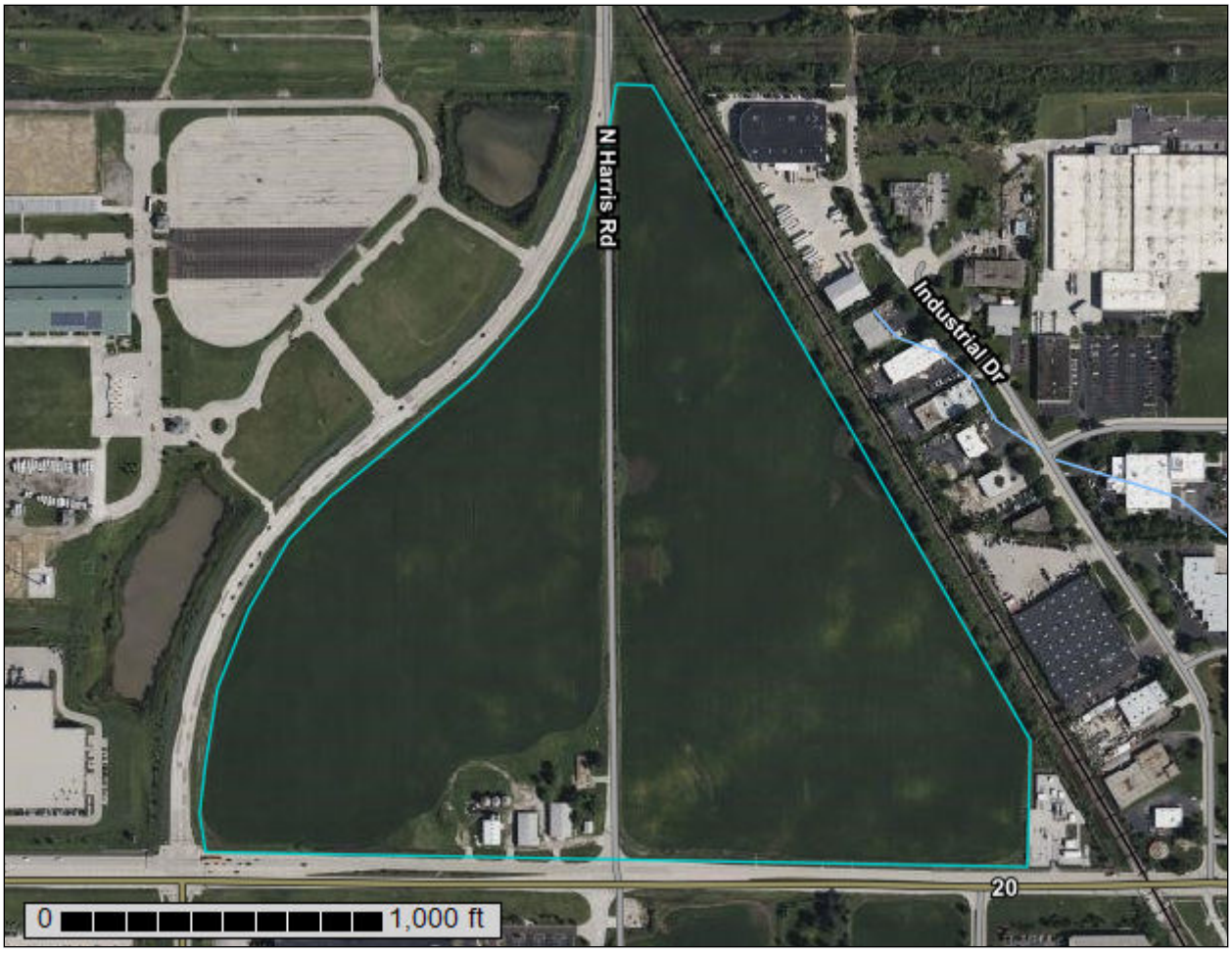
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Lake County, Illinois



January 10, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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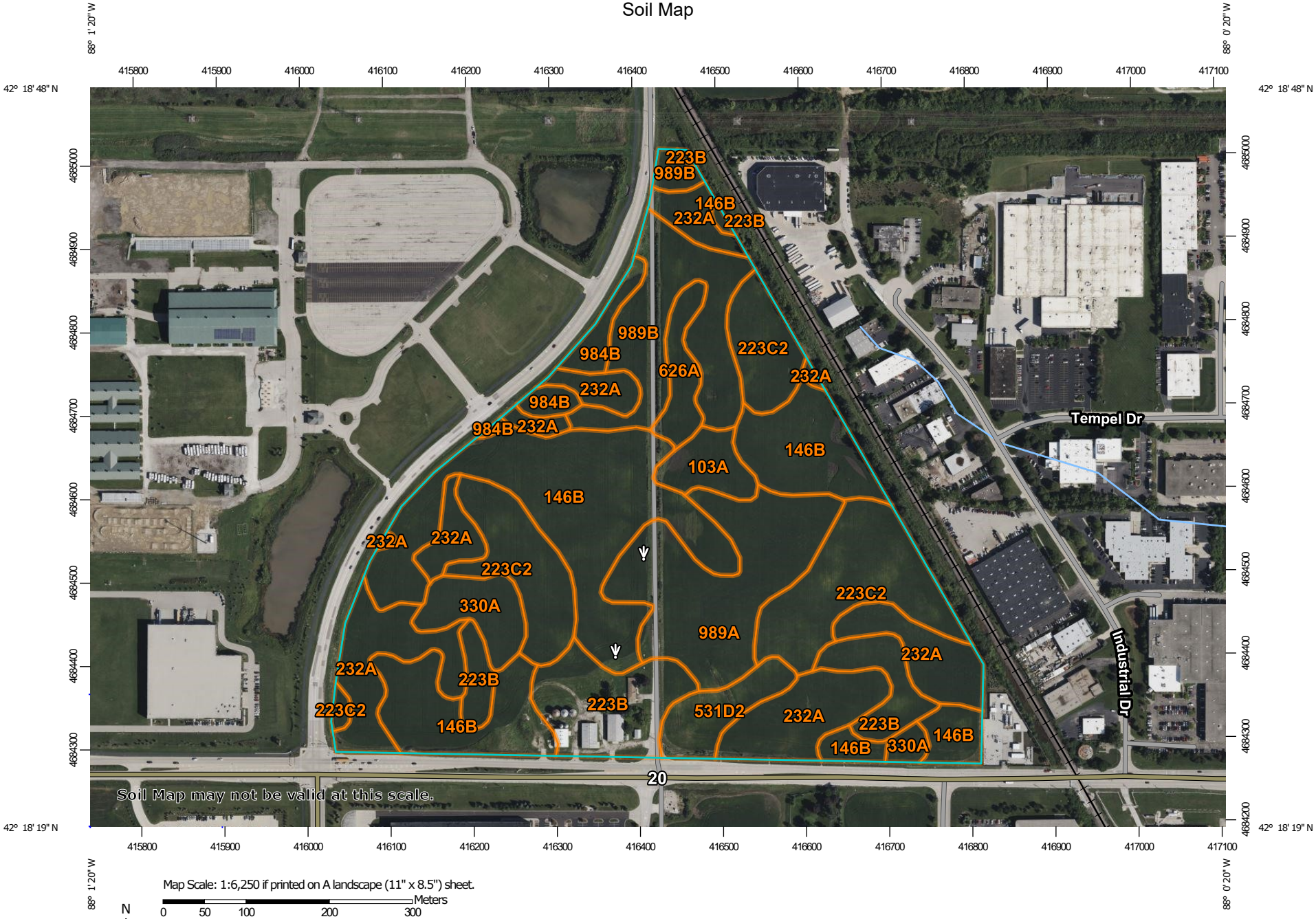
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



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 1:12,000.

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: Lake County, Illinois
Survey Area Data: Version 19, Aug 21, 2024

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

Date(s) aerial images were photographed: Aug 19, 2022—Sep 30, 2022

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
103A	Houghton muck, 0 to 2 percent slopes	1.7	2.1%
146B	Elliott silt loam, 2 to 4 percent slopes	22.3	27.0%
223B	Varna silt loam, 2 to 4 percent slopes	7.8	9.4%
223C2	Varna silt loam, 4 to 6 percent slopes, eroded	12.9	15.6%
232A	Ashkum silty clay loam, 0 to 2 percent slopes	13.6	16.5%
330A	Peotone silty clay loam, 0 to 2 percent slopes	2.7	3.3%
531D2	Markham silt loam, 6 to 12 percent slopes, eroded	2.2	2.7%
626A	Kish loam, 0 to 2 percent slopes	1.7	2.0%
984B	Barrington and Varna silt loams, 2 to 4 percent slopes	1.6	1.9%
989A	Mundelein and Elliott silt loams, 0 to 2 percent slopes	9.0	10.9%
989B	Mundelein and Elliott silt loams, 2 to 4 percent slopes	7.1	8.6%
Totals for Area of Interest		**82.6**	**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 was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Lake County, Illinois

103A—Houghton muck, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: p8zk
Elevation: 500 to 1,020 feet
Mean annual precipitation: 30 to 40 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Houghton and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houghton

Setting

Landform: Depressions on ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous organic material

Typical profile

Oap - 0 to 11 inches: muck
Oa - 11 to 60 inches: muck

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow, R110XY020IL - Ponded Organic Acidic Peatland, R110XY021IL - Ponded Organic Alkaline Peatland
Hydric soil rating: Yes

Minor Components

Selma

Percent of map unit: 4 percent

Landform: Drainageways on ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow
Hydric soil rating: Yes

Hooppole

Percent of map unit: 3 percent
Landform: Swales on ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R110XY015IL - Wet Sand Prairie
Hydric soil rating: Yes

Lena

Percent of map unit: 3 percent
Landform: Depressions on ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow, R108XA001IL - Organic Sedge Meadow, R110XY021IL - Ponded Organic Alkaline Peatland
Hydric soil rating: Yes

146B—Elliott silt loam, 2 to 4 percent slopes

Map Unit Setting

National map unit symbol: 2sss1
Elevation: 570 to 930 feet
Mean annual precipitation: 33 to 42 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 150 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Elliott and similar soils: 94 percent
Minor components: 6 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Elliott

Setting

Landform: Ground moraines, till plains
Landform position (two-dimensional): Summit, backslope

Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Thin mantle of loess or other silty material over silty clay loam till

Typical profile

Ap - 0 to 9 inches: silt loam
A - 9 to 13 inches: silty clay loam
2Bt1 - 13 to 17 inches: silty clay
2Bt2 - 17 to 35 inches: silty clay loam
2Cd - 35 to 60 inches: silty clay loam

Properties and qualities

Slope: 2 to 4 percent
Depth to restrictive feature: 25 to 39 inches to densic material
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Ecological site: R110XY007IL - Moist Glacial Drift Upland Prairie
Hydric soil rating: No

Minor Components

Ashkum, drained

Percent of map unit: 4 percent
Landform: Ground moraines, till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow
Hydric soil rating: Yes

Orthents, clayey

Percent of map unit: 1 percent
Landform: Ground moraines, till plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F095XB010WI - Loamy and Clayey Upland
Hydric soil rating: No

Urban land

Percent of map unit: 1 percent

Landform: Ground moraines
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

223B—Varna silt loam, 2 to 4 percent slopes

Map Unit Setting

National map unit symbol: 2yrqt
Elevation: 520 to 950 feet
Mean annual precipitation: 34 to 41 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 140 to 185 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Varna and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Varna

Setting

Landform: Ground moraines, end moraines
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess over silty clay loam or clay loam till

Typical profile

Ap - 0 to 12 inches: silt loam
2Bt1 - 12 to 30 inches: silty clay loam
2Bt2 - 30 to 48 inches: silty clay loam
2Cd - 48 to 60 inches: silty clay loam

Properties and qualities

Slope: 2 to 4 percent
Depth to restrictive feature: 24 to 55 inches to densic material
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: R110XY007IL - Moist Glacial Drift Upland Prairie, R108XA006IL - Loess Upland Prairie
Hydric soil rating: No

Minor Components

Ashkum, drained

Percent of map unit: 4 percent
Landform: Ground moraines, end moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow
Hydric soil rating: Yes

Orthents, clayey

Percent of map unit: 3 percent
Landform: Ground moraines
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F095XB010WI - Loamy and Clayey Upland
Hydric soil rating: No

Urban land

Percent of map unit: 3 percent
Landform: Ground moraines
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

223C2—Varna silt loam, 4 to 6 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2yrqw
Elevation: 520 to 950 feet
Mean annual precipitation: 34 to 42 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 140 to 185 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Varna, eroded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Varna, Eroded

Setting

Landform: Ground moraines, end moraines
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess over silty clay loam or clay loam till

Typical profile

Ap - 0 to 9 inches: silt loam
2Bt1 - 9 to 30 inches: silty clay loam
2Bt2 - 30 to 48 inches: silty clay loam
2Cd - 48 to 60 inches: silty clay loam

Properties and qualities

Slope: 4 to 6 percent
Depth to restrictive feature: 24 to 55 inches to densic material
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R110XY007IL - Moist Glacial Drift Upland Prairie, R108XA006IL - Loess Upland Prairie
Hydric soil rating: No

Minor Components

Ashkum, drained

Percent of map unit: 6 percent
Landform: Ground moraines, end moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow
Hydric soil rating: Yes

Orthents, clayey

Percent of map unit: 2 percent
Landform: Ground moraines
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F095XB010WI - Loamy and Clayey Upland
Hydric soil rating: No

Urban land

Percent of map unit: 2 percent
Landform: Ground moraines
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

232A—Ashkum silty clay loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2ssrw
Elevation: 520 to 930 feet
Mean annual precipitation: 33 to 41 inches
Mean annual air temperature: 46 to 54 degrees F
Frost-free period: 160 to 190 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Ashkum, drained, and similar soils: 92 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ashkum, Drained

Setting

Landform: Ground moraines, end moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Clayey colluvium over till

Typical profile

Ap - 0 to 12 inches: silty clay loam
Bg1 - 12 to 29 inches: silty clay
2Bg2 - 29 to 54 inches: silty clay loam
2Cg - 54 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 25 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow
Forage suitability group: High AWC, high water table (G095BY007WI)
Other vegetative classification: High AWC, high water table (G095BY007WI)
Hydric soil rating: Yes

Minor Components

Peotone, drained

Percent of map unit: 5 percent
Landform: Depressions on ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow
Other vegetative classification: High AWC, high water table (G095BY007WI)
Hydric soil rating: Yes

Orthents, clayey

Percent of map unit: 2 percent
Landform: Ground moraines, lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F095XB010WI - Loamy and Clayey Upland
Hydric soil rating: No

Urban land

Percent of map unit: 1 percent
Landform: Ground moraines
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

330A—Peotone silty clay loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2sn05
Elevation: 500 to 1,020 feet
Mean annual precipitation: 33 to 43 inches
Mean annual air temperature: 46 to 55 degrees F
Frost-free period: 140 to 195 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Peotone, drained, and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Peotone, Drained

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Silty and clayey colluvium

Typical profile

Ap - 0 to 7 inches: silty clay loam
Bg1 - 7 to 27 inches: silty clay loam
Bg2 - 27 to 50 inches: silty clay
Cg - 50 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow

Hydric soil rating: Yes

Minor Components

Peotone, long duration ponding

Percent of map unit: 5 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F095XB004WI - Wet Loamy or Clayey Lowland
Hydric soil rating: Yes

531D2—Markham silt loam, 6 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2ytpy
Elevation: 660 to 920 feet
Mean annual precipitation: 33 to 41 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 155 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Markham, eroded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Markham, Eroded

Setting

Landform: Ground moraines, end moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over silty clay loam till

Typical profile

Ap - 0 to 8 inches: silt loam
2Bt1 - 8 to 21 inches: silty clay loam
2Bt2 - 21 to 32 inches: silty clay loam
2Cd - 32 to 60 inches: silty clay loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: 20 to 55 inches to densic material
Drainage class: Moderately well drained
Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: R110XY010IL - Moist Glacial Drift Upland Savanna
Forage suitability group: High AWC, adequately drained (G095BY008WI)
Other vegetative classification: High AWC, adequately drained (G095BY008WI)
Hydric soil rating: No

Minor Components

Ashkum, drained

Percent of map unit: 6 percent
Landform: Ground moraines, end moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R110XY024IL - Ponded Depressional Sedge Meadow
Hydric soil rating: Yes

Urban land

Percent of map unit: 2 percent
Landform: Ground moraines
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Orthents, clayey

Percent of map unit: 2 percent
Landform: Ground moraines
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F095XB010WI - Loamy and Clayey Upland
Hydric soil rating: No

626A—Kish loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: v41s
Elevation: 510 to 1,020 feet
Mean annual precipitation: 30 to 40 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 140 to 180 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Kish and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kish

Setting

Landform: Outwash plains, ground moraines, stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous outwash

Typical profile

H1 - 0 to 11 inches: loam
H2 - 11 to 47 inches: loam
H3 - 47 to 60 inches: stratified sandy loam to silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F095XB004WI - Wet Loamy or Clayey Lowland
Hydric soil rating: Yes

Minor Components

Pella

Percent of map unit: 5 percent
Landform: Outwash plains, ground moraines, lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R110XY008IL - Wet Glacial Drift Upland Prairie
Hydric soil rating: Yes

Selma

Percent of map unit: 3 percent
Landform: Outwash plains, stream terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R110XY008IL - Wet Glacial Drift Upland Prairie
Hydric soil rating: Yes

Lena

Percent of map unit: 2 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R108XA001IL - Organic Sedge Meadow, R110XY021IL - Ponded Organic Alkaline Peatland
Hydric soil rating: Yes

984B—Barrington and Varna silt loams, 2 to 4 percent slopes

Map Unit Setting

National map unit symbol: w52r
Elevation: 510 to 970 feet
Mean annual precipitation: 28 to 40 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 140 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Barrington and similar soils: 46 percent
Varna and similar soils: 44 percent
Minor components: 6 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Barrington

Setting

Landform: Outwash plains, lake plains
Landform position (two-dimensional): Summit, backslope
Parent material: Loess or other silty material and in the underlying outwash

Typical profile

H1 - 0 to 11 inches: silt loam
H2 - 11 to 32 inches: silty clay loam
H3 - 32 to 42 inches: silt loam
H4 - 42 to 60 inches: stratified fine sand to silt loam

Properties and qualities

Slope: 2 to 4 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): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: R110XY007IL - Moist Glacial Drift Upland Prairie
Hydric soil rating: No

Description of Varna

Setting

Landform: Ground moraines, lake plains
Landform position (two-dimensional): Summit, backslope
Parent material: Thin mantle of loess or other silty material and in the underlying till

Typical profile

H1 - 0 to 12 inches: silt loam
H2 - 12 to 30 inches: silty clay
H3 - 30 to 48 inches: silty clay loam
H4 - 48 to 60 inches: silty clay loam

Properties and qualities

Slope: 2 to 4 percent
Depth to restrictive feature: 24 to 60 inches to densic material
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: R110XY007IL - Moist Glacial Drift Upland Prairie
Hydric soil rating: No

Minor Components

Ashkum

Percent of map unit: 3 percent
Landform: Ground moraines, end moraines
Landform position (two-dimensional): Toeslope
Ecological site: R110XY008IL - Wet Glacial Drift Upland Prairie
Hydric soil rating: Yes

Pella

Percent of map unit: 3 percent
Landform: Outwash plains, ground moraines, lake plains
Landform position (two-dimensional): Toeslope
Ecological site: R110XY008IL - Wet Glacial Drift Upland Prairie
Hydric soil rating: Yes

989A—Mundelein and Elliott silt loams, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: w52s
Elevation: 510 to 970 feet
Mean annual precipitation: 28 to 40 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 140 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Mundelein and similar soils: 46 percent
Elliott and similar soils: 44 percent
Minor components: 6 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mundelein

Setting

Landform: Outwash plains, lake plains
Landform position (two-dimensional): Summit, footslope
Parent material: Loess or other silty material and in the underlying outwash

Typical profile

H1 - 0 to 17 inches: silt loam
H2 - 17 to 31 inches: silty clay loam
H3 - 31 to 42 inches: silt loam
H4 - 42 to 60 inches: stratified fine sand to silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: B/D
Ecological site: R110XY007IL - Moist Glacial Drift Upland Prairie
Hydric soil rating: No

Description of Elliott

Setting

Landform: Ground moraines, lake plains
Landform position (two-dimensional): Summit, footslope
Parent material: Thin mantle of loess or other silty material and in the underlying till

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 11 inches: silty clay loam
H3 - 11 to 16 inches: silty clay
H4 - 16 to 41 inches: silty clay loam
H5 - 41 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 45 inches to densic material
Drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: D
Ecological site: R110XY007IL - Moist Glacial Drift Upland Prairie
Hydric soil rating: No

Minor Components

Ashkum
Percent of map unit: 3 percent
Landform: Ground moraines, end moraines
Landform position (two-dimensional): Toeslope
Ecological site: R110XY008IL - Wet Glacial Drift Upland Prairie
Hydric soil rating: Yes

Pella
Percent of map unit: 3 percent
Landform: Outwash plains, ground moraines, lake plains
Landform position (two-dimensional): Toeslope
Ecological site: R110XY008IL - Wet Glacial Drift Upland Prairie
Hydric soil rating: Yes

989B—Mundelein and Elliott silt loams, 2 to 4 percent slopes

Map Unit Setting
National map unit symbol: w52w
Elevation: 510 to 970 feet
Mean annual precipitation: 28 to 40 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 140 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Mundelein and similar soils: 46 percent
Elliott and similar soils: 44 percent
Minor components: 6 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mundelein

Setting
Landform: Outwash plains, lake plains
Landform position (two-dimensional): Backslope, footslope
Parent material: Loess or other silty material and in the underlying outwash

Typical profile
H1 - 0 to 12 inches: silt loam
H2 - 12 to 30 inches: silty clay loam
H3 - 30 to 37 inches: silt loam
H4 - 37 to 60 inches: stratified fine sand to silt loam

Properties and qualities

Slope: 2 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B/D
Ecological site: R110XY007IL - Moist Glacial Drift Upland Prairie
Hydric soil rating: No

Description of Elliott

Setting

Landform: Ground moraines, lake plains
Landform position (two-dimensional): Backslope, footslope
Parent material: Thin mantle of loess or other silty material and in the underlying till

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 13 inches: silty clay loam
H3 - 13 to 17 inches: silty clay loam
H4 - 17 to 35 inches: silty clay loam
H5 - 35 to 60 inches: silty clay loam

Properties and qualities

Slope: 2 to 4 percent
Depth to restrictive feature: 20 to 45 inches to densic material
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Ecological site: R110XY007IL - Moist Glacial Drift Upland Prairie
Hydric soil rating: No

Minor Components

Pella

Percent of map unit: 3 percent
Landform: Outwash plains, ground moraines, lake plains
Landform position (two-dimensional): Toeslope
Ecological site: R110XY008IL - Wet Glacial Drift Upland Prairie
Hydric soil rating: Yes

Ashkum

Percent of map unit: 3 percent
Landform: Ground moraines, end moraines
Landform position (two-dimensional): Toeslope
Ecological site: R110XY008IL - Wet Glacial Drift Upland Prairie
Hydric soil rating: Yes

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National Flood Hazard Layer FIRMette

88°1'9"W 42°18'45"N

88°0'32"W 42°18'18"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/10/2025 at 5:53 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

U.S. Fish and Wildlife Service
National Wetlands Inventory

Wetland Map

January 10, 2025

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Manhard CONSULTING LTD

APPENDIX 4

AGI Project No. 22-480

Subsurface Investigation Report

For the

Proposed New Commercial Site Development

Northeast Corner of Midlothian Road & Peterson Road
Libertyville, Illinois

Prepared for

Mr. Bob Linahon
Keeley Construction, Inc.
245 East Sidney Court
Villa Park, Illinois 60181

Prepared by

Applied GeoScience, Inc.
2385 Hammond Dr., Suite 6
Schaumburg, Illinois 60173
847-303-0300

December 29, 2022

DRAFT

Applied GeoScience, Inc.
Geotechnical, Environmental & Materials Engineering

December 29, 2022

Mr. Bob Linahon
Keeley Construction, Inc.
245 East Sidney Court
Villa Park, Illinois 60181

RE: Subsurface Investigation Report
Proposed New Commercial Site Development
Northeast Corner of Midlothian Road & Peterson Road – Libertyville, Illinois
AGI Project No. 22-480

Dear Mr. Linahon:

The subsurface exploration at the above-referenced site has been completed. The attached report presents the findings of the subsurface exploration and provides geotechnical analysis for the project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the contents of this report, or if we may be of further service to you in any way, please do not hesitate to contact us.

Sincerely,

APPLIED GEOSCIENCE, INC.

Adam M. Moghamis

Adam M. Moghamis, P.E.
Principal Engineer

enc.

INTRODUCTION

The purpose of this exploration was to evaluate the subsurface soil conditions at the site and to formulate conclusions and guideline recommendations pertaining to the influence of these conditions upon the proposed construction.

The subject site is located on the northeast corner of Midlothian Road and Peterson Road in Libertyville, Illinois, as shown on Appendix A, Boring Location Diagram.

It is our understanding that the proposed construction will include multiple new commercial buildings consisting of 1-story slab-on-grade. Site development will presumably include paved parking lots, driveways, and associated underground utilities. It is anticipated that proposed grades will be approximately equivalent to existing grades.

Results of field and laboratory testing and final guideline recommendations based upon these data are included in this report. Logs of the soil borings performed at the site, a site location map, the results of the exploration and general notes are included with this report. Applied GeoScience, Inc. (AGI) personnel established the boring locations in the field based on the diagram provided by the client, without the aid of sophisticated surveying techniques, therefore all locations are considered to be approximate.

SUBSURFACE EXPLORATION PROCEDURES

Forty-five (45) soil borings extended to depths of 15.0 to 20.0 feet below ground surface were performed at the above referenced site between December 20 and 28, 2022. The soil borings were performed using an ATV-mounted rotary drilling rig, using hollow stem augers. Representative samples were obtained using the split-barrel sampling procedure according to ASTM Specification D-1586. In the split-barrel sampling procedure, a 2-inch O.D. split-barrel sampling spoon is driven into the ground with a 140-pound hammer, free falling a distance of 30 inches. The blows required to advance the sampling spoon by 12 inches after an initial 6-inch penetration are reported as the penetration resistance (N) values. These values are shown on the boring log at their test depths. The penetration resistance value is an indication of the relative density of in-place granular soil and, to a lesser degree of accuracy, the consistency of cohesive soil. Cohesive soils were also tested for unconfined compressive strength using a calibrated penetrometer device using IDOT modified RIMAC and calibrated penetrometer test devices. Upon completion of the drilling, the borings were filled with auger cuttings.

Samples were sealed and returned to AGI's laboratory for further examination, classification, and testing. Field logs of the borings were prepared by our field engineer. The boring logs include visual classifications of the materials encountered during drilling as well as the engineer's interpretation of the subsurface conditions between samples. The final boring

logs included with this report represent an interpretation of the field logs and include modifications based on the laboratory testing of the samples.

SOIL CONDITIONS

The soil conditions encountered at the boring locations are shown on the enclosed boring logs, which can be found in Appendix B. The general conditions are described within the following strata.

1. Surficial Materials

   In general, the borings encountered approximately 7.0 inches to 1.5 feet of dark brown and black topsoil at the surface.

2. Silty Clay

   The surficial topsoil was underlain by brown changing to gray silty clay soils with trace to some amounts of sand and gravel. These soils were generally encountered in a stiff to hard condition and extend to the boring termination depth of 15.0 to 20.0 feet below the existing ground surface. In a few borings, sporadic soft clay seams were encountered throughout the strata.

The stratification lines shown on the boring log represents the approximate boundary between soil types. The actual transition may be more gradual.

LABORATORY TESTING PROGRAM

The testing program consisted of performing water content tests on selected soil samples according to ASTM D-2216 and calibrated penetrometer tests on the cohesive samples recovered. These tests were performed upon representative portions of the samples obtained in the field. The results of all testing performed, along with a visual classification of the material based upon both a textural analysis and the Unified Soil Classification System, are indicated on the boring logs.

GROUNDWATER CONDITIONS

Water level observations were recorded while drilling and immediately after completion of the borings. Ground water was encountered between depths of 5.0 to 18.5 feet in the borings. The majority of the borings did not encounter any groundwater. The borings were backfilled after drilling for safety reasons.

Based on our experience, the long-term elevation of the water table is typically located at the depth where the color of the soil changes from brown and gray to completely gray. This transition occurred between depths of 8.0 to 12.0 feet in the borings, which indicates that the phreatic surface exists at an approximate depth of 10.0 feet below the ground surface.

Groundwater observations in the borings provide an approximate indication of the groundwater conditions at the time the borings were drilled. Since the soils encountered were predominately cohesive, which have a low coefficient of permeability, much time is required for the groundwater to seep into the borehole and attain an equilibrium level. Longer-term observations in cased holes or piezometers would be necessary for a more accurate evaluation of the groundwater conditions at this site.

Fluctuations in the groundwater level and the possible development of perched water table should be anticipated throughout the year depending on variations in climatological conditions and other factors not apparent at the time the borings were performed. The possibility of groundwater level fluctuation should be considered when developing the design and construction plans for the project.

ANALYSIS AND GUIDELINE RECOMMENDATIONS

The following guideline recommendations assume that the scope of the project as described in the beginning of this report does not change, and that no significant variation in soil conditions occur from those reported on our final boring logs. The boring logs and laboratory test results depict subsurface conditions only at the specified locations on the site. With these limitations, the following geotechnical guideline recommendations are given for the proposed new commercial site development.

Footing Foundation

For the proposed structures, foundation loads are estimated to be light to moderate. Based on the soil boring data, we recommend a shallow spread footing type foundation for the support of this structure. Based on the boring information and with the anticipated site preparation, building foundations extending to minimum depths required for frost protection, should bear on the very stiff to hard silty clay soils encountered in the borings below a depth of 3.5 feet, or on properly compacted engineering fill materials extended to these soils.

