

ADDENDUM #01

DATE:	09-17-2026		
PROJECT:	Kollar Pond Phase 1	PROJECT #:	24255 CH
LOCATION:	Streamwood, IL		
OWNER:	Village of Streamwood	BID REQUEST #:	
CONSULTANT:	Confluence		
CONTACT:	Mr. Devon Dillinger, PLA, ASLA, SITES AP 307 N Michigan Ave, Suite 601 Chicago, Illinois, 60601 ddillinger@thinkconfluence.com		

BID SUBMISSION: Sealed bids shall be received by **Owner**, 565 S Bartlett Rd, Streamwood, IL 60107, not later than **3 pm local standard time on September 29, 2026.**

This Addendum forms a part of the Contract Documents and is issued prior to receiving bids for the project. The addendum modifies the original bidding documents dated July 31, 2026, with amendments and additions noted below. The bidder shall note receipt and make acknowledgement of this addendum on the Bid Proposal Form, incorporating these provisions in the bid. All items in conflict with this addendum are hereby deleted.

This Addendum consists of 07 page(s), not including attachments.

Pre Bid Meeting Agenda and Sign in Sheet, G23.178 Kollar Park Draft Boring Logs 11-2, G23.178 Kollar Park Pond Improvements Geotech Report, G23.178_ADD1 Kollar Park Pond Improvements in Streamwood, Spec 00 01 10, Spec 00 01 15, Spec 31 37 00, Spec 33 46 23, Sheet GN000, Sheet LP 100, Sheet LS500, Sheet C401

General

1. Bid due date has been extended from 9/22/26 to 9/29/26 @ 3 pm CT:
 - a. Substitution requests window now ends September 19, 2026
 - b. Bidder questions window now ends September 24, 2026
 - c. Last addendum, if any, will be released by September 25, 2026

Product Approvals

1. None

Project Manual

1. 00 01 10 – Table of Contents
 - a. **ADD** 31 37 00 to Table of Contents
 - b. **OMIT** 31 63 29 from Table of Contents
2. 00 01 15 – List of Drawing Sheets
 - a. **ADD** C401 to list
3. 31 63 29 – Drilled Concrete Piers and Shafts
 - a. **OMIT** specification
4. 31 37 00 – Rip Rap
 - a. **ADD** specification
5. 33 46 23 – Modular Buried Stormwater Storage Units
 - a. **REVISE** Part 2, 2.01,A, Basis of Design from “900SD and 300SD” to “600HD”

Drawings

- Sheet GN000
 - **ADD** C401 to Drawing Sheet Index
- Sheet LP100
 - **ADD** American Cranberrybush, *Viburnum trilobum* (VA) and QTY of 56 to plant schedule
- Sheet LS500
 - **ADD** dimensions and labels to 7/LS500
 - **ADD** dimensions to 14/LS500
- Sheet C401
 - **ADD** sheet

Bidder Q&A

- 1) **Question: “We would like pdf’s of the geotechnical report.” (Received: 09-09-2026)**
 - a. *ANSWER: Geotechnical report and addenda have been provided.*
- 2) **Question: “Would it be possible for you to provide the CAD Files for the existing and proposed grading?” (Received: 09-09-2026)**
 - a. *ANSWER: This will be addressed in Addendum #2*
- 3) **Question: “How was the existing topo performed?” (Received: 09-09-2026)**
 - a. *ANSWER: The survey was provided to the design team. It was prepared by WT Group, with fieldwork completed 10/31/2023 and issued 11/21/2023.*
- 4) **Question: “Do you have any information about the depth of sediment in the bottom of the pond?” (Received: 09-09-2026)**
 - a. *ANSWER: Refer to Rubino Report G23.178, Table 1 and Appendix L, for pond sampling information. Sediment thickness is not established.*
- 5) **Question: “What do the existing ground shots in the pond represent? Are they the actual top of sediment / muck or are they top of hard pan clay?” (Received: 09-09-2026)**
 - a. *ANSWER: The survey was prepared by WT Group. WT Group would need to confirm. Bidder can contact WT Group (224-293-6333); Job S2300148 Kollar Park Topographic Survey.*

- 6) Question: "Has any of the soil on site or sediment been tested for environmental contaminants?" (Received: 09-09-2026)
a. ANSWER: *The soils & sediment were tested and found to be CCDD in 2023.*
- 7) Question: "Does the owner have a current LP-662 / LP-663?" (Received: 09-09-2026)
a. ANSWER: *The 663 form is currently being updated.*
- 8) Question: "Please confirm the anticipated Notice to Proceed date and whether the Village has a required substantial completion date, final completion date, or any milestones that the contractor is expected to incorporate into the Contract Time entered on the Bid Form." (Received: 09-09-2026)
a. ANSWER: *The bidder shall enter the bidders estimated anticipated calendar weeks to complete the work from NTP. NTP is expected within 90 days of the bid due date.*
- 9) Question: "Can you confirm that all QA/QC testing services will be provided by the owner?" (Received: 09-09-2026)
a. ANSWER: *The Owner will provide specified independent testing. Contractor-required testing and retesting due to noncompliant work remain the Contractor's responsibility. Refer to Section 01 40 00 and individual specification sections.*
- 10) Question: "Will we need to provide any additional bonds for the work in the Irving Park Road Right of Way?" (Received: 09-09-2026)
a. ANSWER: *IDOT will require a bond for work in the ROW. The IDOT bond will be in addition to the payment and performance bond required by the Village.*
- 11) Question: "Does the owner have a preferred supplier for the natural stone steps?" (Received: 09-09-2026)
a. ANSWER: *No preferred supplier. Provide natural limestone steps from one source, matching the limestone boulders in color and character, with finishes as specified. Submittal required during construction.*
- 12) Question: "Does the owner have a preferred supplier or color for the Limestone Boulders for the retaining walls and seat walls?" (Received: 09-09-2026)
a. ANSWER: *No preferred supplier. Provide natural limestone boulders from one source with a consistent natural earth-tone range and weathered, split, or quarry texture. Submittal required during construction.*
- 13) Question: "This is a lot of trades to get coordinated in such a short amount of time. Is there a reason the bid turnaround is so short?" (Received: 09-10-2026)
a. ANSWER: *Bid due date extended to Tuesday, September 29, 2026 @ 3 pm CT.*
- 14) Question: "Can you give us the size of the pad we need to pour for the pipeline protection?" (Received: 09-14-2026)
a. ANSWER: *Size of the pad is 5' x 55'.*
- 15) Question: "Do we need to hydro-vac or hand dig the 24" pipe removal and installation?" (Received: 09-14-2026)
a. ANSWER: *Yes, hydro-vac or hand dig per the pipeline requirements.*
- 16) Question: "Please define all reinforcement and thickness for Detail 07/LS500" (Received: 09-14-2026)
a. ANSWER: *Detail has been revised.*
- 17) Question: "The specifications contain 033000 Concrete and 033010 Cast in Place Concrete. Please note which concrete items should be utilized for each specification for as the materials seem to be slightly different" (Received: 09-14-2026)
a. ANSWER: *Section 033000 applies to site and landscape cast-in-place concrete, including concrete walks, bands, walls, and site features detailed on the Civil and Landscape drawings. Section 033010 applies to structural concrete associated with the deck, stage,*

pavilion, canopy, structural foundations, footings, piers, and pedestals shown on the Architectural and Structural drawings.

18) Question: "Please note on layout plan where detail 14/LS500 occurs." (Received: 09-14-2026)

a. ANSWER: It is a typical detail applicable to wherever the difference in the sidewalk elevation and the adjacent grade is over 4 inches.

19) Question: "Can you clarify that the grading limits of the project are as noted on sheet LD100?" (Received: 09-14-2026)

a. ANSWER: Yes the grading extent on LD100 is the extent as the owner is performing final grading work in the gas easement.

20) Question: "What is the type and thickness of stone under the proposed stage?" (Received: 09-14-2026)

a. ANSWER: See new specification 31 37 00 Rip Rap.

21) Question: "Can you provide the elevation of the bottom of both detention basins excluding the 6" bedding?" (Received: 09-14-2026)

a. ANSWER: For the underground storm systems, the NW system (under lawn) bottom elevation is ~797.70. For the NE system (under the parking lot), bottom elevation is at ~802.70.

22) Question: "Several notes in the standard detail for the Storm Brixx mention work by others. Can you clarify?" (Received: 09-14-2026)

a. ANSWER: Standard detail for the Storm Brixx mention has been removed from this page. See Section 33 46 23.

23) Question: "Please provide the top-of-stair (T/Stair) and bottom-of-stair (B/Stair) elevations for Detail 07/LS500. Also, please confirm the typical riser height, as the stair configuration shown appears to exceed the typical 4" to 7" riser height." (Received: 09-15-2026)

a. ANSWER: See C600 for grading. General top of stair and bottom of stair in detail, 01/LS302. Detail 07/LS500 has been revised.

24) Question: "The note in Detail 3/SB501.1 states that the columns will be installed in Phase 2. If the columns are not part of this contract, please clarify who will be responsible for furnishing the setting plates and anchor bolts associated with the column installation." (Received: 09-15-2026)

a. ANSWER: Base plate and anchor bolts are part of Phase 2.

25) Question: "Can you tell us how tall this thickened edge or wall is along with a detail? Please provide top of walk and bottom of sidewalk grades in this area." (Received: 09-16-2026)

a. ANSWER: Top of walk at thickened edge at 803.50' in line with deck stage. Bottom of thickened edge varies from 796.00' to 800.00'. Refer to C600 for grading.

26) Question: "I am writing this email to respectfully request an extension for the bid date for the above project. There are so many components to this we are having trouble getting some prices from subcontractors and suppliers." (Received: 09-16-2026)

a. ANSWER: Bid due date extended to Tuesday, September 29, 2026 @ 3 pm CT.

27) Question: "There are plants in the landscape plan labeled "VA" but that designation is not in the plant material table. Can you clarify?" (Received: 09-16-2026)

a. ANSWER: VA is the label for Viburnum trilobum, American Cranberrybush. Refer to LP100.

28) Question: "Can we assume that if sediment is found at the bottom of the pond that disposal will be a changed condition and subject to a change order? If you want to include sediment disposal as part of the lump sum base bid, can you specify a thickness we should anticipate so that all contractors are bidding the same scope?" (Received: 09-16-2026)

- a. *ANSWER: Village had a test performed in the last 5 years with estimated sediment. Report will be included in Add 2.*
- 29) **Question: “The drawings reference planting soil mix but we don’t see a specification. Is the owner requiring a specific soil blend or is that just on-site topsoil?” (Received: 09-16-2026)**
- a. *ANSWER: “Planting Soil Mix” indicated on the drawings shall consist of on-site topsoil meeting the requirements of Section 32 91 19. Amend soil as necessary to provide planting soil suitable for plant growth in accordance with Section 32 93 00, Plants.*
- 30) **Question: “There is a note on LS100 stating Concrete Abutment Extend Sidewalk Down to Grade. Please provide a detail for this work and also T/Sidewalk and Bottom of wall or walk grades so we can determine the height of this” (Received: 09-16-2026)**
- a. *ANSWER: Top of walk at thickened edge is 803.50' flush with deck stage. Bottom of thickened edge varies from 796.00' to 800.00'. Refer to 14/LS500 for Deep Edge Sidewalk and C600 for grading.*
- 31) **Question: “There is no Sheet C501 for detail of sump pit noted on C300. Please provide.” (Received: 09-16-2026)**
- a. *ANSWER: References on Sheet C300 to the NRCS Sump Pit Plan shall read “Sheet C701” in lieu of “Sheet C501.”*
- 32) **Question: “The specification section Div 316329 pages 1-9 includes drilled shafts and piers but we don’t see anything in the drawings. Div 31 Earthwork also include helical anchor piling (316613 pages 1-5) and we don’t see that in the drawings either. Are any deep foundations to be included in our lump sum bid? If so, please provide drawings and details. Additionally, there is a large specification (328423 pages 1-10) for underground sprinklers, but we do not see this in the drawings. Is this work included in the project?” (Received: 09-16-2026)**
- a. *ANSWER: Section 31 63 29: This section does not apply. OMIT Section 31 63 29 (it is not included in the Spec TOC). Section 31 66 13. This applies only to Alternate No. 10, Helical Light Pole Foundations. The Alternate provides contractor designed helical foundations in lieu of the reinforced concrete light pole foundations shown on the Drawings and includes delegated structural design, calculations, details, materials, and installation. Section 32 84 23. Irrigation is included in the project. The irrigation system is a delegated design and therefore a separate irrigation layout is not included in the Drawings. The Contractor shall include design, furnishing, and installation of a complete automatic irrigation system for the turf and plant bed areas in accordance with Section 32 84 23. Delegated design drawings shall be submitted showing piping, sprinkler coverage, valves, equipment, and related components.*
- 33) **Question: “Sheet E501, Detail 2 (Bollard Wiring Detail) directs the contractor to “See civil plans for bollard foundation details.” No such detail appears in the civil set. Please provide the required foundation detail for the FS1 pathway bollards (74 locations shown on E200, Phase 1).” (Received: 09-16-2026)**
- a. *ANSWER: This will be addressed in Addendum #2*
- 34) **Question: “Due to the complexity of the project, we are requesting an extension of the bid opening.” (Received: 09-16-2026)**
- a. *ANSWER: Bid due date extended to Tuesday, September 29, 2026 @ 3 pm CT.*
- 35) **Question: “Plan page LS-500 detail 4 shows a “Deep Edge Sidewalk” we do not see any on the hardscape plan. Please clarify” (Received: 09-16-2026)**
- a. *ANSWER: It is a typical detail applicable to wherever the difference in the sidewalk elevation and the adjacent grade is over 4 inches.*
- 36) **Question: “Is there an acquired easement for the sanitary sewer going between the two houses.” (Received: 09-16-2026)**

- a. *ANSWER: This will be addressed in Addendum #2*
- 37) Question: "Where does the irrigation system tie into the city water main and is there any specifications on the PSI or GPM of the system or is that part of the design." (Received: 09-16-2026)
- a. *ANSWER: This will be addressed in Addendum #2*
- 38) Question: "Can you be more specific on what items you want to be part of QC-QA. Obviously concrete, maybe stone in the parking lot. Do you want the base of all the footing for the columns tested. We have never done tests under sidewalks etc. Please clarify" (Received: 09-16-2026)
- a. *ANSWER: Required QA/QC includes concrete testing, earthwork and aggregate compaction testing, and geotechnical review of footing bearing surfaces before concrete placement. Sidewalk subgrades and bases are included. Additional testing and inspections remain required where specified for individual systems.*
- 39) Question: "Keynote 23 on plan page LS100 calls out "Temporary Guard Rail", we are not seeing any or a detail for it. Please clarify." (Received: 09-16-2026)
- a. *ANSWER: The temporary guard rail is located on the thickened concrete walk on the western side of the deck stage. No drawing detail provided, refer to Section 055213, Part 2.01.A for further information.*
- 40) Question: "Can you clarify that we are to Include Federal & State taxes in our proposal? That's very unusual for a public bid." (Received: 09-16-2026)
- a. *ANSWER: Include all, if any, applicable taxes in the Bid Price. Exclude sales and use taxes on materials qualifying for the Village's exemption. Village will provide its tax-exempt certificate.*
- 41) Question: "Can you provide a layout for the design/build irrigation system? Where is the existing water service and meter located? Also, will an RPZ and hot box be required for the system?" (Received: 09-16-2026)
- a. *ANSWER: Irrigation layout is Contractor delegated design per Section 32 84 23. Provide irrigation for turf and non-aquatic planting beds. A backflow preventer enclosure is specified.*
- 42) Question: "Would a wet well and irrigation pump system be an acceptable approach for this project? Additionally, can you clarify the intended extent of irrigation? Is the irrigation system intended to serve only the landscaped planting beds, or is it expected to provide coverage for all seeded and restored areas throughout the site?" (Received: 09-16-2026)
- a. *ANSWER: No, a well is not acceptable. Irrigation includes turf and non-aquatic planting beds, per irrigation specification. Yes, this includes seeded areas, Section 32 84 23, Paragraph 2.01.A.*
- 43) Question: "Can you confirm whether the planned electrical service has been sized accordingly to accommodate the irrigation demand? Any available information regarding the anticipated irrigation system capacity or electrical requirements would be appreciated." (Received: 09-16-2026)
- a. *ANSWER: Available power and connection requirements will be clarified by addendum following confirmation of the irrigation water source.*
- 44) Question: "Are plant substitutions, based on availability, to be sent and reviewed by the design team for approval?." (Received: 09-16-2026)
- a. *ANSWER: Submit proposed plant substitutions for design team review during the bidding substitution period. During construction, substitutions may be considered with documentation of specified plant unavailability. All substitutions require approval before purchase or installation.*

45) Question: “Question regarding the railing on the deck.” (Received: 09-16-2026)

- a. *ANSWER: Streetlife (Basis of Design) will be providing quotes for the design railing and will share that pricing with the parties that have reached out for pricing.*

46) Question: “Question regarding decking.” (Received: 09-16-2026)

- a. *Streetlife (Basis of Design) has discovered issues with the project proposed decking that will require the design team to redesign the decking solution provided. Revised decking and decking structure documents will be provided in a future addendum.*

End of Addendum #01

PRE-BID MEETING AGENDA

PROJECT: **Kollar Pond Phase 1** PROJECT #: 24255 CH
DATE / TIME: 09/16/2026 / 3:00 pm CT
RE: Pre-Bid Meeting

1. Introductions:

- a. DESIGN PROFESSIONAL(S).
- b. OWNER.
- c. Collect attendee names, companies, phone numbers, and email addresses through Zoom chat for the attached sign-in sheet.

2. Project Description:

The Kollar Pond Phase 1 project consists of improvements to Kollar Pond and the surrounding park area in the Village of Streamwood, Illinois. The scope includes, but is not limited to, renovation, expansion, and deepening of the existing pond; pond-edge improvements; grading, excavation, storm drainage, utilities, erosion control, and site restoration; construction of pedestrian paths, paved gathering areas, decks, steps, walls, seating areas, gateway features, amphitheater improvements, and related site structures; and installation of lighting, landscaping, irrigation, site furnishings, interactive sculptural elements, and other associated improvements shown in the Contract Documents.

3. Bid Date/Time/Place:

- a. 9/22/2026 @ 3 pm CT.
- b. Bids received at the office of the Owner, 565 S Bartlett Rd, Streamwood, IL 60107.
- c. Submit one copy of the executed offer on the Bid Forms provided, signed and sealed with the required security in a closed opaque envelope, clearly identified with bidder's name, project name and Owner's name on the outside.
- d. Offers submitted after the above time will be returned to the bidder unopened.
- e. Public bid opening/bids read aloud.
- f. Section 00 21 13 states a 90-day bid-hold period.

4. Bid Submittals:
 - a. Submit with the Bid: signed Bid Form (00 41 00); bid bond (00 42 01); signed and notarized Work History Statement (00 42 02) and Bidder Certification (00 42 03); Unit Prices Form (00 43 22); Alternates Form (00 43 23); and proposed subcontractor information (00 43 36). See Section 00 21 13, 7.02.
 - b. Bid security shall be a bid bond of not less than 10% of the Bid Amount.
5. Addenda/Interpretations:
 - a. Written requests must be received not less than 5 calendar days prior to bid date.
 - b. Official answers are released only by Addenda, posted to the plan room (BHFX Digital Imaging Online Plan Room). Verbal and email answers are not binding on any party.
6. Substitutions:
 - a. Written requests must be made at least 10 days prior to the date set for receipt of bids.
 - b. Section 00 21 13 references Form 00 43 25 for procurement substitution requests. Availability of the form will be addressed by addendum.
 - c. No substitutions officially accepted until noted as such in addenda.
 - d. Bidder is responsible to demonstrate equal or better characteristics of requested substitute.
7. Contract Conditions:
 - a. Federal and State of Illinois taxes are included in the Bid Price.
 - b. Contract Time is proposed by the Bidder as a number of calendar weeks from Notice to Proceed (Bid Form Section 1.07); the completion date in the Agreement will equal the Contract Time added to the commencement date.
 - c. Contractor and each subcontractor shall pay not less than the prevailing wage as determined by the Illinois Department of Labor, in accordance with the Illinois Prevailing Wage Act.
8. Proposed Subcontractors (with Bid):
 - a. Proposed Subcontractors Form (Document 004336) to be submitted with the Bid.
9. Form of Agreement:
 - a. See draft Agreement in Section 005200 of the specifications.
10. Performance and Payment Bond (successful bidder):
 - a. Provide bonds at Agreement execution and within 10 days after notification of award, as specified.
 - b. Faithful performance bond and labor/material bond, each in the amount of 100% of the contract price.
 - c. Bonding company must be acceptable to the Village.
 - d. IDOT requires a separate bond for work within the Irving Park Road right-of-way, in addition to the Village payment and performance bonds.

11. Insurance (successful bidder):

- a. Commercial General Liability: the draft Agreement requires \$2,000,000 per occurrence.
- b. Automobile Liability: \$1,000,000 combined single limit per accident.
- c. Worker's Compensation per Illinois Labor Code; Employer's Liability: \$1,000,000 per accident.
- d. Village, its officials, and employees to be named as additional insureds; Contractor's coverage is primary.

12. Project Management and Meetings:

- a. Preconstruction meeting, scheduled after Notice of Award.
- b. Progress meeting frequency shall be biweekly minimum.
- c. Preinstallation meetings where specified in individual sections.
- d. Procore Construction Management online system is required.
 - (1) RFIs, submittals, meeting minutes, progress reports, contract modifications, payment applications, etc.
 - (2) Document control for drawings, specifications, and revision tracking.
 - (3) Construction progress photos and analytics reports.
- e. Contractor shall provide construction layout surveying and verify, protect, and replace disturbed survey control points per Section 01 70 00, 3.04.

13. Schedule/Completion of the Work:

- a. Contract Time to be stated by the Bidder in calendar weeks from Notice to Proceed on the Bid Form.
- b. NTP is expected within 90 days of the bid due date. The completion date will be based on the accepted Contract Time and commencement date.

14. Construction Submittals (successful bidder):

- a. See Division 1 and Technical Specifications.
- b. Construction schedule (submit 5 calendar days prior to the Preconstruction meeting).
- c. Schedule of values.
- d. Pay applications.
- e. Shop drawings.
- f. Operation and Maintenance Manuals.
- g. Warranties.
- h. Marked-up Construction Set Documents
- i. Others.

15. Temporary Facilities:

- a. See Division 1 for specifics.
- b. Construction fence: 6 feet high with lockable vehicular and pedestrian gates.
- c. Temporary sanitary facilities, dewatering, and barriers per Section 015000.
- d. Temporary Project Identification Sign: 32 sq ft, installed within 30 days of Notice to Proceed (Section 015813).

- e. Tree Retention and Protection: protective fencing required around tree protection areas (Section 015639).

16. Demolition:

- a. See Division 1 and Technical Specifications. Certain demolition/removal items (clearing and grubbing, tree removal, site demolition) are structured as Alternates; see Item 19 below.
- b. Removed materials and demolition debris shall be legally disposed of off-site unless specifically indicated in the Contract Documents to be salvaged, reused, relocated, reinstalled, or delivered to the Owner.

17. Quality Control:

- a. The Owner will employ and pay for an independent testing agency to perform specified testing. Contractor-requested additional testing and retesting due to noncompliant work remain the Contractor's responsibility. Refer to Section 01 40 00, 1.06 and 3.03, and individual specification sections.
- b. Work failing to meet Contract requirements shall be corrected at the Contractor's expense.
- c. Tree/plant protection: a fine of \$1,000 will be levied for each incident of construction damage within a tree protection area, in addition to up to treble damages of the assessed value of any tree or plant injured or lost.

18. Copies of Bid Construction Set Documents:

- a. Bid Documents may be obtained from BHFX Digital Imaging's Online Plan Room (www.bhfxplanroom.com).
- b. Bidder is responsible for any costs related to bidding documents.

19. Alternates:

- a. See Form of Bid and Document 004323 - Alternates Form.
- b. Scope of work for each of the 10 alternates (Nos. 1-10) is summarized in Section 012300 - Alternates, and includes items such as clearing/grubbing, tree removal, site demolition, soil spoil hauling and disposal, the underground modular stormwater system, parking lot excavation/base and curb and gutter, the pond fountain, and light pole foundations.

20. Owner-furnished Items

- a. Where a Deduct Alternate is accepted, the corresponding Work (e.g., modular stormwater detention system, parking lot excavation/aggregate base, curb and gutter) may be performed by the Owner, the Owner's forces, or a separate contractor; Contractor remains responsible for coordination and connections at locations indicated.

21. Project Closeout:

- a. See Division 1 and Technical Specifications.

22. Pending Addenda Items.

- a. Prebid meeting agenda, minutes, and attendance record.
- b. Bidder questions and responses, received to date.

23. Conflicts Between This Meeting and Construction Documents:

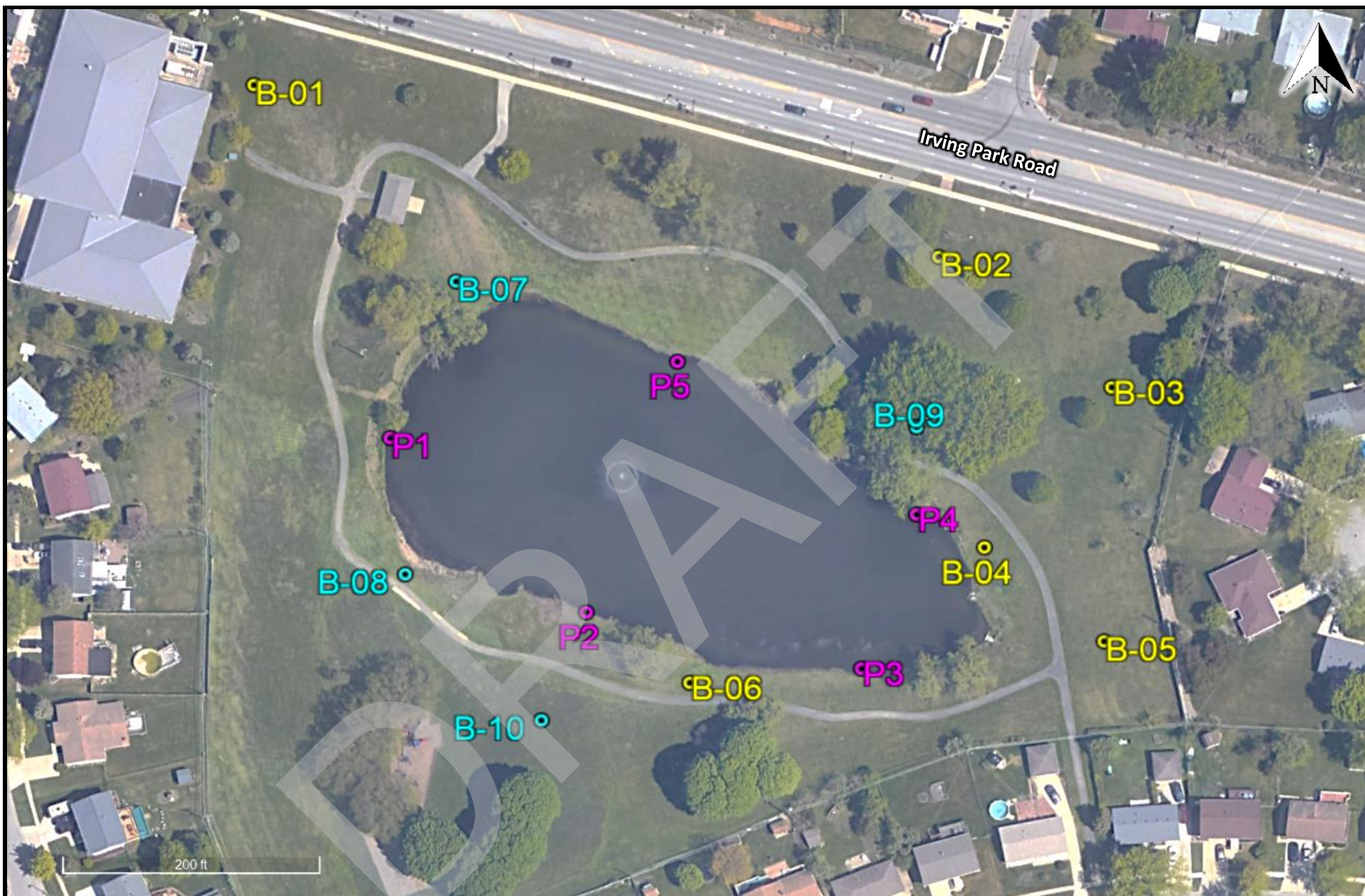
- a. Construction Documents govern unless changed by Addendum.

24. Questions.

MEETING SIGN-IN SHEET

PROJECT: **Kollar Pond Phase 1** PROJECT #: **24255 CH**
DATE / TIME: **09/16/2026 / 3:00 pm CT**
RE: **Nonmandatory Pre-Bid Meeting via ZOOM**

Name	Company	Type	Phone	Email
Matt Mann	Streamwood			
Brian Spaid	Streamwood	Public Works		
Aldair Vargas	Streamwood			
Renata Pajerska	Primera	Design Team - Civil		rpajerska@primeraeng.com
Sungano Ziswa	GFT	Design Team - Arch		sziswa@gftinc.com
Rory Hayes	DCG Roofing		464-209-2244	Rhayes@dcgroofing.com
Craig Mandel	Martam Construction		(847) 608-6800	craig@martam.com
Barry Borchart	Landmark			Estimating@golandmark.com
Gabe Pizzuto	Landworks			gabriel@landworkslimited.com
Tom Foster	V3 Construction			tfoster@v3co.com
Mike Warning	V3 Construction		(630) 200-0093	mwarning@v3co.com
Sarah Voska	Bluestem Ecological Services			



rubino
ENGINEERING INC.

425 Shepard Drive
Elgin, Illinois 60123

Project Name:
Project Location:

Client:
Rubino Project # :

Kollar Park Pond Improvements

55 E Irving Park Road
Streamwood, Illinois

Village of Streamwood
G23.178

**Boring
Location
Plan 1**



rubino
ENGINEERING INC.

425 Shepard Drive
Elgin, Illinois 60123

Project Name:
Project Location:

Client:
Rubino Project # :

Kollar Park Pond Improvements

55 E Irving Park Road
Streamwood, Illinois

Village of Streamwood
G23.178

**Boring
Location
Plan 2**

LOG OF BORING B-01

Sheet 1 of 1

Rubino Job No.: G23.178	Drilling Method: 2 1/4 Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Gateway Water Well Plaza	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth, (feet)	Graphic Log	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA	Additional Remarks
						Surface Elev.: 803.45 ft				◎ Moisture × PL ▲ Qu (Rimac) *Qp/Qr 0 25 50 0 2.0 4.0	
	0		1	9		Approximately 6 inches of TOPSOIL: dark brown silty clay, with roots and organic matter		4-3-3 N=6	24	×	Qp=2.3 tsf
	5		2	0		Soft to medium stiff, brown and gray silty CLAY, trace sand and gravel	CL	2-1-2 N=3	20	×	
			3	18		Stiff, brown and gray silty CLAY, trace sand and gravel		4-5-6 N=11	16	×	Qp=4.5 tsf
	795		4	16		Color transitions to just gray at approximately 8 1/2 feet below existing grade.	CL	3-3-5 N=8	17	×	Qp=3.8 tsf
	10					End of boring at approximately 10 feet below existing grade.					

Completion Depth: 10.0 ft	Sample Types:	Pressuremeter	Latitude: 42.0108250
Date Boring Started: 10/20/23	Auger Cutting	Shelby Tube	Longitude: -88.1707676
Date Boring Completed: 10/20/23	Split-Spoon	Grab Sample	Drill Rig: Geoprobe 7822DT
Logged By: P.P.	Rock Core	No Recovery	Remarks:
Drilling Contractor: Rubino Engineering, Inc.			Log Entry: J. Ignarski
			Checked By:

The stratification lines represent approximate boundaries. The transition may be gradual.

***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

LOG OF BORING B-02

Sheet 1 of 1

Rubino Job No.: G23.178	Drilling Method: 2 ¼ Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Entry Foyer with Steps / Ramp	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth, (feet)	Graphic Log	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA	Additional Remarks
						Surface Elev.: 805.06 ft				◎ Moisture × PL ▲ Qu (Rimac) *Qp/Qr STRENGTH, tsf	
	0		1	0		Approximately 12 inches of TOPSOIL: dark brown silty clay, with roots and organic matter		2-2-2 N=4	33		16% Organic Content
			2	6		Black ORGANIC SILTY CLAY, trace sand and gravel No recovery. Soils classified from auger cuttings.	OL	2-3-5 N=8	40		17% Organic Content
800	5		3	2				2-1-2 N=3	32		12% Organic Content
			4	16		Stiff, brown silty CLAY, trace sand and gravel	CL	2-3-5 N=8	21		Qp=2.3 tsf
	10					End of boring at approximately 10 feet below existing grade.					

Completion Depth: 10.0 ft	Sample Types:	Latitude: 42.0104396
Date Boring Started: 10/20/23	Auger Cutting	Longitude: -88.1688086
Date Boring Completed: 10/20/23	Split-Spoon	Drill Rig: Geoprobe 7822DT
Logged By: P.P.	Rock Core	Remarks:
Drilling Contractor: Rubino Engineering, Inc.		Log Entry: J. Ignarski
		Checked By:

The stratification lines represent approximate boundaries. The transition may be gradual.
***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

LOG OF BORING B-03

Sheet 1 of 1

Rubino Job No.: G23.178	Drilling Method: 2 1/4 Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Permeable Paver Parking Lot	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth, (feet)	Graphic Log	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA	Additional Remarks
						Surface Elev.: 808.78 ft				◎ Moisture ✕ PL ▲ Qu (Rimac) ✱ Qp/Qr STRENGTH, tsf 0 25 50 0 2.0 4.0	
	0		1	11		Approximately 12 inches of TOPSOIL: dark brown silty clay, with roots and organic matter					
						Dark brown, black, and gray silty CLAY, trace sand and gravel <i>Possible Fill</i>	CL	5-4-8 N=12	23	✕	
	805		2	12		Medium stiff to stiff, dark gray and black silty CLAY, trace sand and gravel		3-4-5 N=9	27	✕	Qp=2.3 tsf 6% Organic Content
	5		3	14			CL	3-3-3 N=6	31	✕	Qp=1.5 tsf 5% Organic Content
	800		4	6		Medium stiff, brown and gray silty CLAY, trace sand and gravel	CL	1-2-2 N=4	22	✕	Qp=2.3 tsf
	10					End of boring at approximately 10 feet below existing grade.					

Completion Depth: 10.0 ft	Sample Types:	Latitude: 42.0101489
Date Boring Started: 10/20/23	Auger Cutting	Longitude: -88.1683158
Date Boring Completed: 10/20/23	Split-Spoon	Drill Rig: Geoprobe 7822DT
Logged By: P.P.	Rock Core	Remarks:
Drilling Contractor: Rubino Engineering, Inc.		Log Entry: J. Ignarski
		Checked By:

The stratification lines represent approximate boundaries. The transition may be gradual.
***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

LOG OF BORING B-04

Sheet 1 of 1

Rubino Job No.:	G23.178	Drilling Method:	2 ¼ Hollow Stem Auger	WATER LEVELS***	
Project:	Kollar Pond Park Improvements	Sampling Method:	Split Spoon	▽ While Drilling	N/A
Location:	55 E Irving Park Road	Hammer Type:	Automatic	▼ Upon Completion	N/A
City, State:	Streamwood, Illinois	Boring Location:	Pond Extension	▼ Delay	N/A
Client:	Village of Streamwood				

Elevation (feet)	Depth, (feet)	Graphic Log	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA	Additional Remarks
										◎ Moisture × PL ▲ Qu (Rimac) *Qp/Qr 0 25 50 0 2.0 4.0	
0			1	6		Approximately 12 inches of TOPSOIL: dark brown silty clay, with roots and organic matter					
						Stiff, dark brown and black silty CLAY, trace sand and gravel <i>Trace organic matter observed</i>	CL	4-5-5 N=10	22	×	Qp=4.0 tsf
			2	16		Stiff to very stiff, brown and gray silty CLAY, trace sand and gravel		3-4-6 N=10	19	×	Qp=4.5 tsf
5			3	5			CL	4-6-8 N=14	17	×	Qp=4.5 tsf
			4	5		<i>Color transitions to just gray at approximately 8½ feet below existing grade.</i>		4-6-9 N=15	16	×	Qp=3.5 tsf
10						End of boring at approximately 10 feet below existing grade.					

Completion Depth:	10.0 ft	Sample Types:	P Pressuremeter	Latitude: 42.0097919
Date Boring Started:	10/20/23	Auger Cutting	Shelby Tube	Longitude: -88.1686759
Date Boring Completed:	10/20/23	Split-Spoon	Grab Sample	Drill Rig: Geoprobe 7822DT
Logged By:	P.P.	Rock Core	No Recovery	Remarks:
Drilling Contractor:	Rubino Engineering, Inc.			Log Entry: J. Ignarski
				Checked By:

The stratification lines represent approximate boundaries. The transition may be gradual.

***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

LOG OF BORING B-05

Sheet 1 of 1

Rubino Job No.: G23.178	Drilling Method: 2 1/4 Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Southeast Cove	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth, (feet)	Graphic Log	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA	Additional Remarks
						Surface Elev.: 805.27 ft				◎ Moisture ✕ PL ▲ Qu (Rimac) ✕ Qp/Qr LL	
805	0		1	13		Approximately 10 inches of TOPSOIL: dark brown silty clay, with roots and organic matter		4-6-7 N=13	19		Qp=4.5 tsf
			2	14		Dark brown and black silty CLAY, trace sand and gravel <i>Possible Fill</i>	CL	4-3-3 N=6	17		Qp=4.5 tsf
800	5		3	16		Medium stiff, black and dark gray silty CLAY, trace sand and gravel		1-3-3 N=6	44		Qp=1.0 tsf 6% Organic Content
			4	18			CL	0-2-2 N=4	78		>> Qp=0.5 tsf 8% Organic Content
	10					End of boring at approximately 10 feet below existing grade.					

Completion Depth: 10.0 ft	Sample Types:	Latitude: 42.0095832
Date Boring Started: 10/20/23	Auger Cutting	Longitude: -88.1683359
Date Boring Completed: 10/20/23	Split-Spoon	Drill Rig: Geoprobe 7822DT
Logged By: P.P.	Rock Core	Remarks:
Drilling Contractor: Rubino Engineering, Inc.		Log Entry: J. Ignarski
		Checked By:

The stratification lines represent approximate boundaries. The transition may be gradual.

***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

LOG OF BORING B-06

Sheet 1 of 1

Rubino Job No.: G23.178	Drilling Method: 2 1/4 Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Sculpture Knoll Walk	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth, (feet)	Graphic Log	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STRENGTH, tsf	Additional Remarks
						Surface Elev.: 798.08 ft					
	0		1	12		Approximately 10 inches of TOPSOIL: dark brown silty clay, with roots and organic matter	OL	1-1-2 N=3	62		>>> 10% Organic Content
	795		2	14		Dark brown ORGANIC SILTY CLAY, trace sand and gravel Trace organic matter observed		2-1-2 N=3	20	×	Qp=1.5 tsf
	5		3	18		Soft, gray silty CLAY, trace sand and gravel	CL	0-1-2 N=3	19	×	Qp=0.3 tsf
	790		4	14		Stiff, gray SILT, with sand, trace gravel	ML	2-4-6 N=10	10	×	Qp=2.8 tsf
	10					End of boring at approximately 10 feet below existing grade.					

Completion Depth: 10.0 ft	Sample Types:	Pressuremeter	Latitude: 42.0094890
Date Boring Started: 10/20/23	Auger Cutting	Shelby Tube	Longitude: -88.1695214
Date Boring Completed: 10/20/23	Split-Spoon	Grab Sample	Drill Rig: Geoprobe 7822DT
Logged By: P.P.	Rock Core	No Recovery	Remarks:
Drilling Contractor: Rubino Engineering, Inc.			Log Entry: J. Ignarski
			Checked By:

The stratification lines represent approximate boundaries. The transition may be gradual.