If unsuitable bearing soils are encountered in a footing excavation, such as the soft clay soils in Borings B-4, B-6, and B-7, the excavation should be deepened to competent bearing soil and the footing could be lowered or an overexcavation and backfill procedure could be performed.

An overexcavation and backfill treatment would require widening the deepened excavation in all directions at least 8 inches beyond the edges of the footing for each 12 inches of overexcavation depth. The overexcavation should then be backfilled in maximum 9-inches thick loose lifts with suitable granular fill material compacted to at least 95 percent of the maximum modified Proctor dry density (ASTM D-1557).

Shallow footings bearing on the very stiff to hard silty clay soils, or on properly compacted engineering fill materials extended to these soils, tested, and evaluated by an Applied GeoScience, Inc. experienced geotechnical professional, could be designed using a maximum net allowable soil bearing pressure of 3,000 psf. The net pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation.

A one-third increase in the allowable design bearing pressure could be used for design of footings for added temporary live loads such as those due to wind gusts or seismic activity.

Perimeter footings and footings beneath unheated areas should extend at least 42 inches beneath the lowest adjacent finished grade for frost protection. Interior footings should also be founded at least 24 inches below floor slab level for confinement of the bearing soils. Isolated footings should have a minimum width of 30 inches, and continuous formed footings should have a minimum width of 20 inches.

The soil parameters that can be used for the proposed building foundations are listed below. Active Pressure (Ka) = 1.0, Passive Pressure (Kp) = 3.0, Unit Weight = 120 pcf.

Resistance to lateral loads will be available from friction at the base of footings and from passive pressure of backfill along the foundation wall and the footing. For skin friction we recommend an allowable friction factor of 0.35. Passive resistance can be based on a linearly increasing resistance of 200 psf per foot depth for a compacted crushed stone fill.

Anticipated long-term settlement of the footing foundation designed and constructed as recommended above should be less than 1 inch. Differential settlement should be within the range of ¼ to ½ inch.

A representative of Applied GeoScience, Inc. should be on site during construction to observe the footing excavation and verify the bearing conditions.

Floor Slab on Grade

Available information indicated that the existing very stiff to hard silty clay fill materials are capable of providing support for the proposed floor slab situated on grade. The exposed surface should be observed by a soil engineer to determine if there are any localized deposits of soft, organic, or unsuitable material. Any such deposit, as observed by the soil engineer, should be removed, and replaced with an approved fill, free of organic matter and debris. A 6-inch layer of gravel meeting IDOT gradation CA-7 or equivalent should be provided below the floor slab to minimize dangers from capillary rise of moisture.

Based on the field and laboratory test results and pavement design parameters, we recommend a modulus of subgrade reaction (k value) of 100 pci, or psi per inch, be used for flexible or rigid pavement design at this site.

Stabilization of Subgrade Soils

We recommend that all, if any, topsoil, organic, vegetation, loose, soft, or otherwise unsuitable materials be removed from any new pavement area. The necessary stripping depths will vary and should be closely monitored during construction to verify that all unsuitable materials have been removed. Prior to fill placement and after rough grading is completed, the exposed subgrade should be proofrolled. Proofrolling aids in providing a firm subgrade for new pavement and for delineating soft or disturbed areas that may exist at or slightly below subgrade level. Unsuitable areas observed at this time should be undercut and replaced with suitable fill if they cannot be compacted in place. Proofrolling may be accomplished with a fully loaded, tandem-axle dump truck or other equipment providing an equivalent subgrade loading. A minimum gross weight of 25 tons is recommended for the proofrolling equipment. Proofrolling should be performed in dry weather conditions only as a wet subgrade will not allow detection of buried weak soils.

If the proofroll indicates that no significant deflection is observed, no additional undercut will be required. If significant deflection is observed, undercut an additional 1.0 foot, and replace with approved engineered granular materials.

Appropriate laboratory testing should be performed on samples of proposed off-site borrow materials before they are used for fill, particularly if they are to be placed within 2 feet of the finished pavement subgrade elevation.

Pavement Sections

The following typical pavement sections should be considered for this project.

Typical Pavement Sections		
	Bituminous Concrete over Crushed Stone Base	**Portland Cement Concrete over Crushed Stone Base**
Truck Driveways	5 inches Asphalt Surface 12 inches Crushed Stone (CA-6)	9 inches PCC 8 inches Crushed Stone (CA-6)
Truck Parking Lots	5 inches Asphalt Surface 12 inches Crushed Stone (CA-6)	8 inches PCC 8 inches Crushed Stone (CA-6)
Loading Docks	Not Applicable	8 inches PCC 6 inches Crushed Stone (CA-6)
Passenger-Vehicle Driveways	4 inches Asphalt Surface 12 inches Crushed Stone (CA-6)	Not Applicable
Passenger-Vehicle Parking Lots	3 inches Asphalt Surface 10 inches Crushed Stone (CA-6)	Not Applicable

Bituminous materials should conform to IDOT Class I requirements Standard Specifications for Roads and Bridge Construction. They should be compacted to between 93 and 97 percent of theoretical maximum density, the Big "D" as determined by IDOT.

Care should be taken in the design and construction of paved areas to provide rapid drainage of surface water and to develop surface drainage patterns which will divert water away from the pavement edges. When water is allowed to pond on or adjacent to the pavement, the subgrade may become saturated and accelerate pavement deterioration.

To prevent future pavement failure, an underdrainage system is recommended at the site. Underdrains furnish an outlet for any surface and/or groundwater that would otherwise build up in the granular material and should be installed at the lowest point of the granular subgrade replacement. The underdrains should be placed at the low points of the profile grade and at approximately 30 feet intervals between low points. All underdrains and slope drains should be tied into storm sewers or ditches. FA-1 or CA-7 backfill, or equivalent, should be used.

The typical pavement sections recommended above are minimums and some periodic maintenance should be anticipated. Periodic maintenance will maximize the service life of both the light and heavy traffic pavement sections. Such maintenance should include patching and repair of deteriorated areas, crack sealing, and surface sealing. Thicker pavement sections could be used to reduce the required maintenance and extend the expected service life of the pavements.

Seismic Design

Based on the 2015 International Building Code, Table 1615.1.1 Site Class Definitions, the site soils can be characterized as Site Class D. Site Class D is described as a stiff soil profile for the top 100 ft of the site soil profile. Since the maximum boring depth was drilled to 25 feet for this exploration, based on our experience with the soils in this area, the available geologic maps and following the direction of IBC 2015 when there are no borings to 100 feet deep, it is our professional engineering opinion the site would be defined as Site Class D.

CONSTRUCTION CONSIDERATIONS

Depending upon weather conditions, during and prior to construction, some groundwater could be encountered in the anticipated construction excavations on the site. It is anticipated that any seepage into the construction excavation could be controlled with drainage ditches or by pumping from sump pits.

Soft, wet, and unstable subgrade soils may occur where shallow groundwater is present throughout the construction site. Heavy equipment traffic directly on these materials should be minimized or prevented.

All excavation should be performed in accordance with the latest Occupational Safety and Health Administration requirements.

New requirements of the Illinois Environmental Protection Agency mandate that all uncontaminated soil that is to be removed from the site, including soil mixed with other clean construction or demolition debris (CCDD), sent to either a CCDD or an uncontaminated soil fill operation must be certified to be uncontaminated soil in accordance with Section 22.52(f)(2)(B) or Section 22.51a(d)(2)(B), respectively, of the Environmental Protection Act [415 ILCS 5]. Certifications for commercial/industrial properties must be made by a licensed professional engineer. Certifications for uncontaminated soil removed from a site that has not been used for commercial or industrial purposes may be made by either the site owner/operator or by a licensed professional engineer on the IEPA's forms. These forms, along with the analytical results, must be submitted to the fill operation prior to disposal of any soils excavated from the site. AGI's environmental professionals are qualified to perform testing and certifications in accordance with the IEPA's regulations.

Continuous observation by a geotechnical engineer or his representative should be maintained during site preparation and compaction of all fill and backfill material.
No unique soil-related construction problems other than those discussed in previous sections are foreseen. An experienced soil engineer should be retained to oversee all soil-related operations during site preparation and compaction of all fill and backfill material.

GENERAL COMMENTS

The analysis and guideline recommendations presented in this report are based upon the data obtained from the soil borings performed at the indicated locations and from any other information discussed in this report. This report does not reflect any variations that may occur between borings or across the site. The nature and extent of such variations may not become evident until construction. If variations become evident, it will be necessary to reevaluate the recommendations of this report.

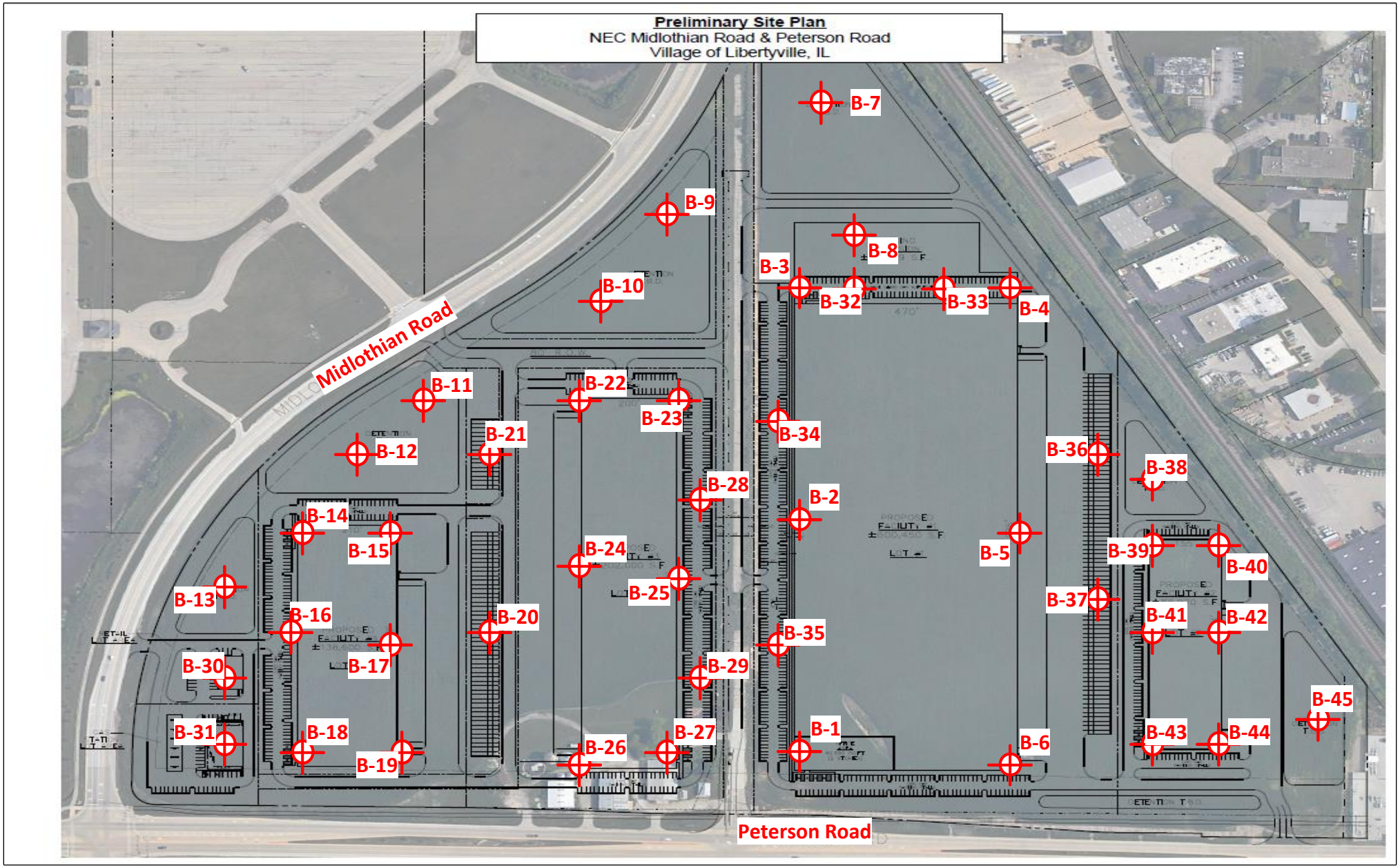
It is further recommended that Applied GeoScience, Inc. be retained for testing and observation during earthwork construction phases to help ensure that design requirements are met.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No other warranties, either expressed or implied, are intended or made. In the event that any changes in the nature, design or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this

report shall not be considered valid unless the changes are reviewed and the conclusions of this report modified or verified in writing by the geotechnical engineer.

APPENDIX A

Boring Location Diagram



PROJECT NUMBER: **22-48**	APPENDIX A: **Proposed Boring Location Diagram**		*Applied GeoScience, Inc.* 2385 Hammond Drive, Suite 6 Schaumburg, Illinois 60173 (847) 303-0300
CLIENT NAME: **Keeley Construction**	SITE LOCATION **Northeast Corner of Midlothian Road & Peterson Road Libertyville, Illinois**	N Not to Scale	
DATE: **December 20-28, 2022**			

APPENDIX B

Boring Logs

AGI Job No. 22-480	BORING LOG NO. B-1	Sheet 1 of 1

CLIENT: Keeley Construction

PROJECT: Proposed New Commercial Site Development

STATION AND OFFSET:

LOCATION: NEC of Midlothian Road & Peterson Road

COUNTY: Lake

CITY & STATE: Libertyville, Illinois

SURFACE ELEVATION Datum:

DEPTH (FT.)	GRAPHIC LOG	SAMPLES				TESTS				
		SPT-N BLOWS / FT.	NUMBER	TYPE	% RECOVERY	MOISTURE, %	DRY DENSITY PCF	Qu tsf Failure Type	VANE SHEAR PSF	Est. Coefficient of Permeability k, (cm/sec)
0.6 Topsoil, dark brown & black										
SILTY CLAY, trace sand & gravel, brown to brown & gray, very stiff to hard, (CL)		18	1	SS	50	17		3.0		
		20	2	SS	72	18		4.0		
5		21	3	SS	72	19		4.0		
		25	4	SS	72	17		4.0		
10		18	5	SS	83	17		3.0		
		16	6	SS	56	19		3.3		
15										
17.0										
SILTY CLAY, trace sand & gravel, gray, very stiff, (CL)		11	7	SS	56	19		2.0		
20.0										
20										
End Of Boring										

WATER LEVEL OBSERVATIONS		
WL	▽	Dry WD
WL	▼	Dry AB
WL	⧩	

Applied GeoScience, Inc.
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Schaumburg, Illinois 60173
Tel: (847) 303-0300
Fax: (847) 303-0900

STARTED	12-20-22	FINISHED	12-20-22
DRILL CO.	Earth Sol.	DRILL RIG	7822DT
DRILLER	Sal	ASS'T DRILLER	Rafael
ENG/GEOL.	AMM / KG	APPROVED	AMM

AGI Job No. 22-480	BORING LOG NO. B-2	Sheet 1 of 1

CLIENT: Keeley Construction

PROJECT: Proposed New Commercial Site Development

STATION AND OFFSET:

LOCATION: NEC of Midlothian Road & Peterson Road

COUNTY: Lake

CITY & STATE: Libertyville, Illinois

SURFACE ELEVATION Datum:

		GRAPHIC LOG	DEPTH (FT.)	SAMPLES SPT-N BLOWS / FT.	NUMBER	TYPE	% RECOVERY	TESTS MOISTURE, %	DRY DENSITY PCF	Qu tsf Failure Type	VANE SHEAR PSF	Est. Coefficient of Permeability k, (cm/sec)
1.1	Topsoil, black											
	SILTY CLAY, trace sand & gravel, brown, very stiff, (CL)			9	1	SS	78	27		2.5		
			5	4	2	SS	56	22		3.5		
6.0	▽											
	SILTY CLAY, trace sand & gravel, thin sand seam at 6 feet, gray, very stiff to stiff, (CL)			8	3	SS	78	20		3.8		
			10	13	4	SS	72	19		3.5		
				10	5	SS	22	19		1.0		
			15	11	6	SS	78	20		1.3		
	▼											
20.0				8	7	SS	89	23		1.0		
	End Of Boring		20									

WATER LEVEL OBSERVATIONS			
WL	▽	6	WD
WL	▼	17	AB
WL	⧩		

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DRILL CO.	Earth Sol.	DRILL RIG	7822DT
DRILLER	Sal	ASS'T DRILLER	Rafael
ENG/GEOL.	AMM / KG	APPROVED	AMM

AGI Job No. 22-480	BORING LOG NO. B-3	Sheet 1 of 1

CLIENT: Keeley Construction

PROJECT: Proposed New Commercial Site Development

STATION AND OFFSET:

LOCATION: NEC of Midlothian Road & Peterson Road

COUNTY: Lake

CITY & STATE: Libertyville, Illinois

SURFACE ELEVATION Datum:

DEPTH (FT.)	GRAPHIC LOG	SAMPLES: SPT-N BLOWS / FT.	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: % RECOVERY	TESTS: MOISTURE, %	TESTS: DRY DENSITY PCF	TESTS: Qu tsf Failure Type	TESTS: VANE SHEAR PSF	TESTS: Est. Coefficient of Permeability k, (cm/sec)
Topsoil, black										
1.5										
SILTY CLAY, trace sand & gravel, brown, stiff to very stiff, (CL)		10	1	SS	56	24		1.3		
		10	2	SS	67	21		1.8		
5										
		10	3	SS	78	23		3.8		
8.0										
SILTY CLAY, trace sand & gravel, gray, very stiff to stiff, (CL)		12	4	SS	89	16		2.0		
10										
		9	5	SS	78	14		3.0		
		11	6	SS	22	15		1.5		
15										
18.0										
CLAYEY GRAVEL, gray, medium dense, (GP-CL)		15	7	SS	56					
20.0										
20										
End Of Boring										

WATER LEVEL OBSERVATIONS			
WL	▽ 18.5	WD	
WL	▼ 18.5	AB	
WL	⧩		

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2385 Hammond Drive, Suite 6
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STARTED	12-20-22	FINISHED	12-20-22
DRILL CO.	Earth Sol.	DRILL RIG	7822DT
DRILLER	Sal	ASS'T DRILLER	Rafael
ENG/GEOL.	AMM / KG	APPROVED	AMM

AGI Job No. 22-480	BORING LOG NO. B-4	Sheet 1 of 1

CLIENT: Keeley Construction

PROJECT: Proposed New Commercial Site Development

STATION AND OFFSET:

LOCATION: NEC of Midlothian Road & Peterson Road

COUNTY: Lake

CITY & STATE: Libertyville, Illinois

SURFACE ELEVATION Datum:

Depth (Ft.)	Graphic Log	Description	SPT-N Blows / Ft.	Number	Type	% Recovery	Moisture, %	Dry Density PCF	Qu tsf Failure Type	Vane Shear PSF	Est. Coefficient of Permeability k, (cm/sec)
		SAMPLES					TESTS				
0.7		Topsoil, black									
		SILTY CLAY, trace sand & gravel, brown, very stiff, (CL)	10	1	SS	67	27		2.0		
3.5											
5.0		SILTY CLAY, trace sand, some gravel, brown & gray, very soft, (CL)	14	2	SS	17	35		0.3		
		SILTY CLAY, trace sand & gravel, brown, hard, (CL)	18	3	SS	78	18		4.5		
8.0											
		SILTY CLAY, some gravel, gray, stiff to medium stiff, poor recovery due to large gravel pieces, (CL)	17	4	SS	22	22		1.8		
			13	5	SS	17	23		1.0		
			19	6	SS	28	20		0.8		
17.0		▼									
		SILTY CLAY, trace sand & gravel, gray, very stiff, (CL)	10	7	SS	89	20		2.5		
20.0											
		End Of Boring									

WATER LEVEL OBSERVATIONS			
WL	▽		
WL	▼ 17		AB
WL	⧩		

Applied GeoScience, Inc.
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Tel: (847) 303-0300
Fax: (847) 303-0900

STARTED	12-20-22	FINISHED	12-20-22
DRILL CO.	Earth Sol.	DRILL RIG	7822DT
DRILLER	Sal	ASS'T DRILLER	Rafael
ENG/GEOL.	AMM / KG	APPROVED	AMM

AGI Job No. 22-480	BORING LOG NO. B-5	Sheet 1 of 1

CLIENT: Keeley Construction

PROJECT: Proposed New Commercial Site Development

STATION AND OFFSET:

LOCATION: NEC of Midlothian Road & Peterson Road

COUNTY: Lake

CITY & STATE: Libertyville, Illinois

SURFACE ELEVATION Datum:

Depth (Ft.)	Graphic Log	Description	SPT-N Blows / Ft.	Number	Type	% Recovery	Moisture, %	Dry Density PCF	Qu tsf Failure Type	Vane Shear PSF	Est. Coefficient of Permeability k, (cm/sec)
		Topsoil, black									
1.5		SILTY CLAY, trace sand & gravel, brown & gray, stiff to very stiff, (CL)	10	1	SS	67			1.5		
			14	2	SS	72			2.8		
5.5		SILTY CLAY, trace sand, little gravel, brown, hard, (CL)	19	3	SS	67			4.5		
			20	4	SS	78			4.0		
10.5		SILTY CLAY, trace sand & gravel, brown & gray, medium stiff, (CL)	12	5	SS	50			0.8		
13.0		SILTY CLAY, trace sand & gravel, gray, very stiff to stiff, (CL)	10	6	SS	67			2.0		
20.0		End Of Boring	8	7	SS	83			1.8		

WATER LEVEL OBSERVATIONS		
WL	▽	Dry WD
WL	▼	Dry AB
WL	⧩	

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STARTED	12-20-22	FINISHED	12-20-22
DRILL CO.	Earth Sol.	DRILL RIG	7822DT
DRILLER	Sal	ASS'T DRILLER	Rafael
ENG/GEOL.	AMM / KG	APPROVED	AMM

AGI Job No. 22-480	BORING LOG NO. B-6	Sheet 1 of 1

CLIENT: Keeley Construction

PROJECT: Proposed New Commercial Site Development

STATION AND OFFSET:

LOCATION: NEC of Midlothian Road & Peterson Road

COUNTY: Lake

CITY & STATE: Libertyville, Illinois

SURFACE ELEVATION Datum:

Depth (Ft.)	Graphic Log	Material Description	SPT-N Blows / Ft.	Number	Type	% Recovery	Moisture, %	Dry Density PCF	Qu tsf Failure Type	Vane Shear PSF	Est. Coefficient of Permeability k, (cm/sec)
		SAMPLES					**TESTS**				
1.5		Topsoil, black									
3.0		SILTY CLAY, trace sand & gravel, brown & gray, hard, (CL)	6	1	SS	67			4.0		
		SILTY CLAY, trace to little gravel, brown, very soft to soft, (CL) ▽	3	2	SS	61			0.3		
5			6	3	SS	67			0.5		
10.5			3	4	SS	56			0.3		
10		SILTY CLAY, trace gravel, gray, hard to very stiff, (CL)	11	5	SS	78			4.5		
17.0			14	6	SS	61			2.5		
15		CLAYEY GRAVEL, gray, medium dense, (GP-CL)									
20.0			16	7	SS	44					
20		End Of Boring									

WATER LEVEL OBSERVATIONS			
WL	▽	5	WD
WL	▼		Dry AB
WL	⧩		

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STARTED	12-20-22	FINISHED	12-20-22
DRILL CO.	Earth Sol.	DRILL RIG	7822DT
DRILLER	Sal	ASS'T DRILLER	Rafael
ENG/GEOL.	AMM / KG	APPROVED	AMM

AGI Job No. 22-480	BORING LOG NO. B-7	Sheet 1 of 1

CLIENT: Keeley Construction

PROJECT: Proposed New Commercial Site Development

STATION AND OFFSET:

LOCATION: NEC of Midlothian Road & Peterson Road

COUNTY: Lake

CITY & STATE: Libertyville, Illinois

SURFACE ELEVATION Datum:

		GRAPHIC LOG	DEPTH (FT.)	SAMPLES SPT-N BLOWS / FT.	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES % RECOVERY	TESTS MOISTURE, %	TESTS DRY DENSITY PCF	TESTS Qu tsf Failure Type	TESTS VANE SHEAR PSF	TESTS Est. Coefficient of Permeability k, (cm/sec)
1.0	Topsoil, black											
	SILTY CLAY, trace gravel, sand seam at 2 feet, brown & gray, soft, (CL)			3	1	SS	78			0.5		
				3	2	SS	56			0.5		
5.5	CLAYEY SILT, trace sand & gravel, brown & gray, very soft, (CL-ML)		5	10	3	SS	56			0.3		
8.0	SILTY CLAY, trace sand & gravel, brown to gray, hard to very stiff, (CL)			15	4	SS	94			4.5		
			10	13	5	SS	67			4.5		
15.0	End Of Boring		15	7	6	SS	78			3.0		

WATER LEVEL OBSERVATIONS		
WL	▽	Dry WD
WL	▼	Dry AB
WL	⧩	

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STARTED	12-22-22	FINISHED	12-22-22
DRILL CO.	Earth Sol.	DRILL RIG	7822DT
DRILLER	Sal	ASS'T DRILLER	Rafael
ENG/GEOL.	AMM / KG	APPROVED	AMM

AGI Job No. 22-480	BORING LOG NO. B-8	Sheet 1 of 1

CLIENT: Keeley Construction

PROJECT: Proposed New Commercial Site Development

STATION AND OFFSET:

LOCATION: NEC of Midlothian Road & Peterson Road

COUNTY: Lake

CITY & STATE: Libertyville, Illinois

SURFACE ELEVATION Datum:

		GRAPHIC LOG	DEPTH (FT.)	SAMPLES SPT-N BLOWS / FT.	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES % RECOVERY	TESTS MOISTURE, %	TESTS DRY DENSITY PCF	TESTS Qu tsf Failure Type	TESTS VANE SHEAR PSF	TESTS Est. Coefficient of Permeability k, (cm/sec)
1.0	Topsoil, black											
	SILTY CLAY, trace to little gravel, trace sand, brown, very stiff to hard, (CL)			8	1	SS	67			3.5		
			5	7	2	SS	78			2.8		
				8	3	SS	100			4.0		
8.0												
	SILTY CLAY, trace sand, little gravel, gray, hard to very stiff, (CL)			9	4	SS	78			4.0		
			10	9	5	SS	100			3.0		
15.0				9	6	SS	100			2.5		
			15									
	End Of Boring											

WATER LEVEL OBSERVATIONS		
WL	▽	Dry WD
WL	▼	Dry AB
WL	⧩	Cave-in at 13.5'

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STARTED	12-22-22	FINISHED	12-22-22
DRILL CO.	Earth Sol.	DRILL RIG	7822DT
DRILLER	Sal	ASS'T DRILLER	Rafael
ENG/GEOL.	AMM / KG	APPROVED	AMM

AGI Job No. 22-480	BORING LOG NO. B-10	Sheet 1 of 1

CLIENT: Keeley Construction

PROJECT: Proposed New Commercial Site Development

STATION AND OFFSET:

LOCATION: NEC of Midlothian Road & Peterson Road

COUNTY: Lake

CITY & STATE: Libertyville, Illinois

SURFACE ELEVATION Datum:

	GRAPHIC LOG	DEPTH (FT.)	SAMPLES SPT-N BLOWS / FT.	NUMBER	TYPE	% RECOVERY	TESTS MOISTURE, %	DRY DENSITY PCF	Qu tsf Failure Type	VANE SHEAR PSF	Est. Coefficient of Permeability k, (cm/sec)
0.7 Topsoil, black											
SILTY CLAY, trace to little sand & gravel, brown & gray, stiff, (CL)			30	1	SS	56			1.8		
3.0 SILTY CLAY, trace sand & gravel, brown, hard, (CL)		5	14	2	SS	100			4.5		
5.5 SILTY CLAY, little to some gravel, brown, hard, (CL)			32	3	SS	67			4.5		
8.0 SILTY CLAY, trace sand & gravel, sand seam at 14 feet, gray, very stiff to stiff, (CL)		10	10	4	SS	78			3.8		
			7	5	SS	100			1.5		
15.0 End Of Boring		15	7	6	SS	100			1.5		

WATER LEVEL OBSERVATIONS		
WL	▽	Dry WD
WL	▼	Dry AB
WL	⧩	Cave-in at 14'

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STARTED	12-27-22	FINISHED	12-27-22
DRILL CO.	Earth Sol.	DRILL RIG	7822DT
DRILLER	Sal	ASS'T DRILLER	Rafael
ENG/GEOL.	AMM / KG	APPROVED	AMM

AGI Job No. 22-480	BORING LOG NO. B-17	Sheet 1 of 1

CLIENT: Keeley Construction

PROJECT: Proposed New Commercial Site Development

STATION AND OFFSET:

LOCATION: NEC of Midlothian Road & Peterson Road

COUNTY: Lake

CITY & STATE: Libertyville, Illinois

SURFACE ELEVATION Datum:

DEPTH (FT.)	GRAPHIC LOG	SAMPLES				TESTS				
		SPT-N BLOWS / FT.	NUMBER	TYPE	% RECOVERY	MOISTURE, %	DRY DENSITY PCF	Qu tsf Failure Type	VANE SHEAR PSF	Est. Coefficient of Permeability k, (cm/sec)
0.7 Topsoil, black										
SILTY CLAY, trace sand & gravel, brown to brown & gray, hard to very stiff, (CL)		9	1	SS	56			4.5		
		9	2	SS	89			3.8		
5		11	3	SS	100			3.5		
		10	4	SS	100			2.5		
10.5										
10										
SILTY CLAY, some gravel, gray, stiff, (CL)		12	5	SS	100			1.5		
13.0										
SILTY CLAY, trace gravel, gray, very stiff, (CL)		8	6	SS	100			2.3		
15										
20.0										
20		8	7	SS	100			2.0		
End Of Boring										

WATER LEVEL OBSERVATIONS		
WL	▽	Dry WD
WL	▼	Dry AB
WL	⧩	Cave-in at 19'

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STARTED	12-27-22	FINISHED	12-27-22
DRILL CO.	Earth Sol.	DRILL RIG	7822DT
DRILLER	Sal	ASS'T DRILLER	Rafael
ENG/GEOL.	AMM / KG	APPROVED	AMM