***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

LOG OF BORING B-07

Sheet 1 of 1

Rubino Job No.: G23.178	Drilling Method: 2 1/4 Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Performance Pavillion and Amphitheater	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STRENGTH, tsf	Additional Remarks
							Surface Elev.: 798.22 ft					
	0			1	0		Approximately 12 inches of TOPSOIL: dark brown silty clay, with roots and organic matter	OL	0-0-0 N=0	127		>>> 12% Organic Content
795				2	18		Dark gray and black ORGANIC SILTY CLAY, trace sand and gravel <i>No recovery. Soils classified from auger cuttings.</i>		0-1-1 N=2	20	×	Qp=1.0 tsf
5				3	18		Very soft to soft, gray silty CLAY, trace sand and gravel	CL	0-1-2 N=3	21	×	Qp=1.3 tsf
790				4	18		Medium stiff to stiff, gray silty CLAY, trace sand and gravel		2-2-4 N=6	20	×	Qp=1.0 tsf
10				5	6				5-5-7 N=12	15	×	Qp=4.5 tsf
785				6	15			CL	1-3-4 N=7	16	×	Qp=2.5 tsf
15				7	16				3-4-7 N=11	16	×	Qp=3.5 tsf
780							End of boring at approximately 20 feet below existing grade.					
20												

Completion Depth: 20.0 ft	Sample Types:	Pressuremeter	Latitude: 42.0103876
Date Boring Started: 10/20/23	Auger Cutting	Shelby Tube	Longitude: -88.1701923
Date Boring Completed: 10/20/23	Split-Spoon	Grab Sample	Drill Rig: Geoprobe 7822DT
Logged By: P.P.	Rock Core	No Recovery	Remarks:
Drilling Contractor: Rubino Engineering, Inc.			Log Entry: J. Ignarski
			Checked By:

The stratification lines represent approximate boundaries. The transition may be gradual.

***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

LOG OF BORING B-08

Sheet 1 of 1

Rubino Job No.: G23.178	Drilling Method: 2 1/4 Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Wetland Bridge	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STRENGTH, tsf	Additional Remarks
							Surface Elev.: 798.16 ft					
	0			1	6		Approximately 12 inches of TOPSOIL: dark brown silty clay, with roots and organic matter	OL	0-0-1 N=1	89		>>> 10% Organic Content
				2	14		Dark gray and black ORGANIC SILTY CLAY, trace sand and gravel		0-2-2 N=4	20	×	Qp=2.3 tsf
795				3	13		Soft to medium stiff, gray silty CLAY, trace sand and gravel		0-2-3 N=5	21	×	Qp=0.8 tsf
	5			4	18			CL	2-1-2 N=3	17	×	Qp=2.3 tsf
				5	17				2-2-2 N=4	17	×	Qp=2.0 tsf
790				6	18				2-3-4 N=7	14	×	Qp=3.0 tsf
	10			7	15		Stiff, gray silty CLAY, trace sand and gravel	CL	3-4-7 N=11	17	×	Qp=2.8 tsf
							End of boring at approximately 20 feet below existing grade.					
	15											
	20											

Completion Depth: 20.0 ft	Sample Types:	Pressuremeter	Latitude: 42.0097316
Date Boring Started: 10/20/23	Auger Cutting	Shelby Tube	Longitude: -88.1703382
Date Boring Completed: 10/20/23	Split-Spoon	Grab Sample	Drill Rig: Geoprobe 7822DT
Logged By: P.P.	Rock Core	No Recovery	Remarks:
Drilling Contractor: Rubino Engineering, Inc.			Log Entry: J. Ignarski
			Checked By:

The stratification lines represent approximate boundaries. The transition may be gradual.

***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

Rubino Job No.: G23.178	Drilling Method: 2 ¼ Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Interpretive Play Grove	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STRENGTH, tsf	Additional Remarks
							Surface Elev.: 800.63 ft					
800	0			1	11		Approximately 12 inches of TOPSOIL: dark brown silty clay, with roots and organic matter		5-6-6 N=12	16	Qp=4.5 tsf	
				2	13		Stiff to very stiff, brown and dark brown silty CLAY, trace sand and gravel	CL	6-7-8 N=15	12	Qp=4.5 tsf	
795	5			3	16				5-7-8 N=15	12	Qp=4.5 tsf	
				4	14		Medium stiff to stiff, brown and gray silty CLAY, trace sand and gravel		5-7-5 N=12	14	Qp=4.0 tsf	
790	10			5	16				3-3-4 N=7	14	Qp=3.5 tsf	
				6	14		Color transitions to just gray at approximately 13½ feet below existing grade.	CL	3-2-3 N=5	15	Qp=2.5 tsf	
785	15			7	17				3-3-5 N=8	19	Qp=2.5 tsf	
	20						End of boring at approximately 20 feet below existing grade.					

Completion Depth: 20.0 ft	Sample Types:	Latitude: 42.0100610
Date Boring Started: 10/20/23	Auger Cutting	Longitude: -88.1688707
Date Boring Completed: 10/20/23	Split-Spoon	Drill Rig: Geoprobe 7822DT
Logged By: P.P.	Rock Core	Remarks:
Drilling Contractor: Rubino Engineering, Inc.		Log Entry: J. Ignarski
		Checked By:

The stratification lines represent approximate boundaries. The transition may be gradual.

***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

LOG OF BORING B-10

Sheet 1 of 1

Rubino Job No.: G23.178	Drilling Method: 2 1/4 Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Pergola Overlook	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth, (feet)	Graphic Log	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STRENGTH, tsf	Additional Remarks
						Surface Elev.: 802.74 ft					
	0					Approximately 8 inches of TOPSOIL: dark brown silty clay, with roots and organic matter					
						FILL: brown and dark brown silty clay, trace sand and gravel					
800			1	11				3-1-2 N=3	20		Qp=4.0 tsf
			2	12		Black and dark gray silty CLAY, trace sand and gravel		1-2-2 N=4	34		Qp=1.8 tsf 7% Organic Content
5			3	17				1-1-1 N=2	103		>> Qp=0.3 tsf 8% Organic Content
795			4	12		Trace organic matter observed at approximately 8 1/2 feet BEG	CL	0-1-2 N=3	86		>> Qp=0.3 tsf 9% Organic Content
			5	14		Soft to medium stiff, gray silty CLAY, trace sand and gravel		0-1-2 N=3	22		Qp=1.0 tsf
790			6	18			CL	2-2-4 N=6	22		Qp=1.3 tsf
			7	16		Stiff, gray silty CLAY, trace sand and gravel	CL	3-3-5 N=8	14		Qp=2.0 tsf
785						End of boring at approximately 20 feet below existing grade.					
20											

Completion Depth: 20.0 ft	Sample Types:	Pressuremeter	Latitude: 42.0094055
Date Boring Started: 10/20/23	Auger Cutting	Shelby Tube	Longitude: -88.1699459
Date Boring Completed: 10/20/23	Split-Spoon	Grab Sample	Drill Rig: Geoprobe 7822DT
Logged By: P.P.	Rock Core	No Recovery	Remarks:
Drilling Contractor: Rubino Engineering, Inc.			Log Entry: J. Ignarski
			Checked By:

The stratification lines represent approximate boundaries. The transition may be gradual.

***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.



REPORT TRANSMITTAL

December 4, 2023

To: Matt Mann, P.E.
Director of Public Works/Village Engineer
Village of Streamwood
565 S. Bartlett Rd.
Streamwood, IL 60107
630-736-3850

Re: **Geotechnical Engineering Services Report**
Kollar Park Pond Improvements
55 E Irving Park Road
Streamwood, Illinois

Rubino Report No. G23.178

Via email: mmann@streamwood.org

Dear Mr. Mann,

Rubino Engineering, Inc. (Rubino) is pleased to submit our Geotechnical Engineering Services Report for the proposed improvements at Kollar Park in Streamwood, Illinois.

Report Description

Enclosed is the Geotechnical Engineering Services Report including results of field and laboratory testing, as well as recommendations for foundation design, pavement design, and general site development.

Authorization and Correspondence History

- Rubino Proposal No. Q23.505g_REV1 dated October 17, 2023; Signed and authorized by Matt Mann, PE, Director of Public Works/Village on October 18th, 2023.

Closing

Rubino appreciates the opportunity to provide geotechnical services for this project and we look forward to continued participation during the design and in future construction phases of this project.

If you have questions pertaining to this report, or if Rubino may be of further service, please contact our office at (847) 931-1555.

Respectfully submitted,
RUBINO ENGINEERING, INC.

Michelle A. Lipinski, PE
President

michelle.lipinski@rubinoeng.com

MAL/file/ Enclosures

KOLLAR PARK POND IMPROVEMENTS

55 E IRVING PARK ROAD

STREAMWOOD, ILLINOIS

RUBINO PROJECT No. G23.178

***Geotechnical
Engineering
Services
Report***

*Drilling
Laboratory Testing
Geotechnical Analysis*

PREPARED BY:

SABINA SCHMID

rubino
ENGINEERING INC.

**Michelle A. Lipinski, PE
President
IL No. 062-061241, Exp. 11/30/25**

PREPARED FOR:

VILLAGE OF STREAMWOOD

565 S. BARTLETT ROAD

STREAMWOOD, ILLINOIS 60107

DECEMBER 4, 2023

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PROJECT INFORMATION

Rubino understands that the Village of Streamwood is planning improvements to Kollar Pond and the surrounding park and parking lot. Kollar Pond is an existing pond located on the south side of Irving Park Road at Vine Street in Streamwood, Illinois

The improvements are currently planned to include the following:



Structural Loads received: none; however this proposal is based on the following:

- Individual column loads not exceeding 40 kips
- Bearing wall loads not exceeding 4 kips per lineal foot (klf)
- Grade-supported slab live loads not exceeding 100 psf.
- Site grading in the structural areas including cuts and fills being less than 2 feet

Documents received:

- Drawing – Boring Location plan provided by the Village of Streamwood, shown herein.

Project Correspondence:

- RFP email and information from Matt Mann of the Village of Streamwood on October 6 and 9, 2023 and phone call on October 17, 2023.
- Soil boring elevations received from Matt Mann of the Village of Streamwood, on November 1, 2023

The geotechnical recommendations presented in this report are based on the available project information and the subsurface materials described in this report. If any of the information on which



this report is based is incorrect, please inform Rubino in writing so that we may amend the recommendations presented in this report (if appropriate, and if desired by the client). Rubino will not be responsible for the implementation of our recommendations if we are not notified of changes in the project.

Purpose / Scope of Services

The purpose of this study was to explore the subsurface conditions at the site in order to prepare geotechnical recommendations for foundation design, pavement design, and general site development for the proposed construction. Rubino's scope of services included the following drilling program:

Table 1: Drilling Scope

NUMBER OF BORINGS	NUMBER OF SOIL PROBES	DEPTH (FEET BEG*)	LOCATION
6	--	10	B-01 (Proposed Gateway Water Well Plaza) B-02 (Proposed Entry Foyer) B-03 (Proposed Permeable Paver Parking Lot) B-04 (Proposed Pond Extension) B-05 (Proposed Southeast Cove) B-06 (Near Proposed Sculpture Knoll Walk)
4	--	20	B-07 (Proposed Performance Pavilion and Amphitheater) B-08 (Proposed Wetland Bridge) B-09 (Proposed Interpretive Play Grove) B-10 (Proposed Pergola Overlook)
--	5	2 – 3	P-01 through P-05 (Existing Pond)

*BEG = below existing grade

Representative soil samples obtained during the field exploration program were transported to the laboratory for additional classification and laboratory testing.

This report briefly outlines the following:

- *Summary of client-provided project information and report basis*
- *Overview of encountered subsurface conditions*
- *Overview of field and laboratory tests performed including results*
- *Geotechnical recommendations pertaining to:*
 - *Subgrade preparation and cut / fill recommendations*
 - *Shallow foundations for play structures at the interpretive playground, including suitable foundation type(s), allowable bearing pressure(s), and estimated settlement*
 - *Preliminary foundation discussion for wetland bridge, pavilion, and pergola overlook*
 - *Seismic design site classification parameters*



- *Permeable pavements, including subgrade stability and undercut recommendations, as applicable.*
- *Sheet pile walls along pond perimeter, including lateral earth pressure recommendations*
- *Re-use of on-site material as fill (included per phone call with Matt Mann on October 17, 2023)*
- *Construction considerations, including temporary excavation and construction control of water*

DRILLING, FIELD, AND LABORATORY TEST PROCEDURES

The Village of Streamwood selected the number of borings and the boring depths. Rubino located the borings in the field by measuring distances from known fixed site features. The borings were advanced utilizing 2 ¼ inch inside-diameter, hollow stem auger drilling methods and soil samples were routinely obtained during the drilling process.

Selected soil samples were tested in the laboratory to determine material properties for this report. Drilling, sampling, and laboratory tests were accomplished in general accordance with ASTM procedures. The following items are further described in the Appendix of this report.

- *Field Penetration Tests and Split-Barrel Sampling of Soils (ASTM D1586)*
- *Field Water Level Measurements*
- *Laboratory Determination of Water (Moisture) Content of Soil by Mass (ASTM D2216)*
- *Laboratory Determination of Atterberg Limits (ASTM D4318)*
- *Laboratory Determination of Particle Size (Hydrometer) Analysis of Soils (ASTM D422)*
- *Laboratory Organic Content by Loss on Ignition (ASTM D2974)*

The laboratory testing program was conducted in general accordance with applicable ASTM specifications. The results of these tests are to be found on the accompanying boring logs located in the Appendix.

SUMMARY OF GEOTECHNICAL CONSIDERATIONS

The main geotechnical design and construction considerations at this site are:

GENERAL

- **Subgrade soils** generally consisted of undocumented fill, brown, black, and/or gray silty clay, gray silt, and organic silty clay. See Subsurface Conditions and Undocumented Fill Discussion sections for more detailed information.
 - **Organic soils were observed** at some of the boring locations during drilling operations. See Subsurface Conditions and Organic Soils Discussion sections for more detailed information.



PARKING AREAS

- Based on the observed soil types, SPT N-values and Qp values, subgrade stability recommendations have been provided for the proposed permeable pavers parking lot and the pavement in the Entry Foyer area along the Sculpture Knoll Walkway. See Subgrade Stability / Undercut Recommendations – Proposed Parking Lot & Entry Foyer Pavement section for more detailed information.

STRUCTURES

- Shallow Foundations are a possible foundation design option for the proposed play structures in the proposed interpretive play grove area. See Preliminary Shallow Foundation Discussion – Interpretive Play Grove section for more information.
- Shallow foundations are not recommended for the proposed Performance Pavilion and Amphitheater, Wetland Bridge, and Pergola Overlook areas. Additional borings at a deeper depth will need to be performed in these areas. See Preliminary Deep Foundation Discussion: Proposed Performance Pavilion/Amphitheater, Wetland Bridge, & Pergola Overlook section for more information.

POND

- Soil samples taken from within the pond were classified as organic silty clayey sand and poorly-graded gravel. See the *Pond Samples Table* located in the Appendix of this report for more detailed information.
- Sheet pile walls are proposed along the pond perimeter. Please see the Preliminary Lateral Earth Pressure Recommendations - Pond Sheet Piling section for more information.

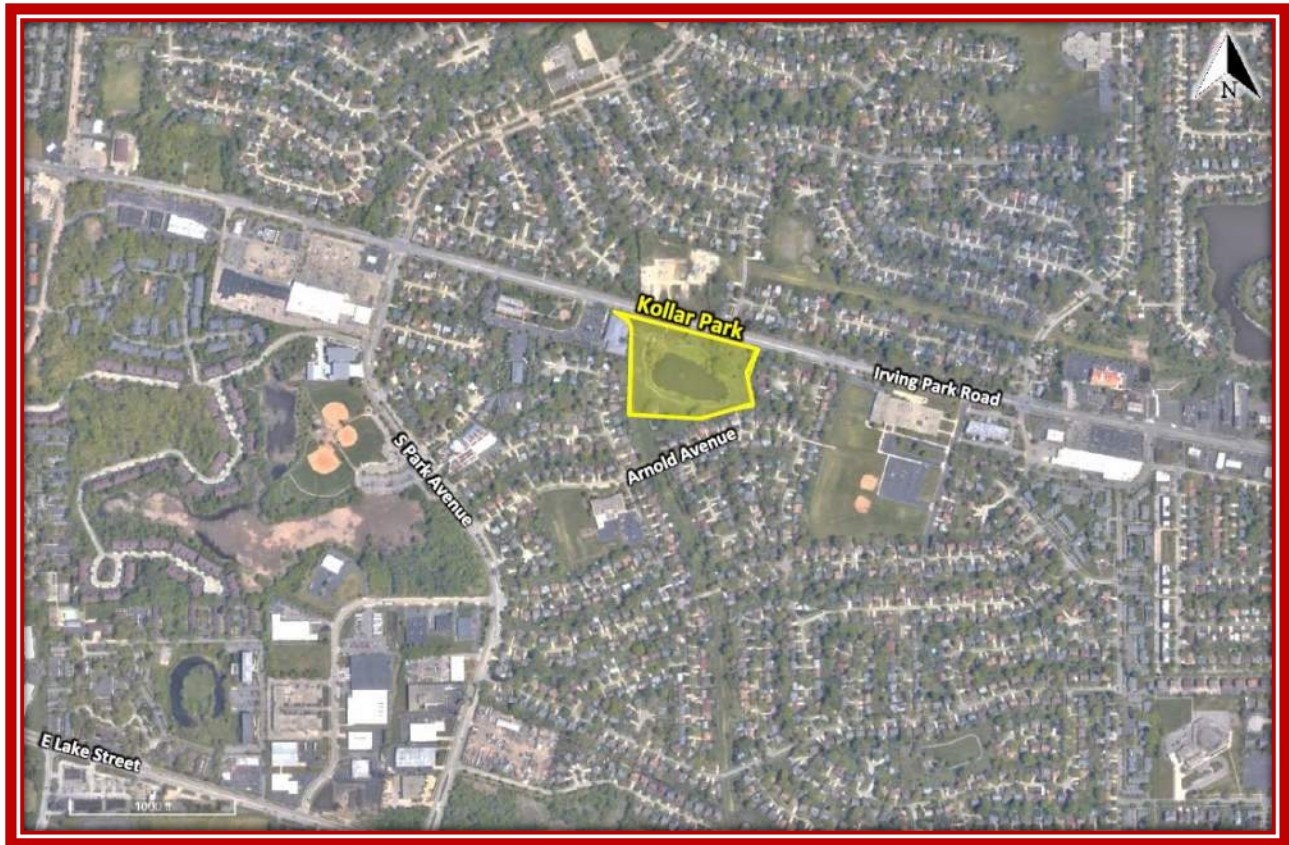
The geotechnical-related recommendations in this report are presented based on the subsurface conditions encountered and Rubino's understanding of the project. Should changes in the project criteria occur, a review must be made by Rubino to determine if modifications to our recommendations will be necessary.

SITE AND SUBSURFACE CONDITIONS

Site Location and Description

The project site is Kollar Park located on the south side of Irving Park Road at 55 E Irving Park Road in Streamwood, Illinois. Topography of the park is bowl-shaped and slopes towards the pond at the center. The Park's existing amenities include a walking path around the pond, a playground, and a shelter.





Subsurface Conditions

Beneath the existing surficial pavement, undocumented fill soils, or gravel, subsurface conditions generally consisted of brown, black, and/or gray silty clay, brown and gray clayey silt, and brown silty sand.

- The **topsoil** thicknesses, visually observed at boring locations ranged between approximately 6 and 12 inches
- The **undocumented fill and possible fill** soils were generally cohesive in nature
- The native **silty clay** soils ranged from soft to very stiff in consistency



Table 2: Subsurface Conditions Summary

APPROXIMATE ELEVATION RANGE, FEET (DEPTH RANGE, FEET BEG*)	SOIL DESCRIPTION	SPT N- VALUES (BLOWS PER FOOT)	MOISTURE CONTENT (%)	ESTIMATED SHEAR STRENGTH
B-01 through B-06 Gateway Water Well Plaza, Entry Foyer, Permeable Paver Parking Lot, Pond Extension, Southeast Cove, Sculpture Knoll Walk				
805 ¼ – 798 ½ (1 – 8 ½)	Dark brown / brown, dark gray / gray, and black silty CLAY, trace sand and gravel, <u>Possible Fill</u> (B-03, B-04 & B-05)	6 – 13	17 – 31	---
804 – 794 ½ (1 – 8 ½)	Black / dark brown ORGANIC SILTY CLAY (B-02 & B-06)	3 – 8	32 – 62	---
803 – 789 ½ (1 – 10)	Soft to medium stiff, brown / gray silty CLAY, trace sand and gravel (B-01, B-03 & B-06)	3 – 6	19 – 24	c = 450 – 900 psf
799 ¼ - 795 ¼ (6 – 10)	Black and dark gray HIGH PLASTICITY SILTY CLAY, <u>Possible Fill</u> (B-05)	4 – 6	44 – 78	---
798 ½ - 792 (6 – 10)	Stiff to very stiff, brown and gray silty CLAY (B-01, B-02, B-04)	8 – 11	16 – 21	c = 1,200 – 1,650 psf
789 ½ – 798 (8 ½ – 10)	Medium stiff, gray SILT (B-06)	10	10	c = 700 – 800 psf
B-07 through B-09 Performance Pavilion and Amphitheater, Wetland Bridge, Interpretive Play Grove, Pergola Overlook				
802 ¼ – 799 ¾ (½ – 3 ½)	FILL: brown and dark brown silty clay (B-10)	3	20	—
799 ½ – 792 ¼ (1 – 8 ½)	Stiff to very stiff, brown / dark brown silty CLAY (B-09)	12 – 15	12 – 16	c = 1,200 – 2,250 psf
797 ¼ – 794 ¾ (1 – 3 ½)	Dark gray and black ORGANIC SILTY CLAY (B-07 & B-08)	0 – 1	89 – 127	—
799 ¼ – 791 ¾ (3 ½ – 11)	Black and dark gray silty CLAY, <u>Possible Fill</u> (B-10)	2 – 4	34 – 103	—
794 ¾ – 784 ¾ (3 ½ – 13 ½)	Very soft to soft, gray silty CLAY	2 – 5	17 – 22	c = 300 – 750 psf
792 – 778 ¼ (8 ½ – 20)	Medium stiff to stiff, gray / brown silty CLAY	5 – 12	14 – 22	c = 750 – 1,800 psf



*BEG = Below existing grade

The native soils were visually classified as silty clay (CL), silt (ML), high plasticity silty clay (CH) and organic silty clay (OL) according to the Unified Soil Classification System (USCS). The above table is a general summary of subsurface conditions. Please refer to the boring logs for more detailed information.

Estimated shear strength of clay soils is based on empirical correlations using N-values, moisture content, and unconfined compressive strength.

Groundwater Conditions

Free groundwater was not observed in the borings during the drilling operations, possibly due to the lower permeability of the fine-grained soils. However, due to the proximity to the pond, water may be encountered during excavation at this site.

It should be noted that fluctuations in the groundwater level should be anticipated throughout the year depending on variations in climatological conditions and other factors not apparent at the time the borings were performed. Groundwater may not have been observed in some areas due to the low permeability of soils. Additionally, discontinuous zones of perched water may exist within the soils. The possibility of groundwater level fluctuation should be considered when developing the design and construction plans for the project.

Organic Soils Discussion

Organic soils greater than 10% loss on ignition were observed in borings B-02, B-06, B-07, and B-08 at this site. Visible organic matter was observed in borings B-04 and B-10. Please see the table below for details.

Organic soils can later cause settlement or stability problems. If encountered during construction, Rubino recommends that organic soils be removed and replaced with a compacted and documented engineered fill unless otherwise noted in the report.

Organic soils are defined as soils containing visible organic matter or greater than 10% organic matter as measured in a laboratory loss on ignition test. Organic soils typically consist of decomposed plant material accumulated under conditions of excessive moisture. Organic soils are dark colored in nature and may exhibit the odor of decaying vegetation.



Table 3: Organic Content by Location

BORING NUMBER / LOCATION	APPROXIMATE DEPTH RANGE (FEET BEG*)	ORGANIC LOSS ON IGNITION LOI%
B-02 / Entry Foyer	1 – 8 ½	12 – 17%
B-04 / Pond Extension	1 – 3 ½	Organic Matter Observed
B-06 / Sculpture Knoll Walk	1 – 3 ½	10%
B-07 / Performance Pavilion & Amphitheater	1 – 3 ½	12%
B-08 / Wetland Bridge	1 – 3 ½	10%
B-10 / Pergola Overlook	8 ½ – 11	Organic Matter Observed

*BEG = below existing grade

Undocumented Fill Discussion

Undocumented fill and possible fill were observed in the borings to depths of approximately 3 ½ to 11 feet below existing grade. Where existing fill is encountered, Rubino recommends that structure foundations extend through the fill materials and be supported on suitable soils, intermediate foundations, cured flowable fill, or compacted and documented structural fill. See the [Preliminary Shallow Foundation Discussion – Interpretive Play Grove](#) and [Preliminary Foundation Discussion: Proposed Performance Pavilion/Amphitheater, Wetland Bridge, & Pergola Overlook](#) sections for more details.

Undocumented fill is defined as fill that has been placed without being documented as to its placed density and moisture content.

Deleterious materials could include, but are not limited to, bricks, asphalt, concrete, metal, wood, or other building debris.

Deleterious materials were not observed within the undocumented fill materials during the drilling operations. Although deleterious materials were not encountered in the undocumented fill materials, this does not eliminate the possibility that deleterious materials could be present within the undocumented fill materials at other locations along the project.

If encountered during construction, fill with deleterious materials should be removed and replaced with structural fill at the geotechnical field engineer's discretion at the time of construction.

The primary risk of supporting structures on undocumented/uncontrolled fill materials is the potential for excessive and/or non-uniform settlement. The non-uniformity concern is based on the lack of information regarding how the fill was originally placed. Without documentation, Rubino cannot make an assessment as to whether or not the fill materials between the boring are consistent with what was explored. Risk of fill settlement can be reduced if the existing fill is removed and replaced with a controlled and compacted structural fill, or if records documenting the placement and compaction of the fill can be located.



Topsoil Discussion

Topsoil materials as described in this report have not been analyzed for quality according to any minimum specifications. If topsoil is to be imported to or exported from this site, Rubino recommends that it meet the minimum specifications defined in **Section 1081.05** of the, “Standard Specifications for Road and Bridge Construction,” adopted by the Illinois Department of Transportation, January 1st, 2022.

Rubino has reported topsoil thicknesses at each boring based on visual observation of surficial soils. Surficial topsoil thickness was visually observed to be between approximately 6 and 12 inches.

EVALUATION AND RECOMMENDATIONS

The geotechnical-related recommendations in this report are presented based on the subsurface conditions encountered and Rubino’s understanding of the project. Should changes in the project criteria occur, a review must be made by Rubino to determine if modifications to our recommendations will be necessary.

Site Preparation & Fill Recommendations

The following comments are considered preliminary. To reference general subgrade preparation recommendations and compaction recommendations, please refer to the Appendix of this report.

- Prior to placing and compacting structural fill, the site should be cleared of vegetation, trees, roots, unstable soils (low shear strength, high moisture content), and deleterious materials as applicable.
 - Soils that meet the requirements for structural fill should be stockpiled as needed for mass grading. Moisture conditioning weather and timing should be planned when considering the construction schedule.
- Please note that clay subgrade soils are sensitive to moisture and can be easily disturbed by precipitation, groundwater, or construction equipment. Therefore, extra care should be used to avoid disturbing these soils during construction activities.
- If cohesive soils become wet or unstable during construction, or if near surface soft subgrade soils are encountered, it is recommended that coarse aggregate be placed on the subgrade until a stable base for compaction of fill is achieved. The coarse aggregate should consist of clean, crushed stone or gravel between ¼ and 3 inches in size. The coarse aggregate should be spread in a maximum of 6-inch layers and compacted with compaction equipment until it is worked as much as possible into the existing soft or loose soil. This will “lock” up the unstable soil and create a bridging-type affect. Filter fabric should be placed between open-graded stone and fine-grained soils.



Suitability of On-Site Soils for Use as Structural Fill

Where fill materials are required, the fill materials for construction must meet the requirements of the Appendix of this report. Composite soils planned to be used for fill need to be blended to have a consistent classification. Soils should be stockpiled separately by classification and tested as recommended in the Appendix. For budget purposes, Rubino recommends a shrinkage factor of 15 percent be used to determine earthwork quantities.

In general, the **lean medium stiff to very stiff, brown / gray silty clay (CL) soils** (moisture contents ranging from 15% - 21%) that were encountered in the borings appear to be suitable for re-use as structural fill, **however, these soils were generally encountered in the deeper layers of the borings (between approximately 6 and 20 feet below existing grade; $\cong$ EL. 797 $\frac{1}{2}$ - 778 $\frac{1}{4}$ feet) with the exception of borings B-04 and B-09.**

- B-04: The lean stiff to very stiff, brown / gray silty (CL) soils that were encountered in boring B-04 (in the proposed Pond Extension area) between approximately 3 $\frac{1}{2}$ and 10 feet below existing grade ($\cong$ EL. 798 $\frac{1}{2}$ – 792 feet) appear to be generally suitable for re-use as structural fill.
- B-09: The lean medium stiff to very stiff brown / dark brown / gray silty clay (CL) soils that were encountered in boring B-09 (in the proposed Interpretive Play Structure area) between approximately 1 and 20 feet below existing grade ($\cong$ EL. 799 $\frac{1}{2}$ – 780 $\frac{1}{2}$ feet) appear to be generally suitable for re-use as structural fill.
- Soils should be stockpiled and tested to confirm suitability for re-use as structural fill at the time of construction.

Please note that the soft silty clay material, dark brown / black silty clay material, black organic silty clay material, undocumented fill, and possible fill soils that were encountered in the borings are generally unsuitable for re-use as structural fill. Please reference the boring logs in the Appendix of this report for more details on the observed soils at this site.

Fine-grained soils that will be reused will likely need to be moisture conditioned prior to placement; therefore, construction should be planned in warm and dry months of the year. Fill materials should be compacted and documented and meet the fill requirements shown in the Appendix of this report. Please reference the boring logs and laboratory results in the Appendix of this report for more information on the soil observed on site. To reference general subgrade preparation recommendations and compaction recommendations, please refer to the Appendix of this report.

Proposed grading plans were not available at the issue of this report and Rubino requests to be notified once proposed construction plans / drawings and grading plans can be provided so that recommendations can be updated accordingly.



Proposed Parking Lot and Entry Foyer Pavement

The recommendations located in this section are based on the data obtained at the soil boring locations at / near the proposed pavement at the Entry Foyer area (B-02) and the proposed permeable pavers parking lot (B-03). Soil subgrade stability may vary in the field between the borings and could be affected by the weather at the time of construction.

- The IDOT IBV Based Remedial Action chart from the IDOT Subgrade Stability Manual was used as a reference.
- Subgrade with an IBV value of 5 or less is a candidate for additional remediation.
- Subgrade with a moisture content exceeding 25% may be a candidate for remedial action as determined by proofroll and penetrometer testing at the time of construction.

Rubino recommends including a nominal quantity of 25% for subgrade improvement in case of failed proofroll or subgrade stability testing at the time of construction.

Table 4: Estimated IBV and Undercut Recommendations

BORING	IBV VALUE	REMEDIAL THICKNESS (UNDERCUT)	GEOTECHNICAL CONSIDERATIONS
Proposed Entry Foyer Pavement			
B-02	0	TBD – Delineation borings recommended once the site plan is finalized	Black ORGANIC SILTY CLAY at approximately 1 – 8 ½ feet below existing grade (≅ EL. 804 – 796 ½ feet)
Proposed Permeable Pavers Parking Lot			
B-03	3 – 5	Nominal Quantity	Possible Fill: dark brown, black, and gray silty clay at approximately 1 – 3 ½ feet below existing grade (≅ EL. 807 ¾ – 805 ¼ feet) Qp = 4.5 tsf

Subgrade stability should be checked during construction in accordance with *Appendix B*. Please note that proposed grading plans were not provided to Rubino, therefore, the recommendations and considerations above are based on the existing grade in the proposed pavement area. Once proposed grading and / or plans are finalized, please notify Rubino so that subgrade stability recommendations can be updated accordingly, if necessary.

If unstable soils are encountered at the time of testing during construction, subgrade soils may be **stabilized** by one of the following **options**:

- **Remove and replace** with non-woven filter fabric and 3-inch stone capped with CA-06 stone.



- Please note that a layer of non-woven filter geotextile should be placed between silty clay soil and an open-graded stone.
- Please be aware that large amounts of open-graded stone placed on the site will attract groundwater. Please notify the Civil Engineer of record if this option is chosen.

Where organic soils are encountered, Rubino recommends the following:

- **Remove and replace** with structural fill.
- Lightweight fill can be considered instead of removing all of the organic soils depending on final design. Additional borings are recommended to delineate areas of organic soils under proposed pavements.

General Soil Discussion – Borings B-01, B-05, & B-06

The following paragraphs generally discuss the soil conditions encountered at borings B-01, B-05, & B-06. Please notify Rubino once proposed construction plans / drawings and grading plans can be provided so that recommendations can be updated accordingly. The soil in these areas should be carefully tested to determine strength as required at the time of construction.

Gateway Water Well Plaza area (B-01)

The boring performed in the proposed Gateway Water Well Plaza area (B-01) consisted of soft to medium stiff brown and gray silty clay from approximately ½ to 6 feet below existing grade ($\cong$ EL. 803 – 797 ½ feet), underlain by stiff brown and gray silty clay soils.

- The *soft silty clay layer* located at approximately 3 ½ – 6 feet below existing grade ($\cong$ EL. 800 – 797 ½ feet) may not be suitable for support of proposed construction in this area and may need to be removed if exposed at the time of construction.

Southeast Cove area (B-05)

The boring performed in the proposed Southeast Cove area (B-05) consisted of dark brown and black silty clay (*Possible Fill*) from approximately 1 – 10 feet below existing grade ($\cong$ EL. 804 ½ – 795 ¼ feet).

- The *black / dark gray high plasticity silty clay soils (Possible Fill)* encountered in this boring at approximately 6 – 10 feet below existing grade ($\cong$ EL. 799 ¼ – 795 ¼ feet) were found to have elevated moisture contents ranging from 44% to 78% and may not be suitable for support of proposed construction in this area.

Boring B-06

Boring B-06 was performed in the southern portion of the site, near the proposed Sculpture Knoll Walkway. This boring consisted of dark brown organic silty clay from approximately 1 – 3 ½ feet below existing grade ($\cong$ EL. 797 – 794 ½ feet), underlain by soft, gray silty clay and stiff, gray silt layers.



If encountered during construction, Rubino recommends that organic soils be removed and replaced with a compacted and documented engineer fill. The soils beneath the organic silty clay soils should be carefully tested at the time of construction.

Preliminary Lateral Earth Pressure Recommendations - Pond Sheet Piling

Per the phone call between Rubino and Matt Mann (Village of Streamwood) on October 17, 2023, sheet piling is being considered at the edges of the pond near the proposed Southeast Cove, the proposed Interpretive Play Grove, and the proposed Pergola Overlook (near boring locations B-05, B-09, and B-10, respectively). Once plans are finalized, additional borings may be needed to finalize sheet pile recommendations. Please see below for the preliminary lateral earth pressures based on the soils encountered at the aforementioned borings.

Lateral earth pressures will be influenced by the conditions of wall or support restraint, methods of construction and/or compaction and the strength of the materials being restrained. The lateral earth pressures are determined by multiplying the vertical applied pressure by the appropriate lateral earth pressure coefficient “k”.

The following table provides the recommended “at-rest,” “active,” and “passive” lateral earth pressure coefficients for the soils encountered on site at the soil boring locations specified.

Table 5: “K-Factor” Lateral Earth Pressures

APPROXIMATE ELEVATION, FEET (DEPTH, FEET BEG*)	SOIL DESCRIPTION	ESTIMATED TOTAL UNIT WEIGHT (LB/FT ³)	FRICTION ANGLE (DEG)	K _o	K _A	K _P
B-05 (Proposed Southeast Cove)						
804 ½ – 795 ¼ (1 – 10)	Possible Fill: Dark brown and black silty CLAY / Black and dark gray HIGH PLASTICITY SILTY CLAY	105 – 115	25°	0.58	0.41	2.46
B-09 (Proposed Interpretive Play Grove)						
799 – 792 (1 – 8 ½)	Stiff to very stiff, brown and dark brown silty CLAY	120 – 125	27°	0.55	0.38	2.66
792 – 780 ½ (8 ½ – 20)	Medium stiff to stiff, brown and gray silty CLAY	115 – 120	26°	0.56	0.39	2.56
B-10 (Proposed Pergola Overlook)						
802 ¼ – 784 ¼ (1 – 18 ½)	Black, gray, brown and dark brown silty clay (FILL and Possible Fill) / Soft silty CLAY	105 – 115	24°	0.59	0.42	2.37
784 ¼ – 782 ¾ (18 ½ – 20)	Stiff, gray silty CLAY	120	26°	0.56	0.39	2.56



The following equations were used to calculate the earth pressure coefficients “k”.

At-Rest:	$k_o = 1 - \sin \phi$	If the walls are rigidly attached to the structure and not free to rotate or deflect at the top such as shallow tunnels
Active:	$k_a = \tan^2(45 - \frac{\phi}{2})$	Walls that are permitted to rotate and deflect at the top
Passive:	$k_p = \tan^2(45 + \frac{\phi}{2})$	Passive pressure should be determined using a factor of safety of 2.0

Conditions applicable to the above coefficients include:

- For active earth pressure, wall must rotate about base, with top lateral movements 0.002Z to 0.004Z, where Z is the wall height
- For passive earth pressure, wall must move horizontally to mobilize resistance
- No safety factor included
- Ignore passive pressure within the frost depth zone (3 ½ feet below final grade)
- The minimum factor of safety for overturning analysis is 2

Preliminary Shallow Foundation Discussion – Interpretive Play Grove

Design – Soil Bearing Pressure

Shallow, spread footing foundations may be considered for support of the proposed play structures in the proposed interpretive play grove area on site. Please note that no proposed drawings or construction plans have been provided to Rubino for the play structures at the issue of this report. The following recommendations are considered preliminary, pending more information. Please notify Rubino once proposed construction plans / drawings and grading plans can be provided so that recommendations can be finalized.

The boring performed in the proposed Interpretive Play Grove area (B-09) consists of Stiff to very stiff, brown / dark brown silty clay soils underlain by medium stiff to stiff, brown / gray silty clay. **The stiff to very stiff, brown and dark brown silty clay soils were encountered in this boring from approximately 1 – 8 ½ feet below existing grade (≈ EL. 799 ½ - 792 feet) and are estimated to have an unconfined compressive strength of approximately 2.0 – 4.0 tsf.**

Rubino can provide settlement estimate and discussion once the proposed construction plans / drawings and grading plans are provided.

Preliminary Foundation Discussion: Proposed Performance Pavilion/Amphitheater, Wetland Bridge, & Pergola Overlook

The soils encountered between approximately 1 and 18 ½ feet below existing grade (≈ EL. 802 – 784 ½ feet) in the borings at the proposed performance pavilion/amphitheater (B-07), the proposed wetland bridge (B-08), and the proposed pergola overlook (B-10) generally consisted of undocumented fill, dark gray / black organic silty clay, and very soft to medium stiff black / dark



gray / gray / brown silty clay. Because the borings B-07, B-08, and B-10 exhibit low to moderate strength soils and unsuitable bearing soils in the majority of the soil profile, Rubino recommends that the corresponding proposed structures are supported by deep foundation systems.

Stiff native silty clay soils were encountered beneath the unsuitable bearing soils in boring B-07 between approximately 11 and 20 feet below existing grade ($\cong$ EL. 787 – 778 feet) and in borings B-08 and B-10 between approximately 18 ½ and 20 feet below existing grade ($\cong$ EL. 784 ½ – 778 feet).