AGI Job No. 22-480	BORING LOG NO. B-24	Sheet 1 of 1

CLIENT: Keeley Construction

PROJECT: Proposed New Commercial Site Development

STATION AND OFFSET:

LOCATION: NEC of Midlothian Road & Peterson Road

COUNTY: Lake

CITY & STATE: Libertyville, Illinois

SURFACE ELEVATION Datum:

Depth (Ft.)	Graphic Log	Material Description	SPT-N Blows / Ft.	Number	Type	% Recovery	Moisture, %	Dry Density PCF	Qu tsf Failure Type	Vane Shear PSF	Est. Coefficient of Permeability k, (cm/sec)
		SAMPLES					**TESTS**				
0.9		Topsoil, black									
		SILTY CLAY, trace sand & gravel, brown, very stiff to hard, (CL)	8	1	SS	83			3.3		
			16	2	SS	100			4.5		
5.5											
		CLAYEY SAND, little to some gravel, brown, very stiff, (SC-CL)	20	3	SS	100			2.5		
8.0											
		SILTY CLAY, trace sand, trace to little gravel, brown to brown & gray, hard, (CL)	21	4	SS	100			4.5		
			22	5	SS	100			4.5		
13.0											
		SILTY CLAY, trace sand, little to some gravel, gray, very stiff, (CL)	18	6	SS	100			2.5		
20.0			14	7	SS	100			2.0		
		End Of Boring									

WATER LEVEL OBSERVATIONS		
WL	▽	Dry WD
WL	▼	Dry AB
WL	▼	Cave-in at 18.5'

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STARTED	12-22-22	FINISHED	12-22-22
DRILL CO.	Earth Sol.	DRILL RIG	7822DT
DRILLER	Sal	ASS'T DRILLER	Rafael
ENG/GEOL.	AMM / KG	APPROVED	AMM

AGI Job No. 22-480	BORING LOG NO. B-30	Sheet 1 of 1

CLIENT: Keeley Construction

PROJECT: Proposed New Commercial Site Development

STATION AND OFFSET:

LOCATION: NEC of Midlothian Road & Peterson Road

COUNTY: Lake

CITY & STATE: Libertyville, Illinois

SURFACE ELEVATION Datum:

	GRAPHIC LOG	DEPTH (FT.)	SAMPLES SPT-N BLOWS / FT.	NUMBER	TYPE	% RECOVERY	TESTS MOISTURE, %	DRY DENSITY PCF	Qu tsf Failure Type	VANE SHEAR PSF	Est. Coefficient of Permeability k, (cm/sec)
0.7 Topsoil, black											
SILTY CLAY, little sand & gravel, brown & gray, stiff, (CL)			7	1	SS	67			1.5		
3.0											
SILTY CLAY, trace sand & gravel, brown, very stiff to hard, (CL)		5	7	2	SS	100			3.5		
			16	3	SS	100			4.5		
8.0											
SILTY CLAY, little gravel, trace sand, gray, hard to very stiff, (CL)		10	11	4	SS	89			4.3		
			11	5	SS	100			3.8		
13.0											
SILTY CLAY, trace sand & gravel, gray, very stiff to stiff, (CL)		15	10	6	SS	100			3.5		
20.0		20	5	7	SS	100			1.3		
End Of Boring											

WATER LEVEL OBSERVATIONS		
WL	▽	Dry WD
WL	▼	Dry AB
WL	⧩	Cave-in at 18.5'

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STARTED	12-28-22	FINISHED	12-28-22
DRILL CO.	Earth Sol.	DRILL RIG	7822DT
DRILLER	Sal	ASS'T DRILLER	Rafael
ENG/GEOL.	AMM / KG	APPROVED	AMM

AGI Job No. 22-480	BORING LOG NO. B-42	Sheet 1 of 1

CLIENT: Keeley Construction

PROJECT: Proposed New Commercial Site Development

STATION AND OFFSET:

LOCATION: NEC of Midlothian Road & Peterson Road

COUNTY: Lake

CITY & STATE: Libertyville, Illinois

SURFACE ELEVATION Datum:

DEPTH (FT.)	GRAPHIC LOG	SAMPLES: SPT-N BLOWS / FT.	NUMBER	TYPE	% RECOVERY	TESTS: MOISTURE, %	DRY DENSITY PCF	Qu tsf Failure Type	VANE SHEAR PSF	Est. Coefficient of Permeability k, (cm/sec)
	Topsoil, black									
1.3										
	SILTY CLAY, trace sand & gravel, brown to brown & gray, very stiff to hard, (CL)	7	1	SS	50	24		2.0		
5		14	2	SS	100	16		4.5		
		11	3	SS	100	17		4.5		
8.0										
	SILTY CLAY, trace sand & gravel, sand seam at 18.5 feet, brown & gray to gray, very stiff, (CL)	14	4	SS	100	12		3.8		
10		8	5	SS	100	12		3.0		
	▽	6	6	SS	100	14		3.0		
15										
		7	7	SS	100	21		2.8		
20.0										
20	End Of Boring									

WATER LEVEL OBSERVATIONS			
WL	▽ 14	WD	
WL	▼	Dry AB	
WL	⧩		

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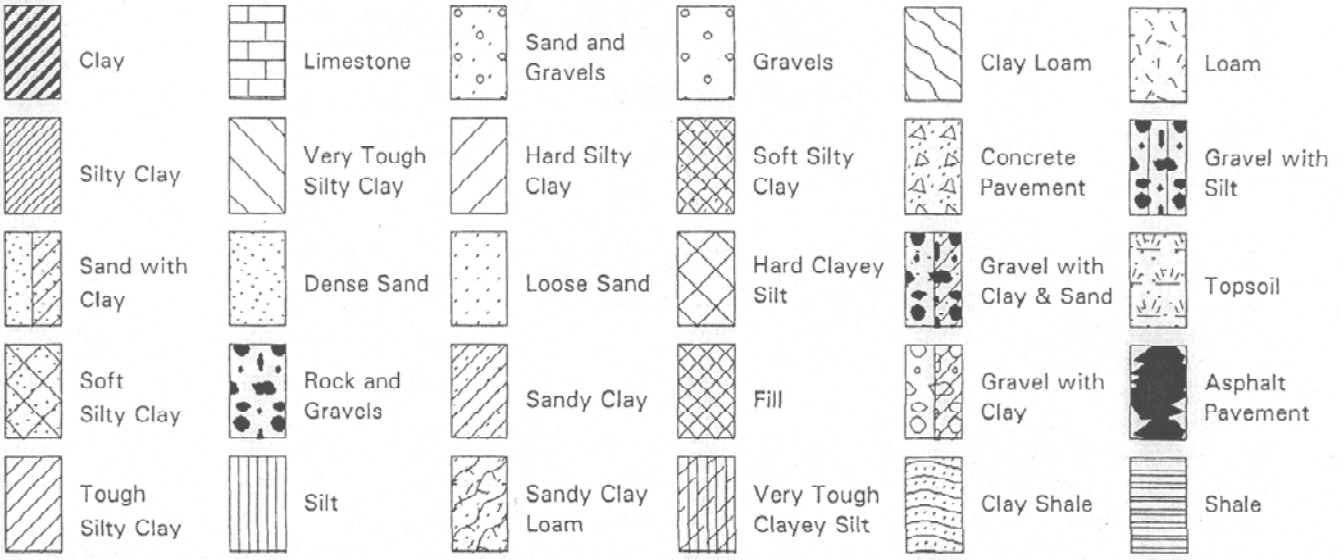
STARTED	12-21-22	FINISHED	12-21-22
DRILL CO.	Earth Sol.	DRILL RIG	7822DT
DRILLER	Sal	ASS'T DRILLER	Rafael
ENG/GEOL.	AMM / KG	APPROVED	AMM



Strength, Qu, tsf "Cohesive Soil"

< 0.25	Very Soft
0.25 - 0.49	Soft
0.50 - 0.99	Medium Stiff
1.00 - 1.99	Stiff
2.00 - 3.99	Very Stiff
4.00 - 8.00	Hard
> 8.00	Very Hard

Failure Type

S Shear B Bulge
P Calibrated Penetrometer

Drilling & Sampling Symbols

R : Auger Refusal
SS : Split Spoon - 1 3/8 I.D, 2" O.D.
PA : Power Auger
HA : Hand Auger
DB : Diamond Bit - NX, BX, AX
ST : Shelby Tube
WS : Wash Sample

Water Level Measurement Symbols

WL : Water Level
WD : While Drilling
AD : After Drilling
WS : While Sampling

Relative Proportions of Sand & Gravel

Descriptive Term (s) (of Components Also Present in Sample	Percent of Dry Weight
Trace	< 15
With	15 - 29
Modifier	> 30

Particle - Size Limits

Sand 2.00 - 0.075 mm
Silt 0.075 - 0.002 mm
Clay finer than 0.002 mm

IDOT Abbreviations

C - Clay
Si - Silt
L - Loam
SiC - SiltyClay
SiCL - SiltyClayLoam
SaC - SandyClay
SaCL - SandyClayLoam
SiL - SiltyLoam
SaL - SandyLoam
CL - ClayLoam
G - Gravel
Gr - Gravelly (Prefix)

Descriptive Term Of Components Also Present In Sample

	Percent Of Dry Weight
Trace	1 - 9
Little	10 - 19
Some	20 - 34
And	35 - 50

Power Auger

Split Spoon

As Drilled Boring Location

N-Blows Per ft. "Granular Soil"

0 - 3	Very Loose
4 - 9	Loose
10 - 29	Medium Dense
30 - 49	Dense
50 - 80	Very Dense
80 +	Extremely Dense

Standard "N" Penetration: Blows per foot of a 140 pound hammer falling 30 inches on a 2 inch OD split spoon.

RIMAC: Machine is used to performing unconfined compressive test on cohesive soil (Field or Lab Testing).

Descriptive Rock Classification

Rock Quality Designation

RQD %	Rock Quality
0.0 - 0.25	Very Poor
0.25 - 0.50	Poor
0.50 - 0.75	Fair
0.75 - 0.90	Good
0.90 - 1.00	Excellent

Classification of rock materials has estimated from disturbed samples.

Relative Proportions of Fines

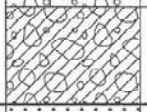
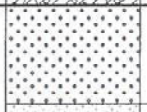
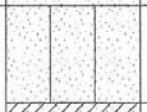
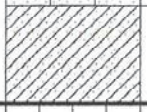
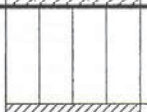
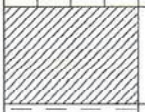
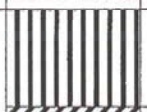
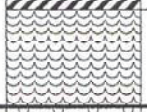
Descriptive Term (s) (of Components Also Present in Sample)	Percent of Dry Weight
Trace	< 5
With	5 - 12
Modifier	> 12

Soil Plasticity %

LL : Liquid Limit PL : Plastic Limits
PI : Plasticity Index NP : Non Plastic
LL - PL = PI

Applied GeoScience, Inc. General Notes

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		(LITTLE OR NO FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		(LITTLE OR NO FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES		SM	SILTY SANDS, SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

Note: Dual symbols are used to indicate borderline soil classifications

Manhard CONSULTING LTD

APPENDIX 5

Hey and Associates, Inc.

Wetland Delineation Report
Peterson Road at Midlothian Road
Libertyville and Grayslake, Lake County, Illinois

Project No. 22-0323

Prepared For:

BCI Acrylic Bath Systems
1800 Industrial Drive
Libertyville, Illinois 60048

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

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Illinois Professional Design Firm 184.002429 / Wisconsin Architectural and Engineering License # 2340-11
Staff licensed to practice in Illinois, Wisconsin, Indiana, Michigan and Oregon
IDOT and WisDOT Prequalified

September 2, 2022

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Farmed Wetland Determination Methods 2

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2: Summary of Potential Farmed Wetland Slide Review 4

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Exhibit 2 – USGS Topographic Map

Exhibit 3 – National Wetland Inventory

Exhibit 4 – Lake County Wetland Inventory

Exhibit 5 – FEMA Flood Hazard Zones

Exhibit 6 – USGS Hydrologic Atlas

Exhibit 7 – NRCS Lake County Soil Survey

Exhibit 8 – Aerial Photograph

Exhibit 9 – Representative Photographs

Exhibit 10 – WETS Table – Mundelein

Exhibit 11A-F – Aerial Crop Slides

INTRODUCTION

A wetland delineation of the ±78.5-acre project site was conducted at the request of Manhard Consulting Ltd. on behalf of BCI Acrylic Bath Systems. The project site is located north of Peterson Road, east of Midlothian Road, and is bisected by the abandoned Harris Road in the Villages of Libertyville and Grayslake, Lake County, Illinois (Exhibit 1). The site is further located in Section 12, Township 44 North, Range 10 East of the 3rd principal meridian. The project area is in agricultural production (soybeans in 2022).

EXISTING MAPS

The United States Geological Survey (USGS) topographic map does not show any water features on the project site (Exhibit 2). The National Wetland Inventory (NWI) map does not depict any wetlands within the project limits (Exhibit 3). The Lake County Wetland Inventory shows one small wetland just east of Harris Road within the project limits (Exhibit 4). The FEMA Flood Hazard Zones map does not show any mapped floodplain within the project limits (Exhibit 5). The USGS Hydrologic Atlas does not show any floods of record within the project site (Exhibit 6). The Natural Resources Conservation Service's Lake County Soil Survey (Exhibit 7) indicates the following hydric soil series are present within the project site: Peotone silty clay loam (330A), Kish loam (626A), Ashkum silty clay loam (232A), and Houghton muck (103A).

WETLAND DELINEATION METHODS

Wetlands on the project site were delineated on August 29, 2022 by Jeffrey Mengler, PWS (CWS-C-162) of Hey and Associates, Inc. using procedures outlined in the 1987 U. S. Army Corps of Engineers' (USACE) Wetland Delineation Manual and the 2010 Regional Supplement: Midwest Region. The entire project site was inspected, with areas supporting wetland plant species prioritized for investigation. If inspection revealed that wetland plant species comprised more than 50 percent of the plant cover, the suspected wetland was further examined for field indicators of hydric soil and hydrology. The USACE-accepted field indicators of hydric soil include: gleyed and low chroma matrix and mottle colors, and iron and manganese concretions. Necessary hydric soil indicators were field verified in the

wetland areas. The USACE-approved field indicators of hydrology include visual observation or photographic evidence of soil inundation or saturation during the growing season, oxidized channels associated with living roots and rhizomes, water marks, drift lines, waterborne sediment deposits, water-stained leaves, surface scoured areas and drainage patterns. Wetland hydrologic criteria were met in any areas delineated as wetland.