Rubino recommends that additional borings are performed to deeper depths in order to obtain adequate information to provide final bearing capacity recommendations for the proposed Performance Pavilion/Amphitheater, Wetland Bridge, and Pergola Overlook construction.

Preliminary Seismic Design Site Classification

Rubino recommends that additional borings are performed to deeper depths in order to obtain adequate soil information for finalized foundation recommendations for the proposed Performance Pavilion/Amphitheater, Wetland Bridge, and Pergola Overlook construction.

Based on the boring data available at this time, Rubino estimates that the project area is in Seismic Site Class D or E. Once the additional borings are performed and final proposed bearing elevations can be provided, Rubino will update the Seismic Design Site Classification accordingly.

Recommendations for Additional Testing

Please notify Rubino once proposed drawings / plans and grading plans can be provided so that we can review our recommendations for the direct use of the structure and development of the site and update the report. Please see the table below for more specific details on the additional testing and information that is recommended for this project.

BORING	LOCATION / PROPOSED AREA	ADDITIONAL TESTING AND INFORMATION NEEDED TO FINALIZE RECOMMENDATIONS
B-01	Gateway Water Well Plaza	• Updated site civil plan • Grading Plans • *May need additional or deeper borings in the area for pond perimeter sheet pile recommendations
B-02	Entry Foyer	
B-03	Permeable Paver Parking Lot	
B-04	Pond Extension	
B-05	Southeast Cove*	
B-06	Southern area of site, near portion of the Sculpture Knoll Walk	
B-07	Performance Pavilion and Amphitheater	• Additional borings to deeper depths • Updated site civil plan • Structure type, loads and locations • Proposed Bearing Elevation
B-08	Wetland Bridge	
B-09	Interpretive Play Grove	



BORING	LOCATION / PROPOSED AREA	ADDITIONAL TESTING AND INFORMATION NEEDED TO FINALIZE RECOMMENDATIONS
B-10	Pergola Overlook	• Grading Plans

During construction, Rubino recommends that one of our representatives be onsite for typical **observations and documentation** of exposed subgrade for during excavation and grading activities for support of floor slabs, foundations, and pavements, including proofrolling and penetrometer testing.

CLOSING

The recommendations submitted are based on the available subsurface information obtained by Rubino Engineering, Inc. and design details furnished by Village of Streamwood for the proposed project. If there are any revisions to the plans for this project or if deviations from the subsurface conditions noted in this report are encountered during construction, Rubino should be notified immediately to determine if changes in the foundation recommendations are required. If Rubino is not retained to perform these functions, we will not be responsible for the impact of those conditions on the project.

The scope of services did not include an environmental assessment to determine the presence or absence of wetlands, or hazardous or toxic materials in the soil, bedrock, surface water, groundwater or air on, below, or around this site. Any statements in this report and/or on the boring logs regarding odors, colors, and/or unusual or suspicious items or conditions are strictly for informational purposes.

After the plans and specifications are more complete, the geotechnical engineer should be retained and provided the opportunity to review the final design plans and specifications to check that our engineering recommendations have been properly incorporated into the design documents. At this time, it may be necessary to submit supplementary recommendations. This report has been prepared for the exclusive use of Village of Streamwood and their consultants for the specific application to the proposed improvements at Kollar Park in Streamwood, Illinois.



Appendix A – Drilling, Field, and Laboratory Test Procedures

ASTM D1586 Penetration Tests and Split-Barrel Sampling of Soils

During the sampling procedure, Standard Penetration Tests (SPT's) were performed at regular intervals to obtain the standard penetration (N-value) of the soil. The results of the standard penetration test are used to estimate the relative strength and compressibility of the soil profile components through empirical correlations to the soils' relative density and consistency. The split-barrel sampler obtains a soil sample for classification purposes and laboratory testing, as appropriate for the type of soil obtained.

Water Level Measurements

Water level observations were attempted during and upon completion of the drilling operation using a 100-foot tape measure. The depths of observed water levels in the boreholes are noted on the boring logs presented in the appendix of this report. In the borings where water is unable to be observed during the field activities, in relatively impervious soils, the accurate determination of the groundwater elevation may not be possible even after several days of observation. Seasonal variations, temperature and recent rainfall conditions may influence the levels of the groundwater table and volumes of water will depend on the permeability of the soils.

Ground Surface Elevations

Ground surface elevations that are referenced on the attached boring logs and throughout the report were provided to Rubino by Matt Mann via email on November 1, 2023. The depths indicated on the attached boring logs are relative to the existing ground surface for each individual boring at the time of the exploration. Copies of the boring logs are located in the Appendix of this report.

ASTM D2216 Water (Moisture) Content of Soil by Mass (Laboratory)

The water content is an important index property used in expressing the phase relationship of solids, water, and air in a given volume of material and can be used to correlate soil behavior with its index properties. In fine grained cohesive soils, the behavior of a given soil type often depends on its natural water content. The water content of a cohesive soil along with its liquid and plastic limits as determined by Atterberg Limit testing are used to express the soil's relative consistency or liquidity index.

ASTM D2974 Standard Test Method for Organic Soils using Loss on Ignition (Laboratory)

These test methods cover the measurement of moisture content, ash content, and organic matter in peats and other organic soils, such as organic clays, silts, and mucks. Ash content of a peat or organic soil sample is determined by igniting the oven-dried sample from the moisture content determination in a muffle furnace at 440°C (Method C) or 750°C (Method D). The substance remaining after ignition is the ash. The ash content is expressed as a percentage of the mass of the oven-dried sample. 2.4 Organic matter is determined by subtracting percent ash content from 100.

ASTM D4318 Atterberg Limits (Laboratory)

Atterberg limit testing defines the liquid limit (LL) and plastic limit (PL) states of a given soil. These limits are used to determine the moisture content limits where the soil characteristics changes from behaving more like a fluid on the liquid limit end to where the soil behaves more like individual soil particles on the plastic limit end. The liquid limit is often used to determine if a soil is a low or high plasticity soil. The plasticity index (PI) is difference between the liquid limit and the plastic limit. The plasticity index is used in conjunction with the liquid limit to determine if the material will behave like a silt or clay.

ASTM D422 Particle Size Analysis (Laboratory)

The Particle Size Analysis of Soils determines the distribution of particle sizes in order to further classify the soil. The distribution of particle sizes larger than 75µm (retained on the No. 200 sieve) is determined by sieving, while the distribution of particle sizes smaller than 75µm is determined by a sedimentation process, using a hydrometer to secure the necessary data. These soils are then classified more accurately based on the distribution information.

Appendix B – Site Preparation – Clearing & Grubbing

Rubino recommends that unsuitable soils or fill be removed from the site, as applicable. Unsuitable soils or fills can be described as, but are not limited to:

- organic soil / topsoil / plants / trees / shrubs / grass
- frozen soil
- existing asphalt or concrete pavement sections
- existing foundations
- building debris
- existing curbs

Stripping operations should extend a minimum of: **10** feet beyond proposed building limits and **5** feet beyond proposed pavement limits

Exceptions: where property limits allow. Notify geotechnical engineer if there are property boundary limitations. Stripping operations should be monitored and documented by a representative of the geotechnical engineer at the time of construction.

Proofrolling:

After stripping and excavating to the proposed subgrade level, as required, the paved parking area should be proof-rolled and scarified and compacted to at least 95 percent of the standard Proctor maximum dry density ASTM D 698 for a depth of at least 8 inches below the surface during a period of dry weather.

Proofrolling Equipment:

Tandem-axle dump truck or similar rubber-tired vehicles are acceptable and should be loaded with at least 9 tons per axle.

Benefits of Proofrolling:

- Aids in providing a firm base for compaction of fill soils
- Helps to delineate soft, loose, or disturbed areas that may exist below subgrade level.

Subgrade Stability:

Soils which are observed to rut or deflect excessively (typically greater than 1 inch) under the moving load should either be scarified and re-compacted, or undercut and replaced.

Subgrade soils may be **stabilized** by one of the following **options**:

- **Scarifying and re-compacting** the existing subgrade soil to at least 95% compaction per ASTM D698 Standard Proctor (12-inch depth).
- **Remove and replace** with non-woven filter fabric and 3-inch stone capped with CA-06 stone.
 - A layer of non-woven filter geotextile should be placed between silty clay soil and an open-graded stone.
 - The contractor can also attempt to stabilize the existing subgrade in place by “losing” 3-inch stone into the subgrade until the voids of the 3-inch stone are filled with the soft soil and the subgrade “locks up,” showing minimal deflection under a proofroll.
- **Geogrid and a stone mat** per manufacturer’s installation specifications could reduce the amount of stone required and provide additional lateral support for foundation loads in service.
- **Lime or other chemical additive** stabilization (12 to 14 inches). This can be done as part of a lift structure. Compaction requirements still apply.

Appendix C – Fill Recommendations

In general, fill materials should meet the following:

- Standard Proctor maximum dry density >100 pcf
- Free of organic or other deleterious materials
- Have a maximum particle size no greater than 3 inches
- Have a liquid limit <45 and plasticity index <25
- Testing should include areas at least 5 feet outside the parking area perimeters, if applicable
- Each lift of compacted, engineered fill should be tested and documented by a representative of the geotechnical engineer prior to placement of subsequent lifts
- If a fine-grained clay soil is used for fill (CL), close moisture content control will be essential to achieve the recommended degree of compaction
- If water must be added, it should be uniformly applied and thoroughly mixed into the soil by disking or scarifying

Suitable Soil Classifications:

CL, SC, GW, and SW will generally be suitable for use as structural fill under pavements.

Unsuitable Soil Classifications:

OL, OH, MH, ML, SM, CH and PT should be considered unsuitable.

Structural fill added to the site shall be evaluated in accordance with the following table:

MATERIAL TESTED	PROCTOR TYPE ^{*-1}	MIN % DRY DENSITY	PLACEMENT MOISTURE CONTENT RANGE	FREQUENCY OF TESTING ^{*-2}	MAXIMUM LOOSE LIFT HEIGHT
Structural Fill (Cohesive & Well-graded Granular)	Standard	98%	-2 to +3 %	1 per 2,500 yd ² of fill placed	8 inches
Random Fill (non-load bearing)	Standard	95%	-3 to +3 %	1 per 5,000 yd ² of fill placed	8 inches
Utility Trench Backfill	Standard	95%	-2 to +2 %	1 per 50 LF of fill placed	6 inches

^{*-1} The test frequency for the laboratory reference shall be one laboratory Proctor or Relative Density test for each material used on the site. If the borrow or source of fill material changes, a new reference moisture/density test should be performed.

^{*-2}A minimum of one test per lift is recommended unless otherwise specified.

Tested fill materials that do not achieve either the required dry density or moisture content range shall be recorded, the location noted, and reported to the Contractor and Owner. A re-test of that area should be performed after the Contractor performs remedial measures. The above test frequencies should be discussed with the contractor prior to starting the work.

The geotechnical engineer of record can only certify work that was performed under their direct observation, or under the observation of a competent person under their specific direction.

Appendix D – Foundation Construction Recommendations

Rubino recommends that soils at the bottom of the footing design elevation be observed, documented, and tested by a representative of Rubino prior to concrete placement to evaluate the consistency of the soils in the field with the geotechnical report findings. The remedial procedures described in the following paragraph can be used to provide suitable foundation support where unsuitable material such as soft or loose soils, existing fill, or organic soils are encountered.

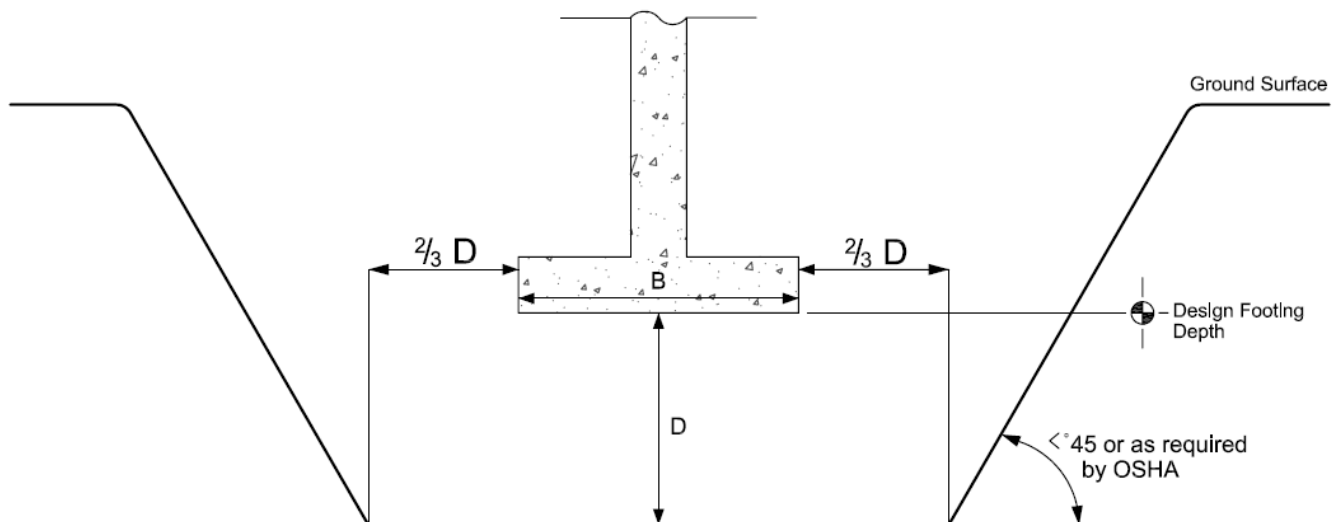
After opening, footing excavations should be observed and concrete placed as quickly as possible to avoid exposure of the footing bottoms to wetting and drying. Surface runoff water should be drained away from the excavations and not be allowed to pond. If possible, the foundation concrete should be placed during the same day the excavation is made. If it is required that footing excavations be left open for more than one day, the soils in the excavation should be protected to reduce evaporation or entry of moisture.

If unsuitable bearing soils are encountered in a footing excavation, the footing should be deepened to competent bearing soil and the footing could be lowered, or an over excavation and backfill procedure could be performed. If an over excavation and backfill procedure will be utilized, it would require widening the deepened excavation in all directions at least 8 inches beyond the edges of the footing for each 12 inches of over excavation depth (See "Over Excavation and Backfill Procedure" diagram below).

The over excavation should then be backfilled in a maximum of 8-inches thick loose lifts with suitable granular fill material, such as $\frac{3}{4}$ -inch stone with fines (CA-6), compacted to at least 98% of the maximum Standard Proctor dry density (ASTM D 698).

Another alternative is to undercut and refill the unsuitable area with flowable mortar up to the design elevation of the footings. The flowable mortar would serve as a protection to the subgrade during construction of the foundations. In this case, widening the footings is not necessary.

Over Excavation and Backfill Procedure



* Drawing not to scale

Appendix E – Slab-on-Grade Considerations

The subgrade modulus provided in the main report should be adjusted for larger areas of loading using the following expression for cohesive and cohesionless soil:

Modulus of Subgrade Reaction, $k_s = \left(\frac{k}{B} \right)$ for cohesive soil and

$$k_s = k \left(\frac{B+1}{2B} \right)^2 \text{ for cohesionless soil}$$

where: k_s = coefficient of vertical subgrade reaction for loaded area,
 k = coefficient of vertical subgrade reaction for 1x1 square foot area, and
 B = width of area loaded, in feet

The precautions listed below should be followed for construction of slab-on-grade pads.

- Cracking of slab-on-grade concrete is normal and should be expected.
- Cracking can occur not only as a result of heaving or compression of the supporting soil and/or fill material, but also as a result of concrete curing stresses.
- The occurrence of concrete shrinkage cracks and problems associated with concrete curing may be reduced and/or controlled by:
 - Limiting the slump of the concrete
 - Proper concrete placement, finishing, and curing
 - The placement of crack control joints at frequent intervals, particularly where re-entrance slab corners occur.
 - The American Concrete Institute (ACI) recommends a maximum panel size (in feet) equal to approximately three times the thickness of the slab (in inches) in both directions.
- The floor slab should be independent of the foundation walls.
- Areas supporting slabs should be properly moisture conditioned and compacted. Backfill in all interior and exterior water and sewer line trenches should be carefully compacted to reduce the shear stress in the concrete extending over these areas.
- Exterior slabs should be isolated from the building. These slabs should be reinforced to function as independent units. Movement of these slabs should not be transmitted to the building foundation or superstructure.
- Rubino recommends that a minimum 4-inch thick, free-draining granular mat be placed beneath the floor slab to enhance drainage. The floor slabs should have an adequate number of joints to reduce cracking resulting from differential movement and shrinkage. Floor slabs should not be rigidly connected to columns, walls, or foundations.
- A vapor retarder should be considered in areas of tile, carpet, or other moisture sensitive floor finishes. Appropriate curing procedures should be followed to reduce the risk of slab “curling” if a vapor retarder is used.

These details will not reduce the amount of movement but are intended to reduce potential damage should some settlement of the supporting subgrade take place. Some increase in moisture content in the floor slab is inevitable as a result of development and associated landscaping. However, extreme moisture content increases can be largely controlled by proper and responsible site drainage, building maintenance and irrigation practices.

Appendix F – Report Limitations

Subsurface Conditions:

The subsurface description is of a generalized nature to highlight the major subsurface stratification features and material characteristics. The boring logs included in the appendix should be reviewed for specific information at individual boring locations. These records include soil descriptions, stratifications, penetration resistances, locations of the samples and laboratory test data as well as water level information. The stratifications shown on the boring logs represent the conditions only at the actual boring locations. Variations may occur and should be expected between boring locations. The stratifications represent the approximate boundary between subsurface materials and the actual transition between layers may be gradual. The samples, which were not altered by laboratory testing, will be retained for up to 60 days from the date of this report and then will be discarded.

Geotechnical Risk:

The concept of risk is an important aspect of the geotechnical evaluation. The primary reason for this is that the analytical methods used to develop geotechnical recommendations do not comprise an exact science. The analytical tools that geotechnical engineers use are generally empirical and must be used in conjunction with engineering judgment and experience. Therefore, the solutions and recommendations presented in the geotechnical evaluation should not be considered risk-free, and more importantly, are not a guarantee that the interaction between the soils and the proposed structure will perform as planned. The engineering recommendations, presented in the preceding section, constitute Rubino's professional estimate of the necessary measures for the proposed structure to perform according to the proposed design based on the information generated and reference during this evaluation, and Rubino's experience in working with these conditions.

Warranty:

The geotechnical engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are implied or expressed.

Federal Excavation Regulations:

In Federal Register, Volume 54, No. 209 (October 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, part 1926, Subpart P". This document was issued to better ensure the safety of workmen entering trenches or excavations. This federal regulation mandates that all excavations, whether they be utility trenches, basement excavation or footing excavations, be constructed in accordance with the new OSHA guidelines. It is our understanding that these regulations are being strictly enforced and if they are not closely followed, the owner and the contractor could be liable for substantial penalties.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractor's "responsible person," as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations. Rubino is providing this information solely as a service to our client. Rubino is not assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

Appendix G – Soil Classification General Notes

DRILLING & SAMPLING SYMBOLS:

SS: Split Spoon - 1 3/8" I.D., 2" O.D., unless otherwise noted
 ST: Thin-Walled Tube - 3" O.D., Unless otherwise noted
 PM: Pressuremeter
 RB: Rock Bit
 DB: Diamond Bit - 4", N, B

PS: Piston Sample
 WS: Wash Sample
 HA: Hand Auger
 HS: Hollow Stem Auger
 BS: Bulk Sample

Standard "N" Penetration: Blows per foot of a 140-pound hammer falling 30 inches on a 2-inch O.D. split spoon sampler (SS), except where noted.

WATER LEVEL MEASUREMENT SYMBOLS:

Water levels indicated on the boring logs are the levels measured in the borings at the times indicated. In pervious soils, the indicated levels may reflect the location of groundwater. In low permeability soils, the accurate determination of ground water levels is not possible with only short-term observations.

DESCRIPTIVE SOIL CLASSIFICATION:

Soil Classification is based on the Unified Soil Classification System as defined in ASTM D-2487 and D-2488. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; they are described as: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are described as: clays, if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse grained soils are defined on the basis of their relative in-place density and fine-grained soils on the basis of their consistency. Example: Lean clay with sand, trace gravel, stiff (CL); silty sand, trace gravel, medium dense (SM).

CONSISTENCY OF FINE-GRAINED SOILS:

Unconfined Compressive Strength, Qu (tsf)	N-Blows/ft.	Consistency
< 0.25	< 2	Very Soft
0.25 - 0.5	2 - 4	Soft
0.5 - 1	4 - 8	Medium Stiff
1 - 2	8 - 15	Stiff
2 - 4	15 - 30	Very Stiff
4 - 8	30 - 50	Hard
> 8	> 50	Very Hard

RELATIVE DENSITY OF COARSE-GRAINED SOILS

N-Blows/ft.	Relative Density
0 - 3	Very Loose
4 - 9	Loose
10 - 29	Medium Dense
30 - 49	Dense
50 - 80	Very Dense
80+	Extremely Dense

RELATIVE PROPORTIONS OF SAND & GRAVEL

Descriptive Term	% of Dry Weight
Trace	< 15
With	15 - 29
Modifier	> 30

RELATIVE PROPORTIONS OF FINES

Descriptive Term	% of Dry Weight
Trace	< 5
With	5 - 12
Modifier	> 12

GRAIN SIZE TERMINOLOGY

Major Component	Size Range
Boulders	Over 12 in. (300mm)
Cobbles	12 in. To 3 in. (300mm to 75mm)
Gravel	3 in. To #4 sieve (75mm to 4.75mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)

*Descriptive Terms apply to components also present in sample

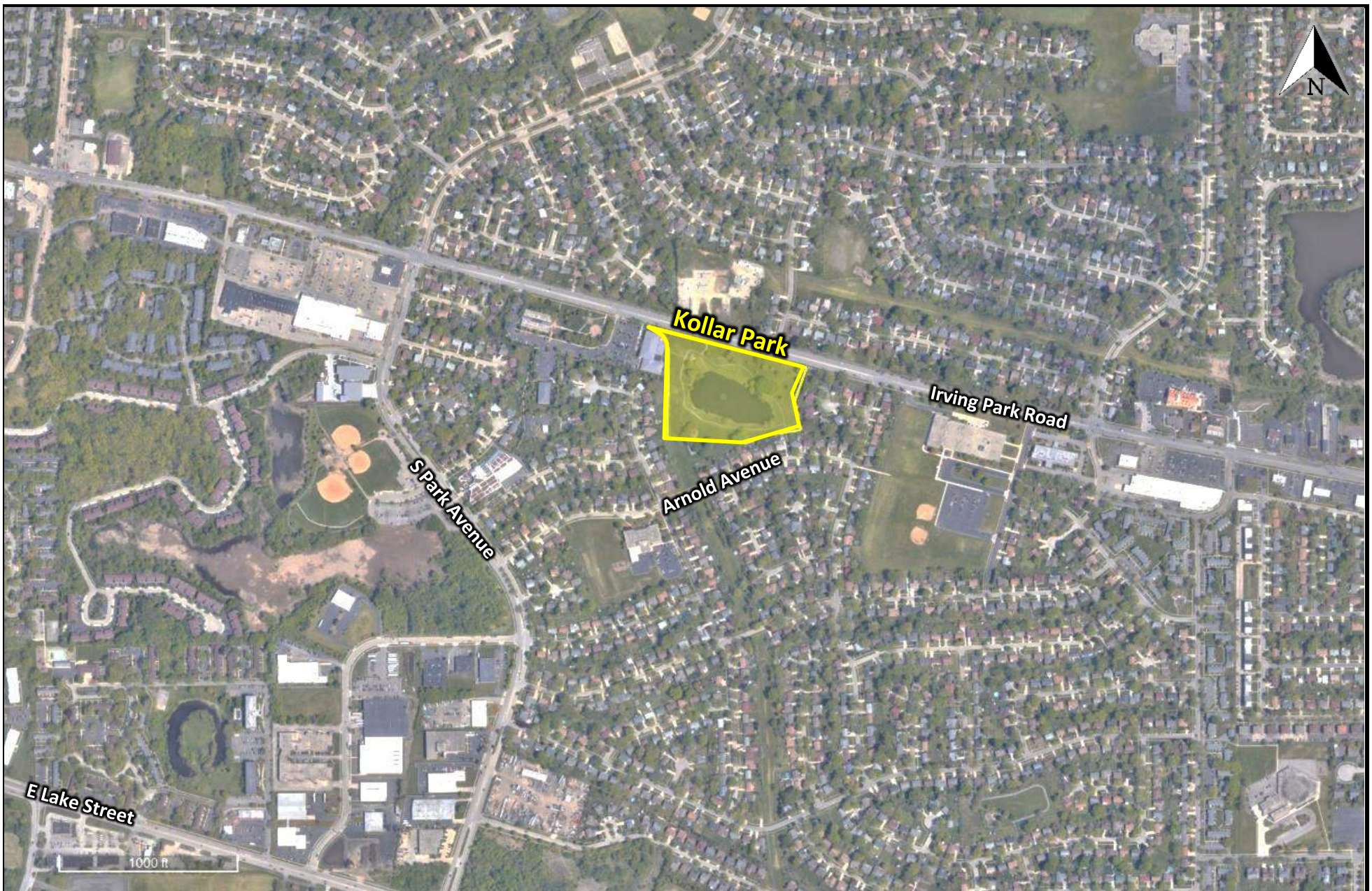
Appendix H – Soil Classification Chart

SOIL CLASSIFICATION CHART

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	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
	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

Appendix I – Site Vicinity Map & Boring Location Plan



425 Shepard Drive
Elgin, Illinois 60123

Project Name:
Project Location:

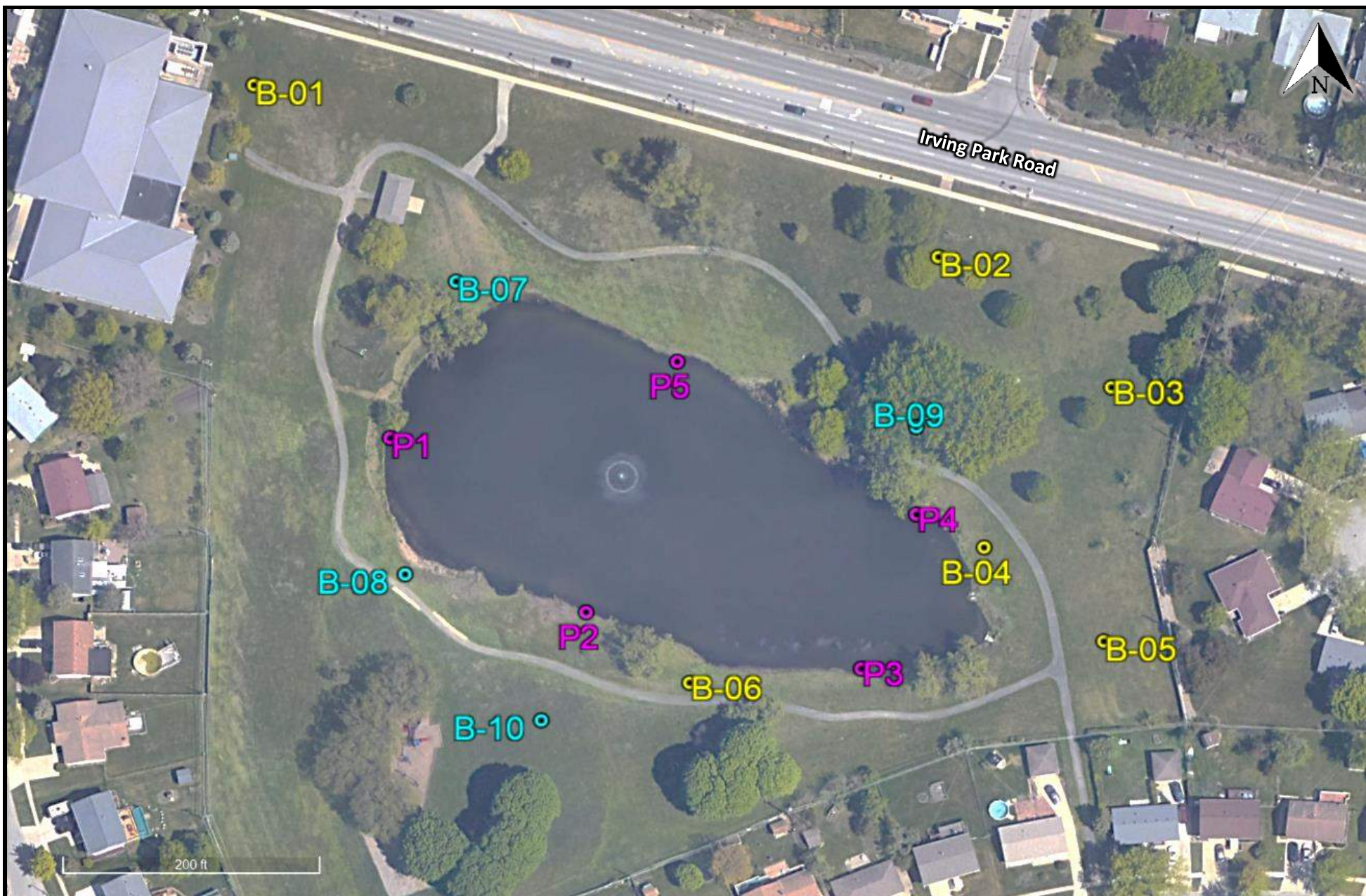
Client:
Rubino Project # :

Kollar Park Pond Improvements

55 E Irving Park Road
Streamwood, Illinois

Village of Streamwood
G23.178

**Site
Vicinity
Map**



rubino
ENGINEERING INC.

425 Shepard Drive
Elgin, Illinois 60123

Project Name:
Project Location:

Client:
Rubino Project # :

Kollar Park Pond Improvements
55 E Irving Park Road
Streamwood, Illinois
Village of Streamwood
G23.178

**Boring
Location
Plan 1**



rubino
ENGINEERING INC.

425 Shepard Drive
Elgin, Illinois 60123

Project Name:
Project Location:

Client:
Rubino Project # :

Kollar Park Pond Improvements

55 E Irving Park Road
Streamwood, Illinois

Village of Streamwood
G23.178

**Boring
Location
Plan 2**

Appendix J – Borings Logs

Rubino Job No.:	G23.178	Drilling Method:	2 ¼ Hollow Stem Auger	WATER LEVELS***
Project:	Kollar Pond Park Improvements	Sampling Method:	Split Spoon	▽ While Drilling N/A
Location:	55 E Irving Park Road	Hammer Type:	Automatic	▼ Upon Completion N/A
City, State:	Streamwood, Illinois	Boring Location:	Gateway Water Well Plaza	▼ Delay N/A
Client:	Village of Streamwood			

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA	Additional Remarks
							Surface Elev.: 803.45 ft				◎ Moisture ✕ PL ✕ LL STRENGTH, tsf ▲ Qu (Rimac) *Qp/Qr	
	0			1	9		Approximately 6 inches of TOPSOIL: dark brown silty clay, with roots and organic matter Soft to medium stiff, brown and gray silty CLAY, trace sand and gravel	CL	4-3-3 N=6	24	✕	Qp=2.3 tsf
	800			2	0			CL	2-1-2 N=3	20	✕	
	5			3	18		Stiff, brown and gray silty CLAY, trace sand and gravel	CL	4-5-6 N=11	16	✕	Qp=4.5 tsf
	795			4	16		Color transitions to just gray at approximately 8½ feet below existing grade.	CL	3-3-5 N=8	17	✕	Qp=3.8 tsf
	10						End of boring at approximately 10 feet below existing grade.					

Completion Depth:	10.0 ft	Sample Types:	Pressuremeter Shelby Tube Grab Sample No Recovery	Latitude: 42.0108250
Date Boring Started:	10/20/23	Auger Cutting Split-Spoon Rock Core		Longitude: -88.1707676
Date Boring Completed:	10/20/23			Drill Rig: Geoprobe 7822DT
Logged By:	P.P.			Remarks:
Drilling Contractor:	Rubino Engineering, Inc.			Log Entry: J. Ignarski
				Checked By:

The stratification lines represent approximate boundaries. The transition may be gradual.
***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

LOG OF BORING B-02

Sheet 1 of 1

Rubino Job No.:	G23.178	Drilling Method:	2 ¼ Hollow Stem Auger	WATER LEVELS***
Project:	Kollar Pond Park Improvements	Sampling Method:	Split Spoon	▽ While Drilling N/A
Location:	55 E Irving Park Road	Hammer Type:	Automatic	▼ Upon Completion N/A
City, State:	Streamwood, Illinois	Boring Location:	Entry Foyer with Steps / Ramp	▼ Delay N/A
Client:	Village of Streamwood			

Elevation (feet)	Depth, (feet)	Graphic Log	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA	Additional Remarks
						Surface Elev.: 805.06 ft				◎ Moisture × PL + LL STRENGTH, tsf ▲ Qu (Rimac) *Qp/Qr	
	0		1	0		Approximately 12 inches of TOPSOIL: dark brown silty clay, with roots and organic matter		2-2-2 N=4	33		16% Organic Content
			2	6		Black ORGANIC SILTY CLAY, trace sand and gravel <i>No recovery. Soils classified from auger cuttings.</i>	OL	2-3-5 N=8	40		17% Organic Content
800	5		3	2				2-1-2 N=3	32		12% Organic Content
			4	16		Stiff, brown silty CLAY, trace sand and gravel	CL	2-3-5 N=8	21		Qp=2.3 tsf
	10					End of boring at approximately 10 feet below existing grade.					

Completion Depth:	10.0 ft	Sample Types:	P Pressuremeter	Latitude: 42.0104396
Date Boring Started:	10/20/23	Auger Cutting	Shelby Tube	Longitude: -88.1688086
Date Boring Completed:	10/20/23	Split-Spoon	Grab Sample	Drill Rig: Geoprobe 7822DT
Logged By:	P.P.	Rock Core	No Recovery	Remarks:
Drilling Contractor:	Rubino Engineering, Inc.			Log Entry: J. Ignarski
				Checked By:

The stratification lines represent approximate boundaries. The transition may be gradual.
***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

LOG OF BORING B-03

Sheet 1 of 1

Rubino Job No.: G23.178	Drilling Method: 2 1/4 Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Permeable Paver Parking Lot	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA	Additional Remarks
							Surface Elev.: 808.78 ft				◎ Moisture ✕ PL ✕ LL STRENGTH, tsf ▲ Qu (Rimac) *Qp/Qr	
	0			1	11		Approximately 12 inches of TOPSOIL: dark brown silty clay, with roots and organic matter	CL	5-4-8 N=12	23	✕	Qp=4.5 tsf
				2	12		Dark brown, black, and gray silty CLAY, trace sand and gravel Possible Fill	CL	3-4-5 N=9	27	✕	Qp=2.3 tsf 6% Organic Content
805				3	14		Dark gray and black silty CLAY, trace sand and gravel Possible Fill	CL	3-3-3 N=6	31	✕	Qp=1.5 tsf 5% Organic Content
5				4	6		Medium stiff, brown and gray silty CLAY, trace sand and gravel	CL	1-2-2 N=4	22	✕	Qp=2.3 tsf
800							End of boring at approximately 10 feet below existing grade.					
10												

Completion Depth: 10.0 ft	Sample Types:	Latitude: 42.0101489
Date Boring Started: 10/20/23	Auger Cutting	Longitude: -88.1683158
Date Boring Completed: 10/20/23	Split-Spoon	Drill Rig: Geoprobe 7822DT
Logged By: P.P.	Rock Core	Remarks:
Drilling Contractor: Rubino Engineering, Inc.	Pressuremeter	Log Entry: J. Ignarski
	Shelby Tube	Checked By:
	Grab Sample	
	No Recovery	

The stratification lines represent approximate boundaries. The transition may be gradual.
***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

LOG OF BORING B-04

Sheet 1 of 1

Rubino Job No.:	G23.178	Drilling Method:	2 ¼ Hollow Stem Auger	WATER LEVELS***
Project:	Kollar Pond Park Improvements	Sampling Method:	Split Spoon	▽ While Drilling N/A
Location:	55 E Irving Park Road	Hammer Type:	Automatic	▼ Upon Completion N/A
City, State:	Streamwood, Illinois	Boring Location:	Pond Extension	▼ Delay N/A
Client:	Village of Streamwood			

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA	Additional Remarks
							Surface Elev.: 802.00 ft				◎ Moisture × PL + LL STRENGTH, tsf ▲ Qu (Rimac) *Qp/Qr	
800	0			1	6		Approximately 12 inches of TOPSOIL: dark brown silty clay, with roots and organic matter	CL	4-5-5 N=10	22		Qp=4.0 tsf
				2	16		Dark brown and black silty CLAY, trace sand and gravel <i>Possible Fill</i> <i>Trace organic matter observed</i>		3-4-6 N=10	19		Qp=4.5 tsf
795	5			3	5		Stiff to very stiff, brown and gray silty CLAY, trace sand and gravel	CL	4-6-8 N=14	17		Qp=4.5 tsf
				4	5		Color transitions to just gray at approximately 8½ feet below existing grade.		4-6-9 N=15	16		Qp=3.5 tsf
10	10						End of boring at approximately 10 feet below existing grade.					

Completion Depth:	10.0 ft	Sample Types:	Pressuremeter Shelby Tube Grab Sample No Recovery	Latitude: 42.0097919
Date Boring Started:	10/20/23	Auger Cutting Split-Spoon Rock Core		Longitude: -88.1686759
Date Boring Completed:	10/20/23			Drill Rig: Geoprobe 7822DT
Logged By:	P.P.			Remarks:
Drilling Contractor:	Rubino Engineering, Inc.			Log Entry: J. Ignarski
				Checked By:

The stratification lines represent approximate boundaries. The transition may be gradual.
***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

LOG OF BORING B-05

Sheet 1 of 1

Rubino Job No.: G23.178	Drilling Method: 2 ¼ Hollow Stem Auger	WATER LEVELS***	
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling	N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion	N/A
City, State: Streamwood, Illinois	Boring Location: Southeast Cove	▼ Delay	N/A
Client: Village of Streamwood			

Elevation (feet)	Depth, (feet)	Graphic Log	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STRENGTH, tsf	Additional Remarks
						Surface Elev.: 805.27 ft					
805	0		1	13		Approximately 10 inches of TOPSOIL: dark brown silty clay, with roots and organic matter	CL	4-6-7 N=13	19	Qp=4.5 tsf	
			2	14		Dark brown and black silty CLAY, trace sand and gravel <i>Possible Fill</i>		4-3-3 N=6	17	Qp=4.5 tsf	
800	5		3	16		Black and dark gray HIGH PLASTICITY SILTY CLAY, trace sand and gravel <i>Possible Fill</i>	CH	1-3-3 N=6	44	Qp=1.0 tsf 6% Organic Content	
			4	18				0-2-2 N=4	78	>>> Qp=0.5 tsf 8% Organic Content	
10						End of boring at approximately 10 feet below existing grade.					

Completion Depth: 10.0 ft	Sample Types:	Latitude: 42.0095832
Date Boring Started: 10/20/23	Auger Cutting	Longitude: -88.1683359
Date Boring Completed: 10/20/23	Split-Spoon	Drill Rig: Geoprobe 7822DT
Logged By: P.P.	Rock Core	Remarks:
Drilling Contractor: Rubino Engineering, Inc.		Log Entry: J. Ignarski
		Checked By:

The stratification lines represent approximate boundaries. The transition may be gradual.
***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

LOG OF BORING B-06

Sheet 1 of 1

Rubino Job No.:	G23.178	Drilling Method:	2 ¼ Hollow Stem Auger	WATER LEVELS***	
Project:	Kollar Pond Park Improvements	Sampling Method:	Split Spoon	▽ While Drilling	N/A
Location:	55 E Irving Park Road	Hammer Type:	Automatic	▼ Upon Completion	N/A
City, State:	Streamwood, Illinois	Boring Location:	Sculpture Knoll Walk	▽ Delay	N/A
Client:	Village of Streamwood				

Elevation (feet)	Depth, (feet)	Graphic Log	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STRENGTH, tsf	Additional Remarks
						Surface Elev.: 798.08 ft					
	0		1	12		Approximately 10 inches of TOPSOIL: dark brown silty clay, with roots and organic matter Dark brown ORGANIC SILTY CLAY, trace sand and gravel Trace organic matter observed	OL	1-1-2 N=3	62		>>> 10% Organic Content
795			2	14		Soft, gray silty CLAY, trace sand and gravel		2-1-2 N=3	20	×	Qp=1.5 tsf
5			3	18			CL	0-1-2 N=3	19	×	Qp=0.3 tsf
790			4	14		Medium stiff, gray SILT, with sand, trace gravel	ML	2-4-6 N=10	10	×	Qp=2.8 tsf
10						End of boring at approximately 10 feet below existing grade.					