Farmed Wetland Determination Methods

As a result of a modification to a Memorandum of Agreement between the U.S. Army Corps of Engineers (USACE) and the U.S. Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS), farmed wetland delineations are no longer conducted by USDA-NRCS for purposes other than the implementation of the Farm Bill. Therefore, Hey and Associates Inc. conducts farmed wetland determinations using the methodology outlined by the USDA-NRCS and in accordance with USACE guidelines for USACE permitting purposes. Initially, available crop compliance aerial photography is reviewed, including a minimum of five years of slides known to have been taken during normal years of precipitation, based upon the WETS (Wetland Climate Analysis) climate data tables. From the differing signatures on this photography, areas that may be prone to ponding or seasonal flooding, and crop failure or lack of planting can be determined. These photographic signatures must be present in majority of normal precipitation years reviewed to be considered a farmed wetland.

The NRCS Soil Survey also was consulted for determining the presence of possible hydric soils in the area. Additionally, if there are given hydrologic or vegetative indicators on-site to support or refute information gathered by other means, these are documented in final reporting.

Potential farmed wetland boundaries were determined through use of several sources of existing data as given in Table 1.

Table 1: Farmed Wetland Data

Wetland Report Exhibit	Title of data source	Wetland(s) and/or hydric soils indicated	Comments
3	National Wetland Inventory Map	No	
7	NRCS Soil Survey for Lake County	Yes	Several areas of hydric soils were mapped on the project site.
10	WETS tables Mundelein IL	-	

A farmed wetland determination was performed using crop compliance slides from the McHenry-Lake County Soil and Water Conservation District (MLSWCD). The Mundelein WETS table provided in Exhibit 10 was used to determine normal, wet, and dry precipitation years following the NRCS method. Crop compliance aerials from 2001, 2006, 2007, 2010, and 2014 represent normal precipitation years and a crop compliance aerial from 2015 represents a wet precipitation year. The aerial slides used are provided in Exhibits 11 A-F.

WETLAND DELINEATION RESULTS

No wetlands were observed or delineated on the project site. No USACE jurisdictional data forms for upland and wetland areas are included because no wetlands were observed. The site is largely cropped and in a healthy crop of soybeans. Farmed wetlands were assessed as described in the farmed wetland sections of this report. Representative color photographs of the site conditions are provided in Exhibit 9.

Farmed Wetland Determination Results

Aerial photographs (Exhibit 11 A-F) were examined and potential farmed wetlands (PFW) showing a potential wet signature were noted. Normal precipitation years reviewed were 2001, 2006, 2007, 2010, and 2014 and a crop compliance aerial from 2015 represented a wet year. Each PFW was evaluated year-by-year using the criteria set forth by FSA and USDA-NRCS standards. The results are summarized in Table 2.

Table 2. Summary of Potential Farmed Wetland Slide Review

Year	Precipitation Evaluation	PFW Signatures
2001	Normal	None Discernable
2006	Normal	None Discernable
2007	Normal	None Discernable
2010	Normal	PFW1, PFW2
2014	Normal	PFW1, PFW2
2015	Wet	PFW1, PFW2
NWI	--	None
Hydric	--	yes

The aerial photographs inspected for wetland signatures reveal no farmed wetlands that were apparent in a majority of normal precipitation years.

SUMMARY AND CONCLUSIONS

This wetland investigation of the project site resulted in no wetlands/Waters or farmed wetlands being delineated or determined to be present.

References

Swink, F. and G. Wilhelm. 1994. Plants of the Chicago Region. Indiana Academy of Science, Indianapolis, Indiana.

U.S. Army Corps of Engineers Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.

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USDA Natural Resources Conservation Service. 2010. Field Indicators of Hydric Soils in the United States, Version 7.0. L.M. Vasilas, G.W. Hurt, and C.V. Noble (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

Wilhelm, G. and L. Rericha. 2017. Flora of the Chicago Region: A Floristic and Ecological Synthesis. Indiana Academy of Science, Indianapolis, Indiana.

0 1000 Feet

N
W E
S

Legend:

Project Boundary

Project Number: 22-0323

Date: 9/1/2022

Project Name:
Midlothian Road at Peterson Road

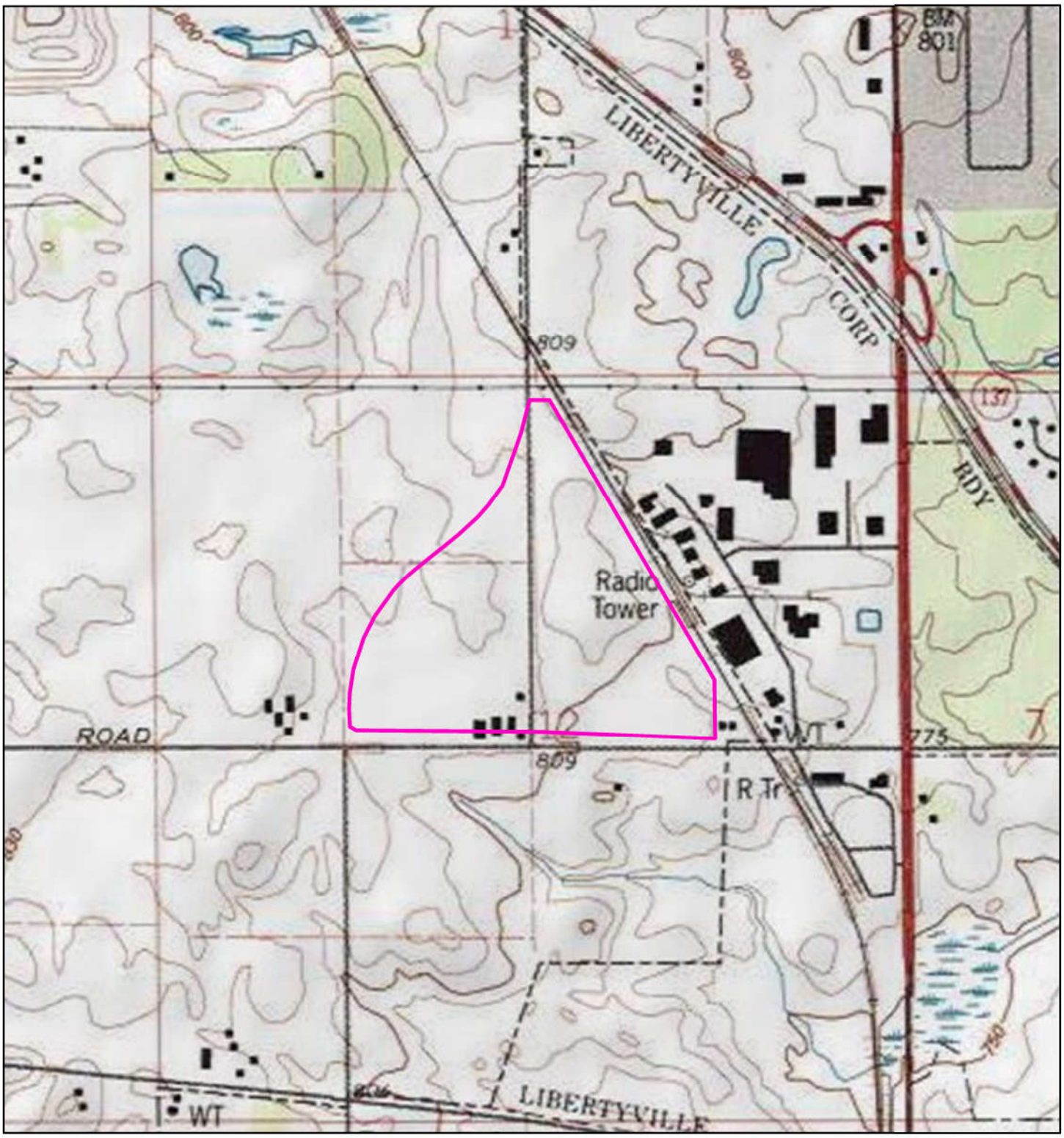
Prepared for:
BCI Acrylic Bath Systems

Location Information:
T.44N., R.10E., Section 12

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title:
Project Location

Exhibit:
1



0 1000 Feet

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S

Legend:

Project Boundary

Project Name:
Midlothian Road at Peterson Road

Project Number:22-0323

Prepared for:
BCI Acrylic Bath Systems

Date: 9/1/2022

Location Information:
Grayslake Quadrangle

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title:
USGS Topographic Map

Exhibit:
2

0 600 Feet

N
W E
S

Legend:
- Project Boundary
- National Wetland Inventory

Project Number: 22-0323

Date: 9/1/2022

Project Name:
Midlothian Road at Peterson Road

Prepared for:
BCI Acrylic Bath Systems

Location Information:
Grayslake Quadrangle

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title:
National Wetland Inventory

Exhibit:
3

0 600 Feet

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Legend:

- Project Boundary
- Rivers and Streams
- Lakes and Ponds
- ADID Wetlands (1992)
- LCWI

Project Number: 22-0323

Date: 9/1/2022

Project Name:
Midlothian Road at Peterson Road

Prepared for:
BCI Acrylic Bath System

Location Information:
Fremont Township

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title:
Lake County Wetland Inventory

Exhibit:
4

0 600 Feet

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W E
S

Legend:
Project Boundary

Project Number:22-0323

Date: 8/25/2022

Project Name:
Midlothian Road at Peterson Road

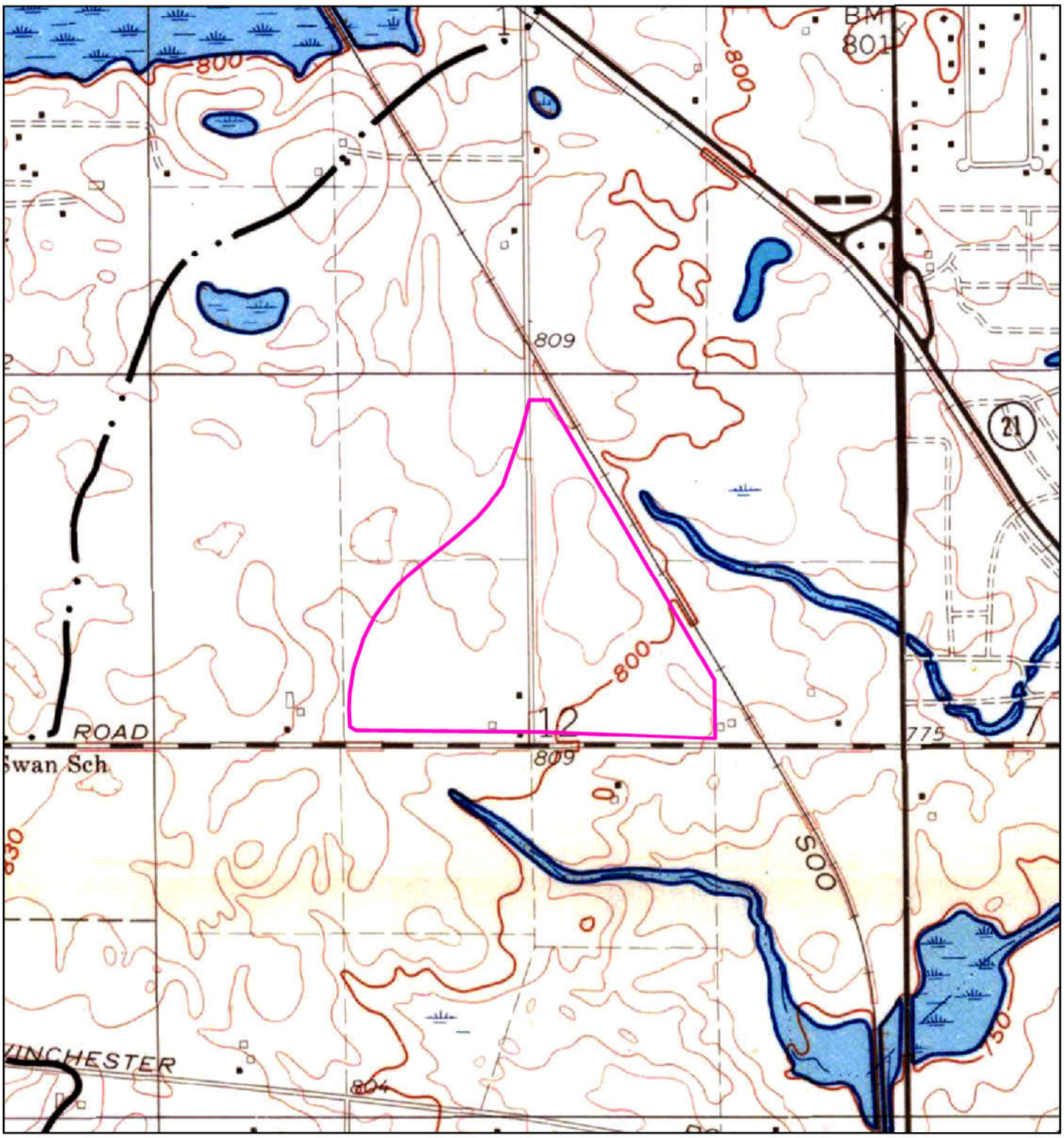
Prepared for:
BCI Acrylic Bath Systems

Effective Date:
September 18, 2013

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title:
FEMA Flood Hazard Zones

Exhibit:
5



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N
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S

Legend:
Project Boundary

Project Name:
Midlothian Road at Peterson Road

Project Number: 22-0323

Prepared for:
BCI Acrylic Bath Systems

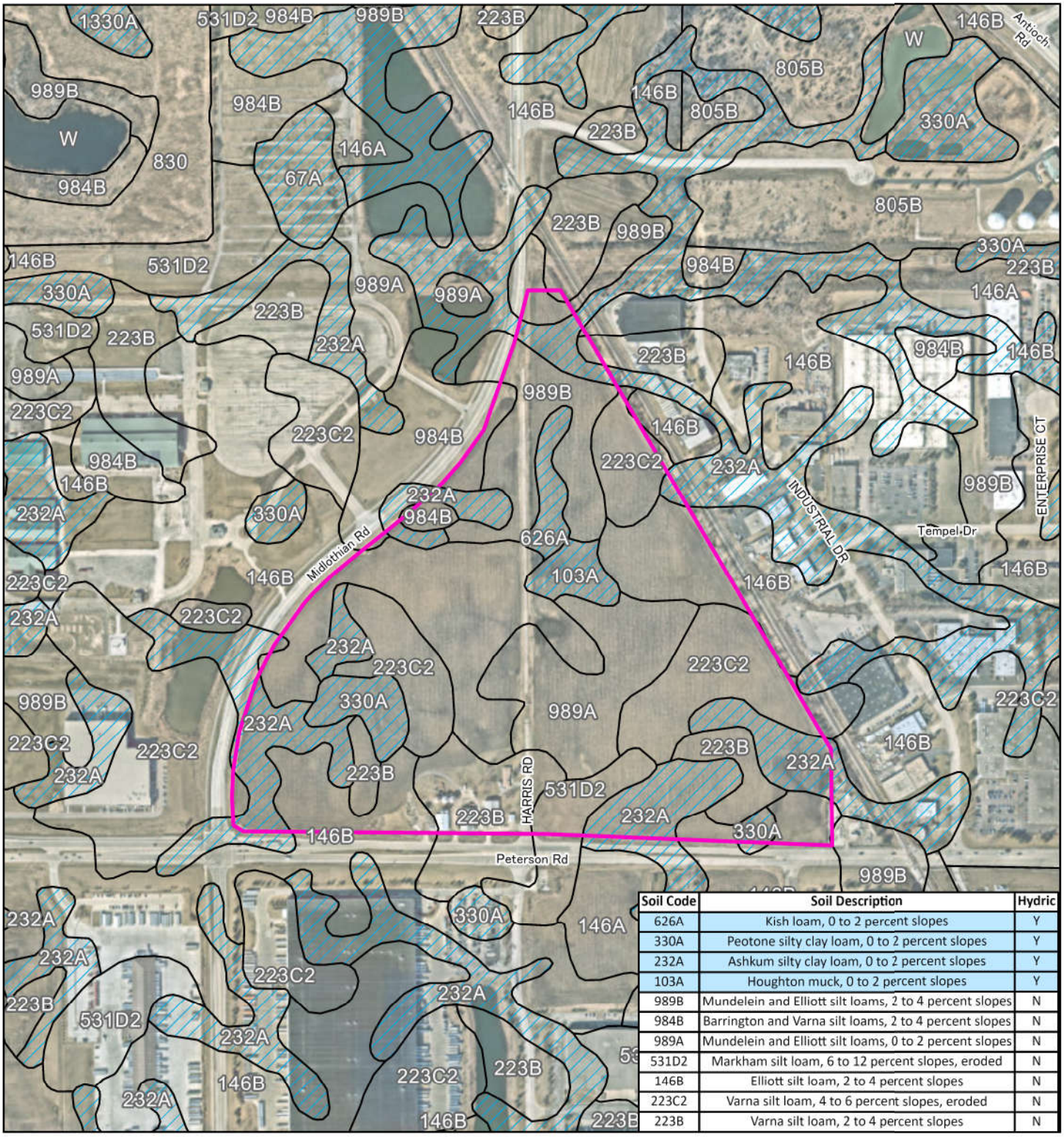
Date: 9/1/2022

Hydrologic Atlas Date:
1967

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title:
USGS Hydrologic Atlas