Completion Depth:	10.0 ft	Sample Types:	P Pressuremeter	Latitude: 42.0094890
Date Boring Started:	10/20/23	Auger Cutting	Shelby Tube	Longitude: -88.1695214
Date Boring Completed:	10/20/23	Split-Spoon	Grab Sample	Drill Rig: Geoprobe 7822DT
Logged By:	P.P.	Rock Core	No Recovery	Remarks:
Drilling Contractor:	Rubino Engineering, Inc.			Log Entry: J. Ignarski
				Checked By:

The stratification lines represent approximate boundaries. The transition may be gradual.
***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

LOG OF BORING B-07

Sheet 1 of 1

Rubino Job No.: G23.178	Drilling Method: 2 1/4 Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Performance Pavillion and Amphitheater	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA	Additional Remarks
							Surface Elev.: 798.22 ft				◎ Moisture × PL + LL STRENGTH, tsf ▲ Qu (Rimac) *Qp/Qr	
	0			1	0		Approximately 12 inches of TOPSOIL: dark brown silty clay, with roots and organic matter	OL	0-0-0 N=0	127		>>> 12% Organic Content
							Dark gray and black ORGANIC SILTY CLAY, trace sand and gravel No recovery. Soils classified from auger cuttings.					
795				2	18		Very soft to soft, gray silty CLAY, trace sand and gravel	CL	0-1-1 N=2	20	×	Qp=1.0 tsf
5				3	18				0-1-2 N=3	21	×	Qp=1.3 tsf
790				4	18		Medium stiff to stiff, gray silty CLAY, trace sand and gravel		2-2-4 N=6	20	×	Qp=1.0 tsf
10				5	6				5-5-7 N=12	15	×	Qp=4.5 tsf
785				6	15			CL	1-3-4 N=7	16	×	Qp=2.5 tsf
15												
780				7	16				3-4-7 N=11	16	×	Qp=3.5 tsf
20							End of boring at approximately 20 feet below existing grade.					

Completion Depth: 20.0 ft	Sample Types:	Latitude: 42.0103876
Date Boring Started: 10/20/23	Auger Cutting	Longitude: -88.1701923
Date Boring Completed: 10/20/23	Split-Spoon	Drill Rig: Geoprobe 7822DT
Logged By: P.P.	Rock Core	Remarks:
Drilling Contractor: Rubino Engineering, Inc.	Pressuremeter	Log Entry: J. Ignarski
	Shelby Tube	Checked By:
	Grab Sample	
	No Recovery	

The stratification lines represent approximate boundaries. The transition may be gradual.
***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

LOG OF BORING B-08

Sheet 1 of 1

Rubino Job No.: G23.178	Drilling Method: 2 1/4 Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Wetland Bridge	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA	Additional Remarks
							Surface Elev.: 798.16 ft				◎ Moisture × PL + LL STRENGTH, tsf ▲ Qu (Rimac) *Qp/Qr	
795	0			1	6		Approximately 12 inches of TOPSOIL: dark brown silty clay, with roots and organic matter	OL	0-0-1 N=1	89		>>> 10% Organic Content
							Dark gray and black ORGANIC SILTY CLAY, trace sand and gravel					
				2	14		Soft to medium stiff, gray silty CLAY, trace sand and gravel		0-2-2 N=4	20	×	Qp=2.3 tsf
	5			3	13				0-2-3 N=5	21	×	Qp=0.8 tsf
				4	18				2-1-2 N=3	17	×	Qp=2.3 tsf
	10			5	17			CL	2-2-2 N=4	17	×	Qp=2.0 tsf
				6	18				2-3-4 N=7	14	×	Qp=3.0 tsf
	15											
				7	15		Stiff, gray silty CLAY, trace sand and gravel	CL	3-4-7 N=11	17	×	Qp=2.8 tsf
	20						End of boring at approximately 20 feet below existing grade.					

Completion Depth: 20.0 ft	Sample Types:	Latitude: 42.0097316
Date Boring Started: 10/20/23	Auger Cutting	Longitude: -88.1703382
Date Boring Completed: 10/20/23	Split-Spoon	Drill Rig: Geoprobe 7822DT
Logged By: P.P.	Rock Core	Remarks:
Drilling Contractor: Rubino Engineering, Inc.	Pressuremeter	Log Entry: J. Ignarski
	Shelby Tube	Checked By:
	Grab Sample	
	No Recovery	

The stratification lines represent approximate boundaries. The transition may be gradual.
***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

LOG OF BORING B-09

Sheet 1 of 1

Rubino Job No.: G23.178	Drilling Method: 2 ¼ Hollow Stem Auger	WATER LEVELS***	
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling	N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion	N/A
City, State: Streamwood, Illinois	Boring Location: Interpretive Play Grove	▼ Delay	N/A
Client: Village of Streamwood			

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA	Additional Remarks
							Surface Elev.: 800.63 ft				◎ X Moisture PL 0 25 50 + LL STRENGTH, tsf ▲ Qu (Rimac) *Qp/Qr 0 2.0 4.0	
800	0			1	11		Approximately 12 inches of TOPSOIL: dark brown silty clay, with roots and organic matter	CL	5-6-6 N=12	16	◎	Qp=4.5 tsf
				2	13		Stiff to very stiff, brown and dark brown silty CLAY, trace sand and gravel		6-7-8 N=15	12	◎	Qp=4.5 tsf
795	5			3	16				5-7-8 N=15	12	◎	Qp=4.5 tsf
				4	14		Medium stiff to stiff, brown and gray silty CLAY, trace sand and gravel	CL	5-7-5 N=12	14	◎	Qp=4.0 tsf
790	10			5	16				3-3-4 N=7	14	◎	Qp=3.5 tsf
				6	14		Color transitions to just gray at approximately 13½ feet below existing grade.		3-2-3 N=5	15	◎	Qp=2.5 tsf
785	15			7	17				3-3-5 N=8	19	◎	Qp=2.5 tsf
20	20						End of boring at approximately 20 feet below existing grade.					

Completion Depth: 20.0 ft	Sample Types:	P Pressuremeter	Latitude: 42.0100610
Date Boring Started: 10/20/23	Auger Cutting	Shelby Tube	Longitude: -88.1688707
Date Boring Completed: 10/20/23	Split-Spoon	Grab Sample	Drill Rig: Geoprobe 7822DT
Logged By: P.P.	Rock Core	No Recovery	Remarks:
Drilling Contractor: Rubino Engineering, Inc.			Log Entry: J. Ignarski
			Checked By:

The stratification lines represent approximate boundaries. The transition may be gradual.
***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

LOG OF BORING B-10

Sheet 1 of 1

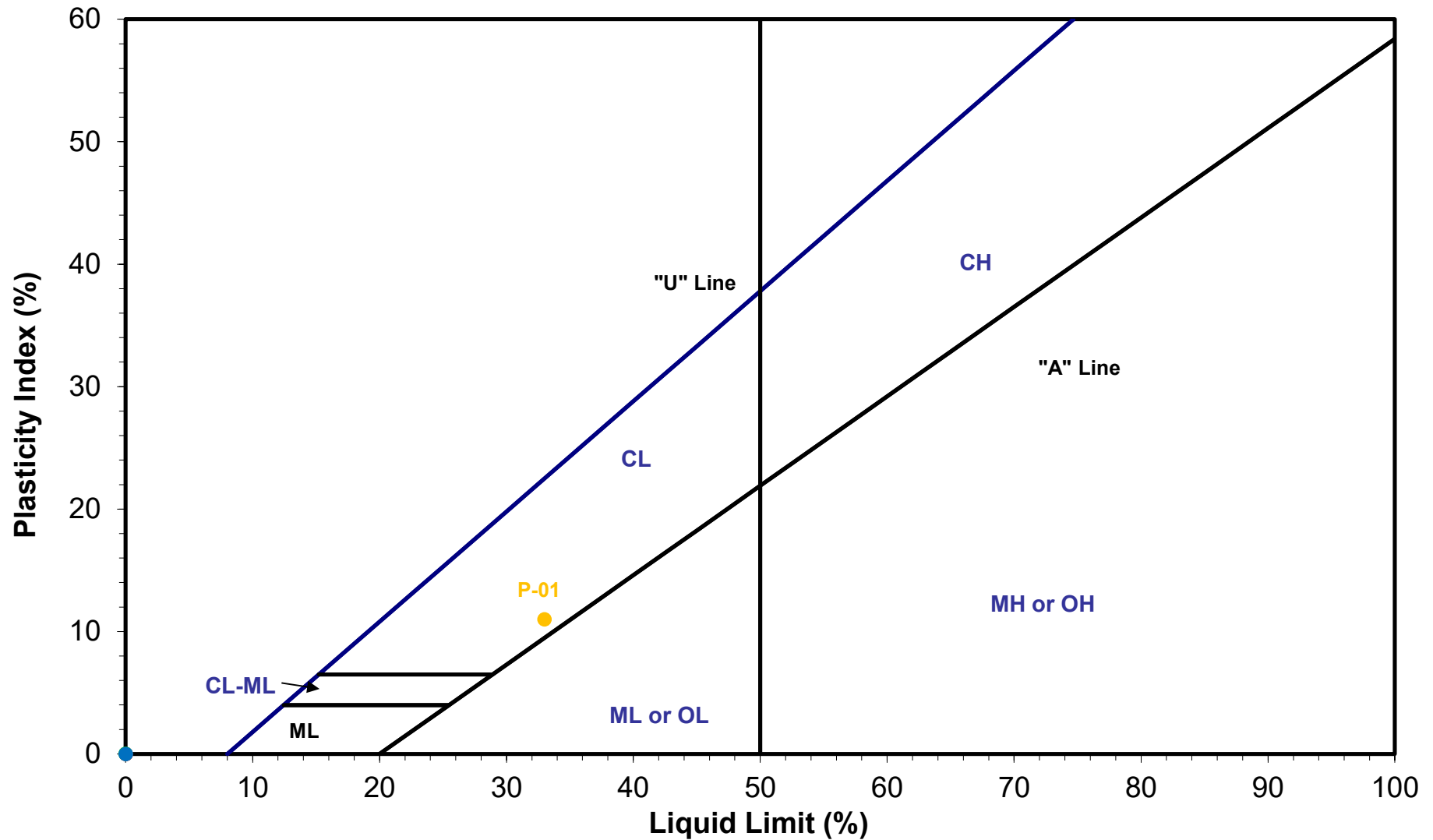
Rubino Job No.: G23.178	Drilling Method: 2 ¼ Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Pergola Overlook	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth (feet)	Graphic Log	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STRENGTH, tsf	Additional Remarks
						Surface Elev.: 802.74 ft					
	0					Approximately 8 inches of TOPSOIL: dark brown silty clay, with roots and organic matter					
						FILL: brown and dark brown silty clay, trace sand and gravel					
800			1	11				3-1-2 N=3	20	×	Qp=4.0 tsf
			2	12		Black and dark gray silty CLAY, trace sand and gravel <i>Possible Fill</i>		1-2-2 N=4	34	×	Qp=1.8 tsf 7% Organic Content
5			3	17				1-1-1 N=2	103		>> Qp=0.3 tsf 8% Organic Content
795			4	12		Trace organic matter observed at approximately 8½ feet BEG		0-1-2 N=3	86		>> Qp=0.3 tsf 9% Organic Content
10			5	14		Soft to medium stiff, gray silty CLAY, trace sand and gravel		0-1-2 N=3	22	×	Qp=1.0 tsf
790			6	18				2-2-4 N=6	22	×	Qp=1.3 tsf
15											
785			7	16		Stiff, gray silty CLAY, trace sand and gravel		3-3-5 N=8	14	×	Qp=2.0 tsf
20						End of boring at approximately 20 feet below existing grade.					

Completion Depth: 20.0 ft	Sample Types:	Latitude: 42.0094055
Date Boring Started: 10/20/23	Auger Cutting	Longitude: -88.1699459
Date Boring Completed: 10/20/23	Split-Spoon	Drill Rig: Geoprobe 7822DT
Logged By: P.P.	Rock Core	Remarks:
Drilling Contractor: Rubino Engineering, Inc.		Log Entry: J. Ignarski
		Checked By:

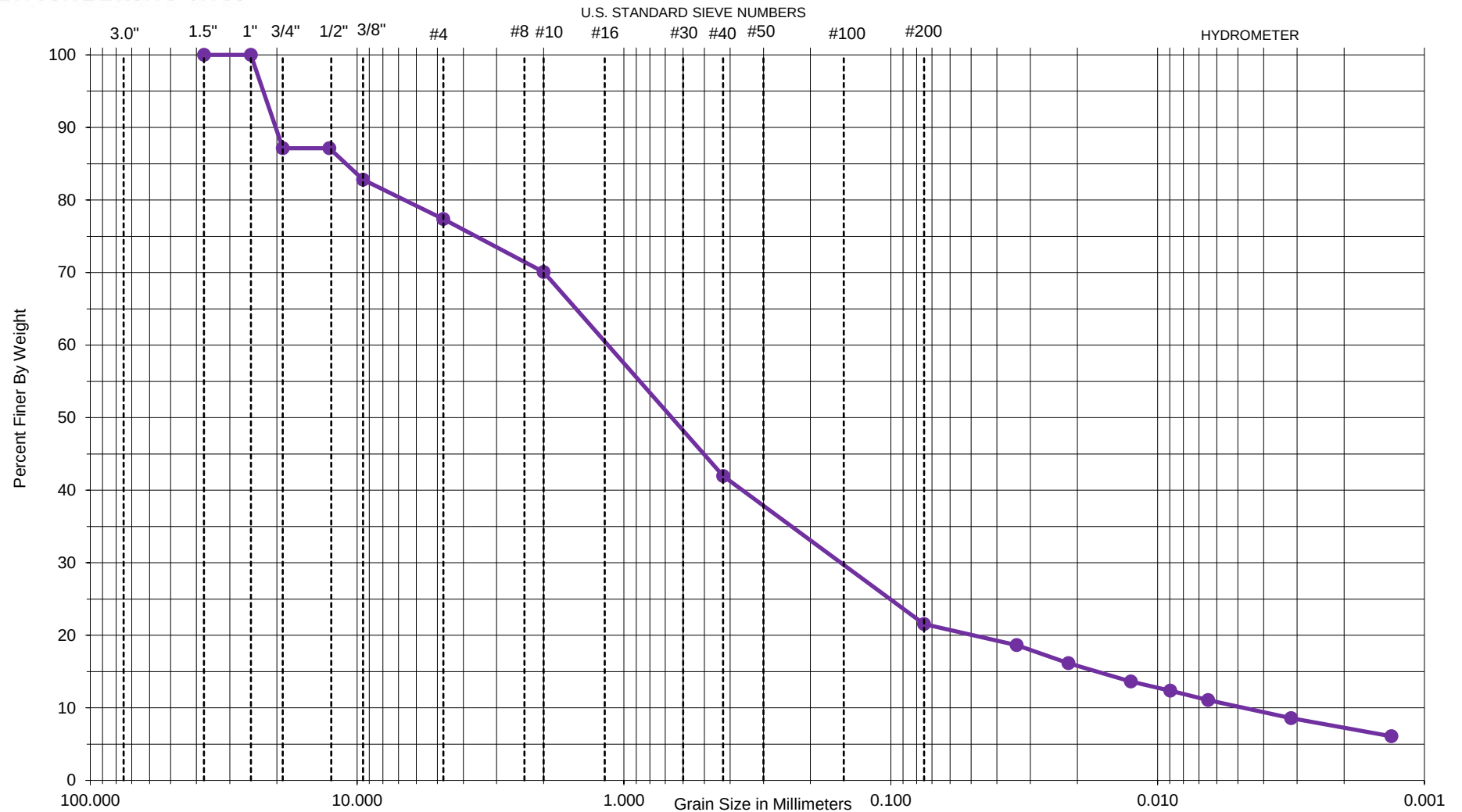
The stratification lines represent approximate boundaries. The transition may be gradual.
***Please reference the geotechnical report text for specific groundwater / dewatering recommendations.

Appendix K – Laboratory Results



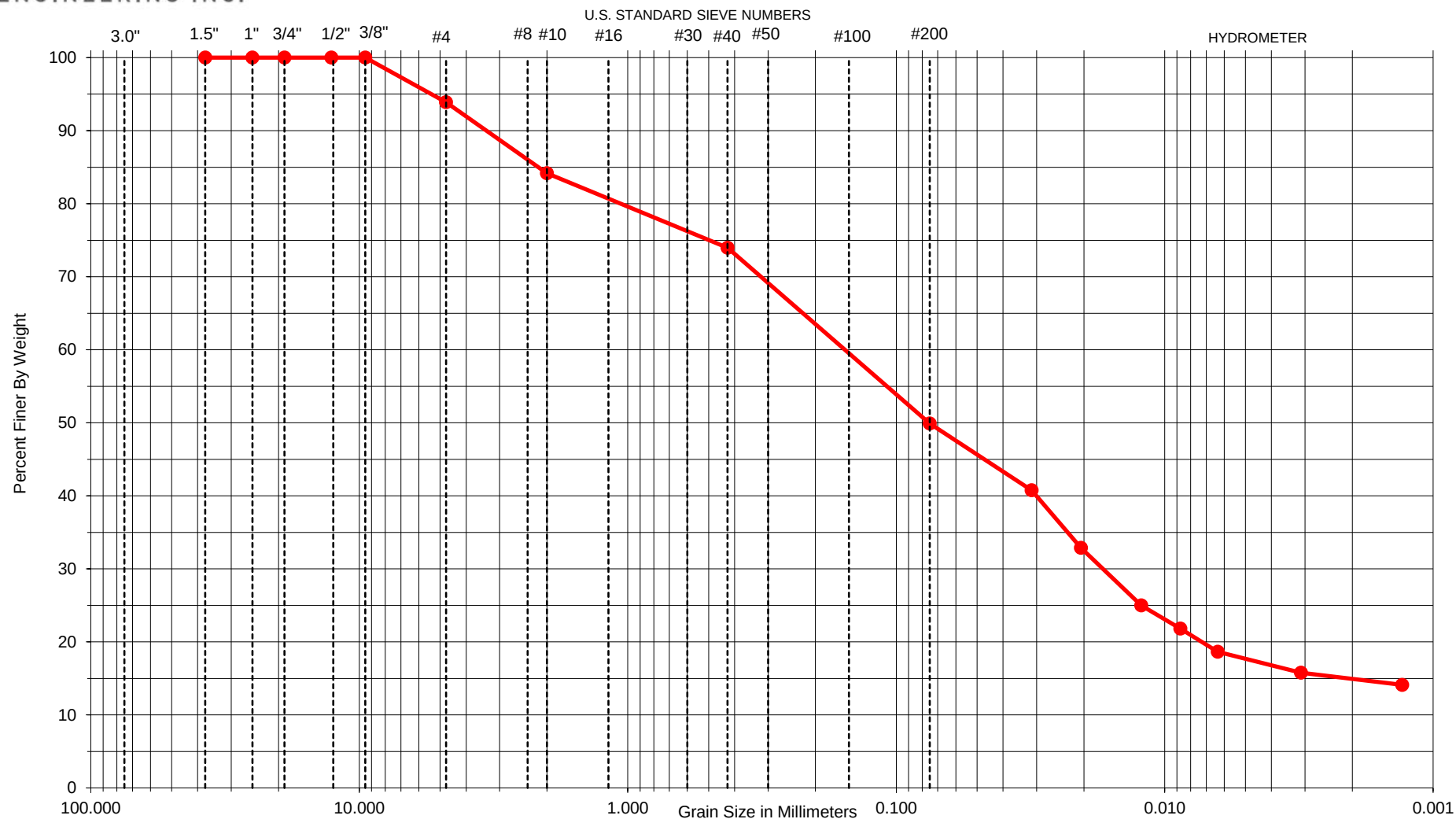
Boring #	P-01						Project: Proposed Kollar Park Improvements Location: Streamwood, Illinois Client: Village of Streamwood Project #: G23.178
LL	33						
PL	22						
PI	11						