Exhibit:
6



Soil Code	Soil Description	Hydric
626A	Kish loam, 0 to 2 percent slopes	Y
330A	Peotone silty clay loam, 0 to 2 percent slopes	Y
232A	Ashkum silty clay loam, 0 to 2 percent slopes	Y
103A	Houghton muck, 0 to 2 percent slopes	Y
989B	Mundelein and Elliott silt loams, 2 to 4 percent slopes	N
984B	Barrington and Varna silt loams, 2 to 4 percent slopes	N
989A	Mundelein and Elliott silt loams, 0 to 2 percent slopes	N
531D2	Markham silt loam, 6 to 12 percent slopes, eroded	N
146B	Elliott silt loam, 2 to 4 percent slopes	N
223C2	Varna silt loam, 4 to 6 percent slopes, eroded	N
223B	Varna silt loam, 2 to 4 percent slopes	N

0 600 Feet

N
W E
S

Legend:
- Project Boundary
- Soils Units
- Hydric Soils

Project Number: 22-0323

Date: 9/1/2022

Project Name:
Midlothian Road at Peterson Road

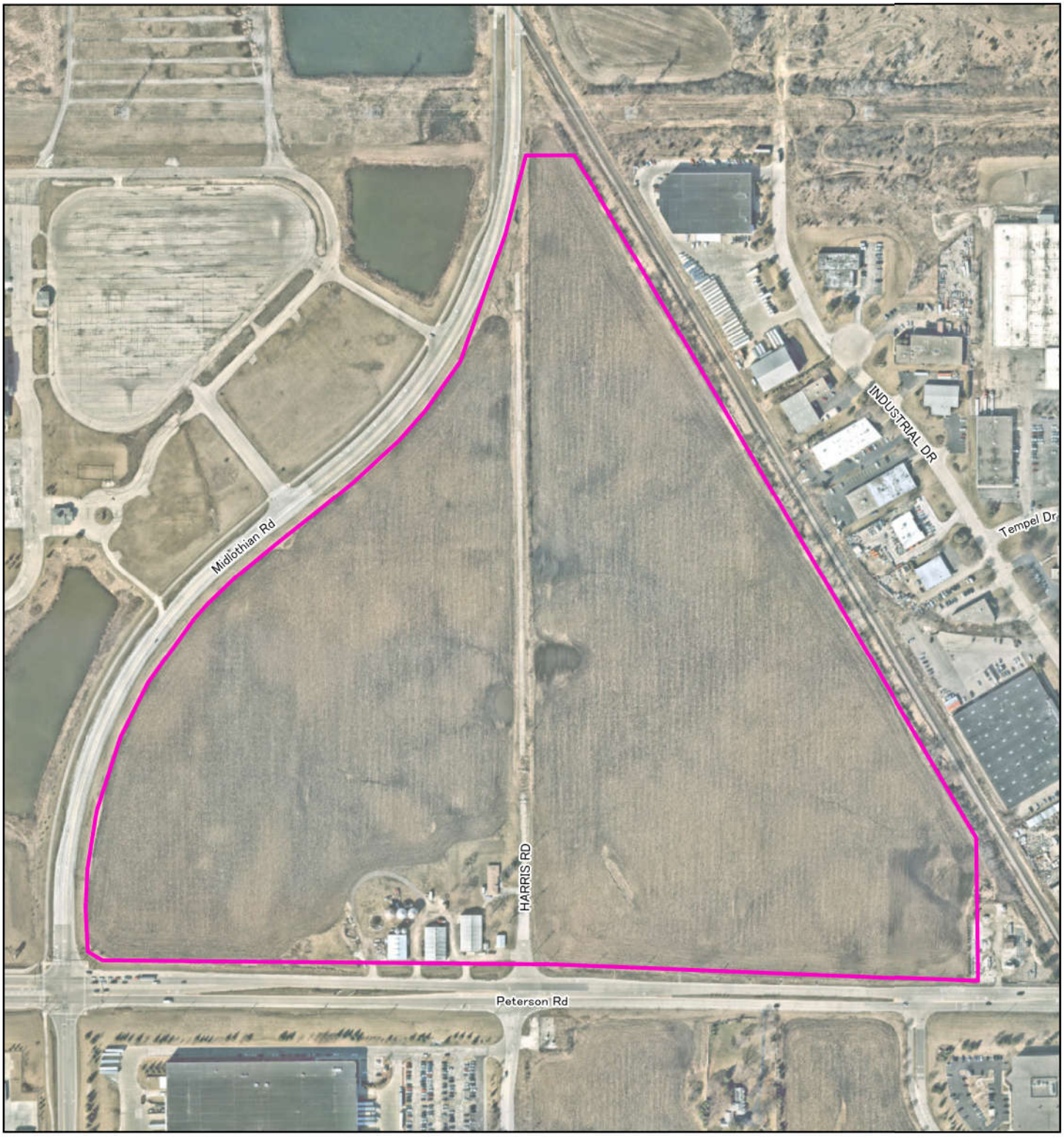
Prepared for:
BCI Acrylic Bath Systems

Soil Survey Date:
2019

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title:
NRCS Soil Survey

Exhibit:
7



0 475 Feet

N
W E
S

Legend:
Project Boundary

Project Name:
Midlothian Road at Peterson Road

Project Number: 22-0323

Prepared for:
BCI Acrylic Bath Systems

Date: 9/1/2022

Aerial Date:
2020

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title:
Aerial Photograph

Exhibit:
8

Photograph 1:

View east of Potential Farmed Wetland 1.

Photograph 2:

View east of Potential Farmed Wetland 2.

Photograph 3:

View north of Potential Farmed Wetland 2 grading back into healthy soybeans.

Photograph 4:

View north along abandoned Harris Road corridor through project site.

Photograph 5:

View northeast across soybean field on project site.

Photograph 6:

View north from southeast property corner.

WETS Station: MUNDELEIN 4 WSW

Requested years: 1989 - 2019

Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall
Jan	29.6	13.6	21.6	1.62	1.07	1.94	4	11
Feb	32.7	15.2	23.9	2.12	1.33	2.55	5	12.6
Mar	44.7	25.7	35.2	2.48	1.61	2.99	6	5.3
Apr	57.5	36.2	46.9	3.73	2.88	4.32	8	1.7
May	68.2	47.6	57.9	4.75	3.51	5.57	9	0
Jun	77.8	57.8	67.8	4.64	3.13	5.55	8	-
Jul	82.5	62.5	72.5	4.21	2.81	5.04	6	-
Aug	81	61	71	3.89	2.58	4.66	6	-
Sep	74.8	53.5	64.1	3.67	1.85	4.48	6	-
Oct	61.2	41.8	51.5	3.24	1.93	3.93	6	0
Nov	47.1	30.3	38.7	2.26	1.34	2.74	5	2.5
Dec	34.4	19.1	26.7	2.27	1.47	2.73	5	10
Annual:					34.68	43.06		
Average	57.6	38.7	48.2	-	-	-	-	-
Total	-	-	-	38.86			73	-

GROWING SEASON DATES

Years with missing data:	24 deg = 11	28 deg = 11	32 deg = 11
Years with no occurrence:	24 deg = 0	28 deg = 0	32 deg = 0
Data years used:	24 deg = 20	28 deg = 20	32 deg = 20
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent *	3/31 to 11/12: 226 days	4/16 to 10/25: 192 days	4/30 to 10/17: 170 days
70 percent *	3/27 to 11/17: 235 days	4/11 to 10/31: 203 days	4/27 to 10/20: 176 days

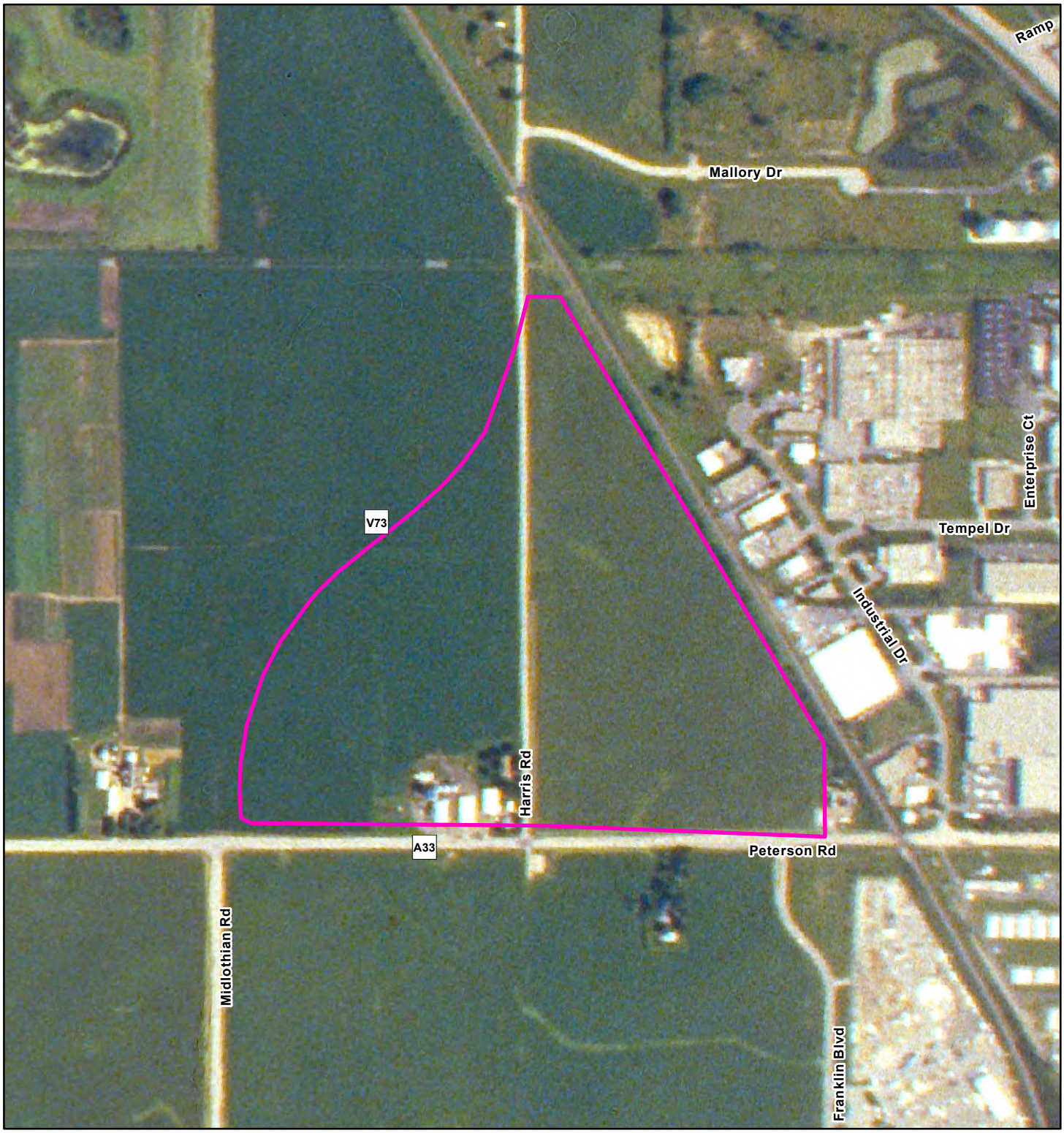
* Percent chance of the growing season occurring between the Beginning and Ending dates.

STATS TABLE - total precipitation (inches)

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl	
1999					2.78	4.76	2.6	2.33	4.83	1.11	0.39	1.91	20.71	dry
2000	1.36	1.44	1.13	4.53	5.68	7.14	6.28	2.68	5.31	1.43	3.8	2.3	43.08	wet
2001	1.18	2.27	0.93	3.02	4.42	2.86	2.83	4.11	5.27	7.63	1.36	1	36.88	normal
2002	1.02	1.36	2.32	2.59	3.26	3.88	0.75	7.14	3.37	1.68	0.71	0.84	28.92	dry
2003	0.35	0.2	1.66	2.47	7.22	2.45	4.76	1.08	1.94	1.87	5.22	2.36	31.58	dry
2004	0.91	0.86	5.04	1.76	8.75	4.04	3.12	2.3	0.4	2.34	3.13	1.67	34.32	dry
2005	3.63	1.75	0.7	2.05	3.57	0.69	3.14	2.81	2.63	0.52	3.01	0.98	25.48	dry
2006	2.68	1.47	4.1	2.79	4.53	3.87	4.92	4.81	2.89	5.11	2.71	3.04	42.92	normal
2007	1.17	2.83	3.97	4.36	1.43	3.18	3.44	12.48	0.82	2.4	0.8	3.58	40.46	normal
2008	1.37	5.15	2.38	4.62	3.41	5.57	3.7	1.68	9.57	2.37	1.27	5.21	46.3	wet
2009	1.22	2.51	4.45	5.06	4.08	5.14	3.11	5.39	1.04	6.1	1.58	3.64	43.32	wet
2010	0.98	1.46	1.8	2.01	6.48	6.89	7.06	2.67	2.84	1.28	0.98	1.43	35.88	normal
2011	1.06	3.73	4.15	5.57	6.63	2.91	5.88	5.03	3.24	1.98	3.18	2.29	45.65	wet
2012	1.35	1.64	1.9	4.02	1.79	1.56	2.68	1.98	1.71	2.58	0.56	2.51	24.28	dry
2013	2.9	3.14	1.91	8.17	2.63	6.05	2.24	1.44	2.57	2.31	3.12	1.56	38.04	normal
2014	2.08	2.09	1.16	3.28	4.29	7.9	3.31	4.23	3.7	4.01	1.25	0.67	37.97	normal
2015	1.23	1.55	1.17	4.29	4.31	3.85	5.75	4.15	4.59	1.45	5.05	5.72	43.11	wet
2016	0.51	1.13	3.5	2.69	5.07	2.61	4.74	3.79	2.93	3.57	2.81	1.69	35.04	normal
2017	2.7	1.01	4.44	4.75	4.78	7.71	11.07	4.32	0.24	7.64	1.67	0.71	51.04	wet
2018	1.43	3.07	1.02	2.88	6.84	9.62	1.21	4.09	6.53	4.71	3.25	2.33	46.98	wet
2019	3.17	3.67	1.93	3.63	7.71	4.81	5.8	3.09	10.62	5.96	1.58	2.2	54.17	wet
2020	2.98	0.68	4.75	5.61	7.75	2.6	2.99	1.31	4.87	2.92	1.84	2.4	40.7	normal
2021	2.01	1.07	0.9	0.79	1.38	6.49	1.8	3.36	1.94	5.41	0.87	2.46	28.48	dry
2022	0.59	1.8	2.98	4.97	4.89	2.63	M4.85	M2.12					24.83	dry

Notes: Data missing in any month have an "M" flag. A "T" indicates a trace of precipitation.

Data missing for all days in a month or year is blank.



Scale:

0 1,000 Feet

Orientation:

Legend:

Project Boundary

Project Number: 22-0323 Date: 8/26/2022

Prepared by:

Hey and Associates, Inc.

Engineering, Ecology and Landscape Architecture

Project Name:
Midlothian Road at Peterson Road

Prepared for:
BCI Acrylic Bath Systems

Aerial Year:
2001

Exhibit Title:
Aerial Crop Slides

Exhibit:
11A

Scale:

0 1,000 Feet

Orientation:

Legend:

Project Boundary

Project Name:
Midlothian Road at Peterson Road

Prepared for:
BCI Acrylic Bath Systems

Project Number: 22-0323 Date: 8/26/2022

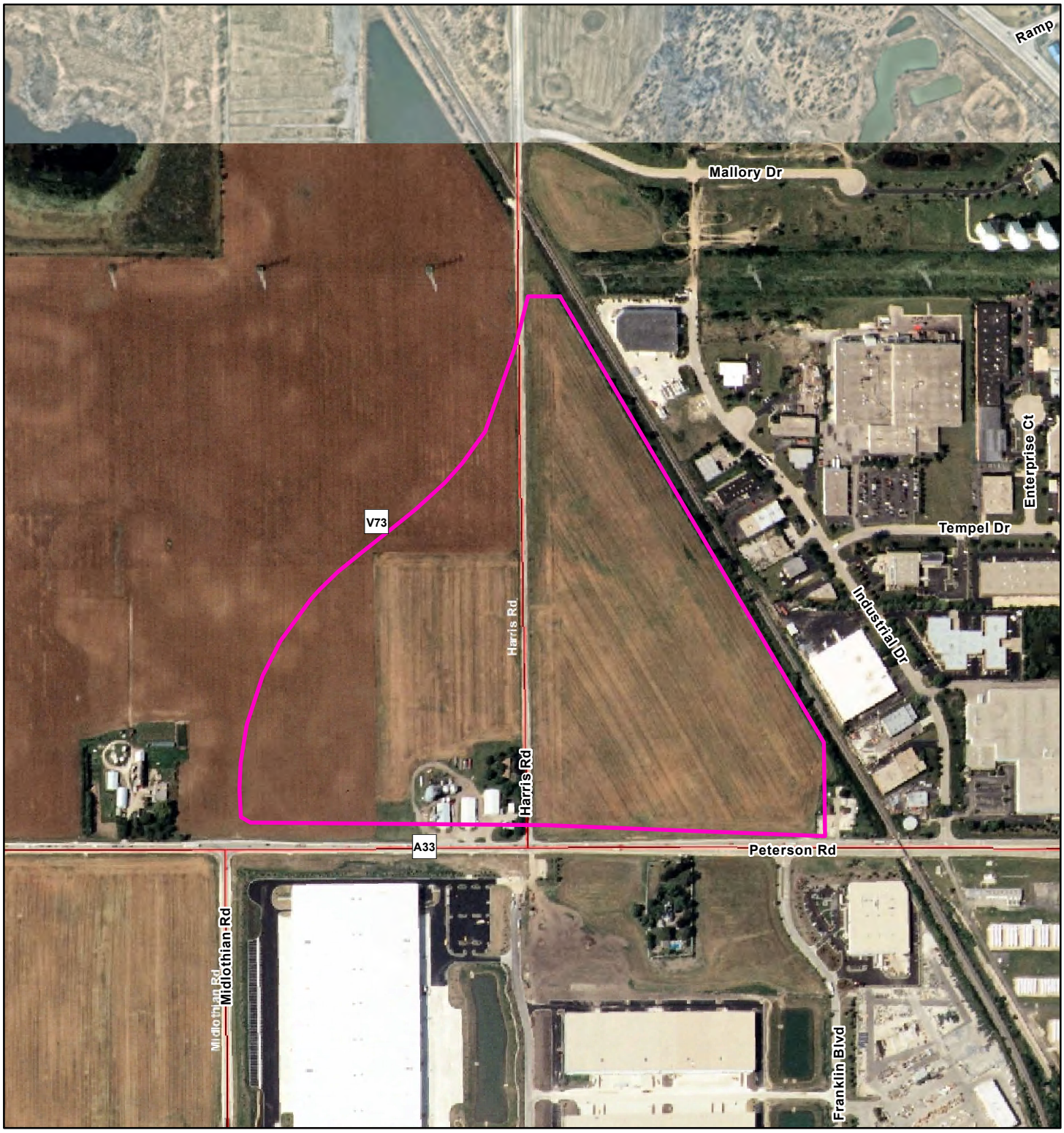
Aerial Year:
2006

Prepared by:

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title:
Aerial Crop Slides

Exhibit:
11B



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Orientation:

Legend:

Project Boundary

Project Number: 22-0323 Date: 8/26/2022

Prepared by:

Hey and Associates, Inc.

Engineering, Ecology and Landscape Architecture

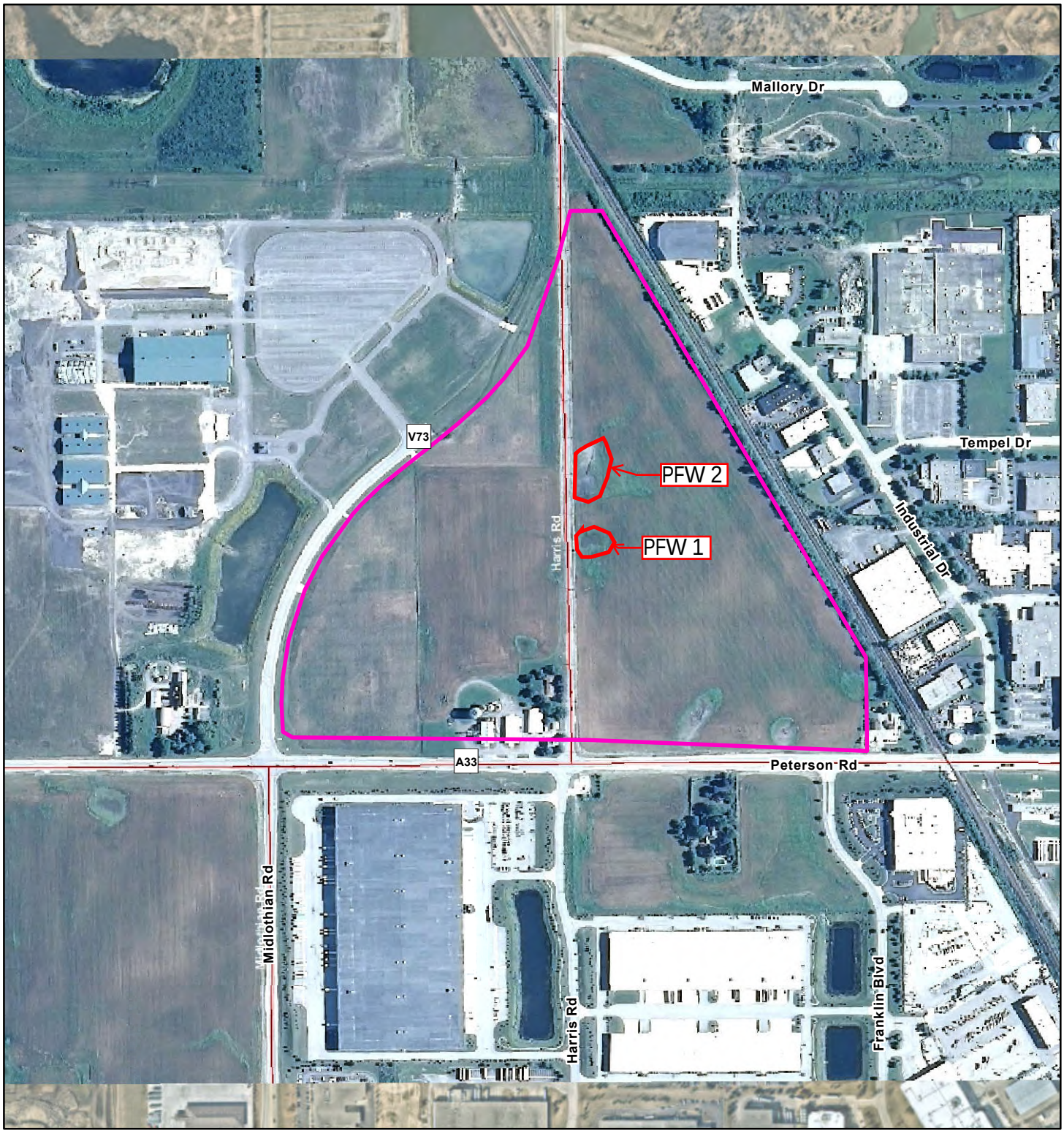
Project Name:
Midlothian Road at Peterson Road

Prepared for:
BCI Acrylic Bath Systems

Aerial Year:
2007

Exhibit Title:
Aerial Crop Slides

Exhibit:
11C



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Orientation:

Legend:

Project Boundary

Project Number: 22-0323 Date: 8/26/2022

Prepared by:

Hey and Associates, Inc.

Engineering, Ecology and Landscape Architecture

Project Name:
Midlothian Road at Peterson Road

Prepared for:
BCI Acrylic Bath Systems

Aerial Year:
2010

Exhibit Title:
Aerial Crop Slides

Exhibit:
11D

Scale:

0 1,000 Feet

Orientation:

Legend:

Project Boundary

Project Name:
Midlothian Road at Peterson Road

Prepared for:
BCI Acrylic Bath Systems

Project Number: 22-0323 Date: 8/26/2022

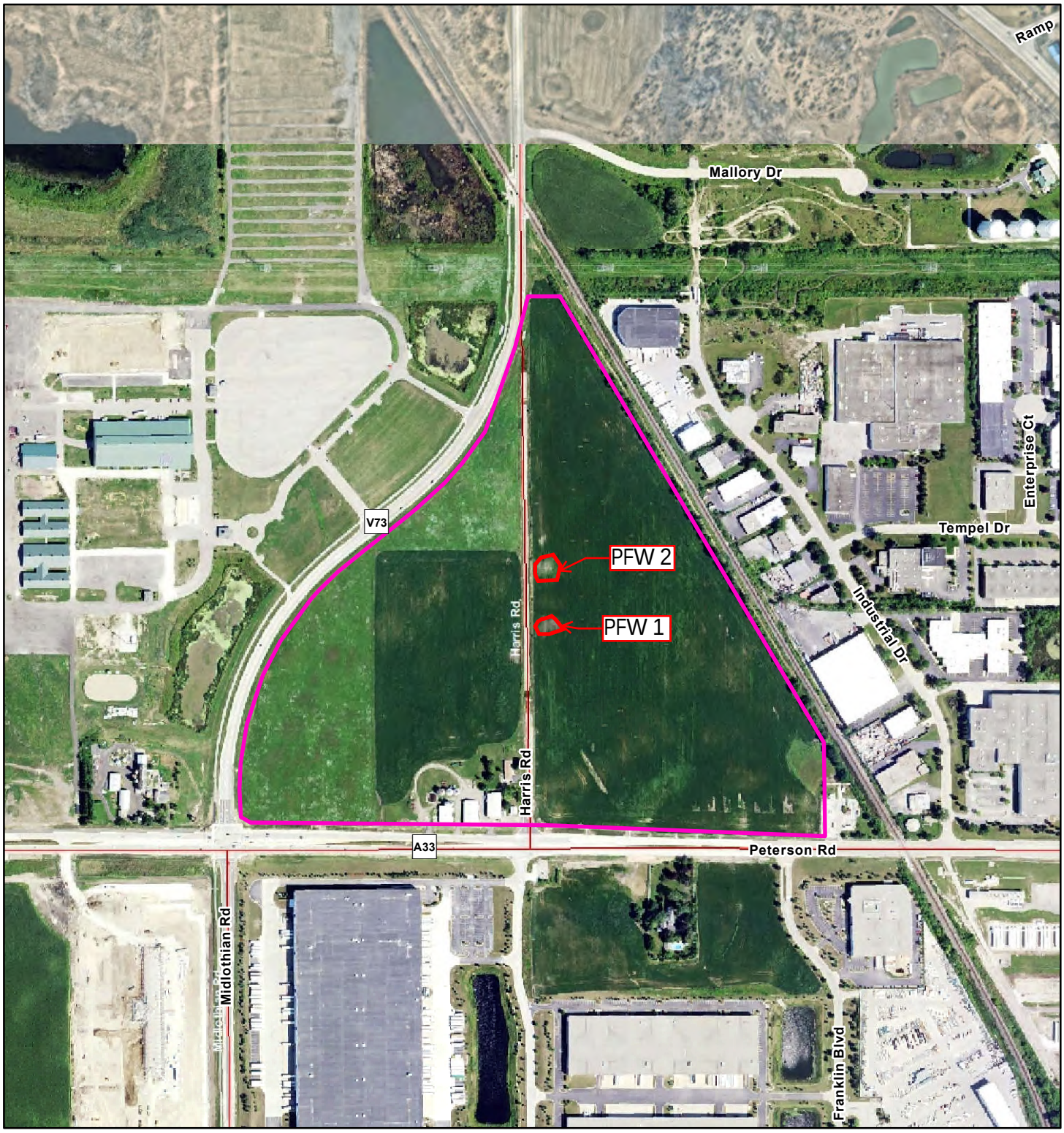
Aerial Year:
2014

Prepared by:

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title:
Aerial Crop Slides

Exhibit:
11E



Scale:

0 1,000 Feet

Orientation:

Legend:

Project Boundary

Project Name:
Midlothian Road at Peterson Road

Prepared for:
BCI Acrylic Bath Systems

Project Number: 22-0323 Date: 8/26/2022

Aerial Year:
2015

Prepared by:

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title:
Aerial Crop Slides

Exhibit:
11F