REPORT OF PARTICLE-SIZE ANALYSIS OF SOIL



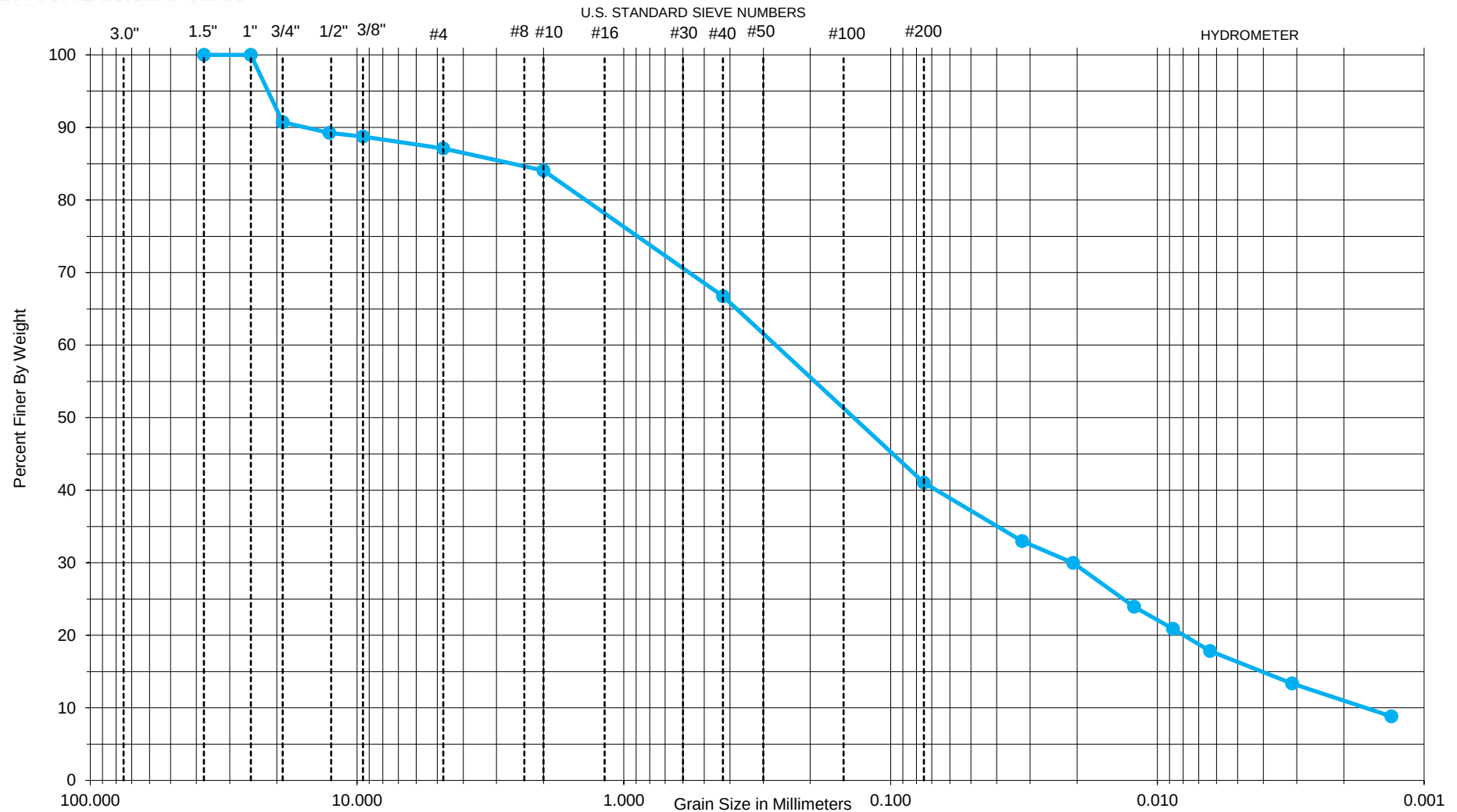
Key	Boring No.	Depth	USCS Classification	WC%	ORG%	Cc	Cu	%Gravel	%Sand	%Silt	%Clay	D60	D30	D10
●	P-01B	N/A	ORGANIC SILTY CLAYEY SAND, with gravel	171	12	6.7	285.4	22.6	55.8	14.5	7.0	1.437	0.220	0.005
REPORT OF PARTICLE-SIZE ANALYSIS OF SOIL				Kollar Park Improvements, Streamwood, IL				File No.		G23.178				

REPORT OF PARTICLE-SIZE ANALYSIS OF SOIL



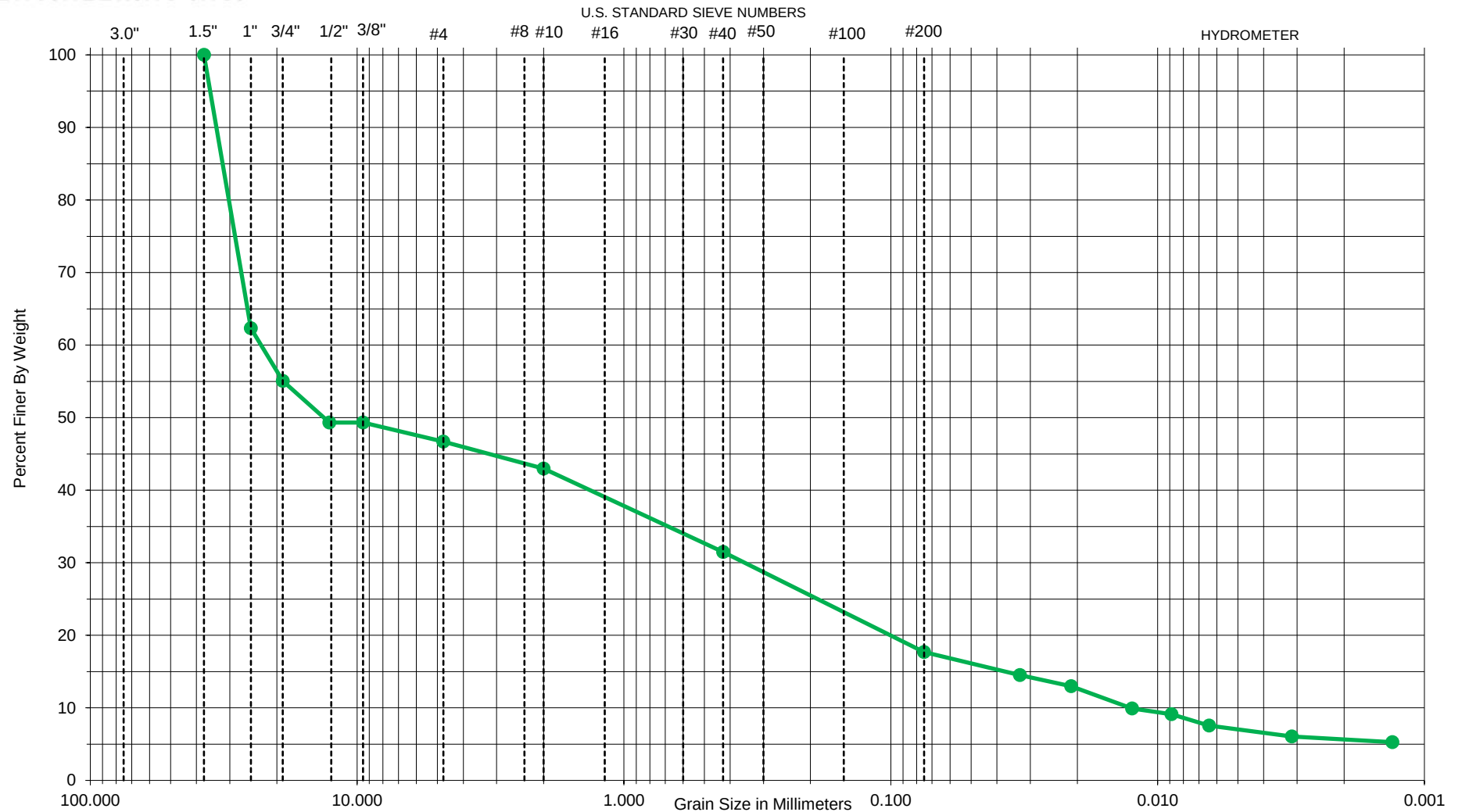
Key	Boring No.	Depth	USCS Classification	WC%	ORG%	Cc	Cu	%Gravel	%Sand	%Silt	%Clay	D60	D30	D10
●	P-02	N/A	ORGANIC SILTY CLAYEY SAND	530	65	N/A	N/A	6.12	43.98	35.14	14.76	0.222	0.017	N/A
REPORT OF PARTICLE-SIZE ANALYSIS OF SOIL			Kollar Park Improvements, Streamwood, IL					File No.	G23.178					

REPORT OF PARTICLE-SIZE ANALYSIS OF SOIL



Key	Boring No.	Depth	USCS Classification	WC%	ORG%	Cc	Cu	%Gravel	%Sand	%Silt	%Clay	D60	D30	D10
●	P-03B	N/A	ORGANIC SILTY CLAYEY SAND	249	21	0.721	185.7	12.9	46.1	30.5	10.5	0.333	0.021	0.002
REPORT OF PARTICLE-SIZE ANALYSIS OF SOIL			Kollar Park Improvements, Streamwood, IL					File No.	G23.178					

REPORT OF PARTICLE-SIZE ANALYSIS OF SOIL



Key	Boring No.	Depth	USCS Classification	WC%	ORG%	Cc	Cu	%Gravel	%Sand	%Silt	%Clay	D60	D30	D10
●	P-05B	N/A	Poorly-graded GRAVEL, with silty clay and sand	33	3	0.51	1812	53.3	29.0	12.1	5.6	23.082	0.387	0.013
REPORT OF PARTICLE-SIZE ANALYSIS OF SOIL				Kollar Park Improvements, Streamwood, IL				File No.		G23.178				

Appendix L – Pond Samples Table

P-01	P-02	P-03
		
USCS CLASSIFICATION: ORGANIC SILTY CLAYEY SAND , with gravel Moisture Content: 171% Organic Content: 12%	USCS CLASSIFICATION: ORGANIC SILTY CLAYEY SAND Moisture Content: 530% Organic Content: 65%	USCS CLASSIFICATION: ORGANIC SILTY CLAYEY SAND Moisture Content: 249% Organic Content: 21%

P-04	P-05
	
VISUAL CLASSIFICATION: ORGANIC SILTY CLAYEY SAND Moisture Content: 678% Organic Content: 78%	USCS CLASSIFICATION: POORLY-GRADED GRAVEL, WITH SILTY CLAY AND SAND Moisture Content: 33% Organic Content: 3%



September 2, 2025

To: Matt Mann, P.E.
Director of Public Works/Village Engineer
Village of Streamwood
565 S. Bartlett Road
Streamwood, Illinois 60107
630-736-3850

Re: **Additional Geotechnical Engineering
Services Report Addendum**
Kollar Park Pond Improvements
55 E Irving Park Road
Streamwood, Illinois

Rubino Project No. G23.178_ADD 1

Via email: mmann@streamwood.org

Dear Mr. Mann,

Rubino Engineering, Inc. is submitting this addendum letter in response to the request for additional geotechnical exploration services to provide foundation recommendations for the pavilion canopy and deck, the monument sign, and light pole foundations at Kollar Park in Streamwood, Illinois.

Change Order Authorization

- Rubino Change Order M23.178_Change Order 01 dated July 17, 2025; Signed and authorized by Matt Mann, PE, Director of Public Works/Village on July 23, 2025.

Project Information and Correspondence

- Rubino Engineering, Inc. submitted a geotechnical engineering report for the Kollar Park Improvements project under Rubino project number G23.178 dated December 4, 2023 after the Village reviewed and requested draft watermark be removed and report finalized.
- Various email correspondence with Devon Dillinger of Confluence, Boris Galindo of GFT, and Chandani Bhagat of Primera Engineers between June 18, 2025 and July 7, 2025 discussing the requests and providing updated information for additional foundation design recommendations for the pavilion, deck, catenary lighting, and monument sign in the vicinity of existing borings B-01 and B-07.
- Virtual teams meeting between Confluence, GFT, Primera, and Rubino discussion on additional scope on June 26, 2025
- Documents provided by Devon Dillinger of Confluence on June 26, 2025
 - "Kollar Pond - 80% CD Review Set" – plan set
 - "Kollar Pond - 50% DD Electrical Drawing" – proposed light pole boring locations
- Canopy and Deck Maximum Reactions provided by Boris Galindo of GFT via email on July 2, 2025.
- Proposed ground elevation and bearing depth for proposed monument sign provided by Primera Engineers and Confluence on July 24, 2025.
- Updated plan set (Kollar Pond - 80% CD Architecture) and existing / proposed elevations at borings LPB-01, LPB-02, and LPB-03 provided via email by Confluence on August 21, 2025.
- Estimated weight of the proposed monument sign provided via email by Confluence on August 26, 2025.
- Existing Elevation at boring B-07A provided by Confluence on September 2, 2025

Purpose / Scope of Services – Addendum

The purpose of this study was to explore the subsurface conditions at the site to prepare additional geotechnical recommendations for foundation design and seismic design for the proposed construction. Rubino's additional scope of services included the following drilling program:

Table 1a: Additional Drilling Scope

NUMBER OF BORINGS	DEPTH (FEET BEG*)	LOCATION
3	15	LPB-01 through LPB-02 (Proposed Light Poles)
1 (Extension)	Blind drill to 15 ft, Extend to 50 ft	B-07A (Proposed Performance Pavilion / Amphitheater Canopy and Deck)

*BEG = below existing grade

Representative soil samples obtained during the field exploration program were transported to the laboratory for additional classification and laboratory testing.

This addendum report briefly outlines the following:

- *Summary of additional client-provided project information and report basis*
- *Overview of additional encountered subsurface conditions*
- *Overview of additional field and laboratory tests performed, including results*
- *Geotechnical recommendations pertaining to:*
 - *Intermediate or Deep foundations bearing at or above 40 feet below existing grade for the proposed Performance Pavilion / Amphitheater Canopy and Deck*
 - *Light pole foundations, including shear strength estimates in each boring*
 - *Shallow foundation recommendations for a monument sign in the area of Boring B-01 based on site grading in this area being less than 1 foot cut or fill*
 - *Seismic Site Classification*

Subsurface Conditions – Additional Exploration

Beneath the existing topsoil, subsurface conditions in this additional exploration generally consisted of cohesive undocumented fill soils, brown, black, and/or gray organic silty clay, and gray silty clay.

- The **topsoil** thicknesses, visually observed at the additional boring locations (LPB-01, LPB-02, and LPB-03) ranged between approximately 10 and 12 inches
- The **undocumented fill** soils in the additional borings (LPB-01, LPB-02, and LPB-03) were generally cohesive in nature
- Organic silty clay soil with high moisture contents encountered within some of the borings.
- The native **silty clay** soils ranged from very soft to very stiff in consistency



Table 2a: Subsurface Conditions Summary – Addendum

APPROXIMATE ELEVATION RANGE, FEET (DEPTH RANGE, FEET BEG*)	SOIL DESCRIPTION	SPT N- VALUES (BLOWS PER FOOT)	MOISTURE CONTENT (%)
LPB-01 through LPB-03 Proposed Light Poles			
803 ½ – 796 ½ (1 – 6 ½)	FILL: brown/dark brown/black silty clay, trace sand and gravel (LPB-01 & LPB-03)	4 – 9	22 – 37
799 ½ – 791 ½ (1 – 8 ½)	Black, brown, and/or dark gray ORGANIC SILTY CLAY (LPB-01 & LPB-02)	0 – 5	57 – 190
796 ½ – 789 (3 ½ – 11)	Very soft to soft, gray silty CLAY, trace sand and gravel (LPB-01 & LPB-02)	0 – 3	25 – 32
794 ¼ – 785 (6 – 15)	Medium stiff to stiff, gray silty CLAY, trace sand and gravel	4 – 12	13 – 23
B-07 / B-07A Performance Pavilion / Amphitheater Canopy and Deck			
797 – 794 ¾ (1 – 3 ½)	Dark gray and black ORGANIC SILTY CLAY, trace sand and gravel	0	127
794 ¾ – 789 ¾ (3 ½ – 8 ½)	Very soft to soft, gray silty CLAY, trace sand and gravel	2 – 3	20 – 21
789 ¾ – 779 (8 ½ – 18 ½)	Medium stiff to stiff, gray silty CLAY, trace sand and gravel	6 – 15	15 – 20
779 – 747 ½ (18 ½ – 50)	Stiff to very stiff, gray silty CLAY, trace sand and gravel	9 – 24	16 – 22

*BEG = below existing grade

The native soils were visually classified as silty clay (CL) and organic silty clay (OL) according to the Unified Soil Classification System (USCS). The above table is a general summary of subsurface conditions. Please refer to the boring logs for more detailed information.

Estimated shear strength of clay soils is based on empirical correlations using N-values, moisture content, and unconfined compressive strength.



Organic Soils Discussion – LPB-01 through LPB-03

Organic soils greater than 10% loss on ignition were observed within some of the additional borings (LPB-01 and LPB-02) during the drilling operations; there is a possibility that organic soils could be encountered at other locations on the site.

Organic soils can later cause settlement or stability problems. If encountered during construction, Rubino recommends that organic soils be removed and replaced with a compacted and documented engineered fill.

Organic soils are defined as soils containing visible organic matter or greater than 10% organic matter as measured in a laboratory loss on ignition test. Organic soils typically consist of decomposed plant material accumulated under conditions of excessive moisture. Organic soils are dark colored in nature and may exhibit the odor of decaying vegetation.

Table 3a: Organic Content by Location – Addendum

BORING NUMBER	APPROXIMATE ELEVATION RANGE, FEET (DEPTH RANGE, FEET BEG*)	ORGANIC LOSS ON IGNITION LOI%
LPB-01	796 ½ – 791 ½ (3 ½ – 8 ½)	25% – 28%
LPB-02	799 ½ – 796 ½ (½ – 3 ½)	25%
B-07	See <u>Organic Soils Discussion</u> in Rubino Report G23.178 dated December 4, 2023	

*BEG = below existing grade

Undocumented Fill Discussion – LPB-01 through LPB-03

Undocumented fill was observed in the additional borings LPB-01 and LPB-03 to depths of about 3 ½ to 6 ½ feet below existing grade.

Where existing fill is encountered, Rubino recommends that structure foundations extend through the fill materials and be supported on suitable soils, intermediate foundations, cured flowable fill, or compacted and documented structural fill. See the foundation recommendations section for more details.

Undocumented fill is defined as fill that has been placed without being documented as to its placed density and moisture content.

Deleterious materials could include, but are not limited to, bricks, asphalt, concrete, metal, wood, or other building debris.

Deleterious materials were not observed within the undocumented fill materials during the drilling operations for the above referenced borings. Although deleterious materials were not encountered in the undocumented fill materials, this does not eliminate the possibility that deleterious materials could be present within the undocumented fill materials at other locations along the project.

If encountered during construction, fill with deleterious materials should be removed and replaced with structural fill at the geotechnical field engineer's discretion at the time of construction.



Topsoil Discussion – LPB-01 thru LPB-03

Topsoil materials as described in this report have not been analyzed for quality according to any minimum specifications. If topsoil is to be imported to or exported from this site, Rubino recommends that it meet the minimum specifications defined in **Section 1081.05** of the *IDOT Standard Specifications for Road and Bridge Construction*, adopted by the Illinois Department of Transportation, January 1st, 2022.

Rubino has reported topsoil thicknesses at each of the additional boring locations (LPB-01, LPB-02, and LPB-03) based on visual observation of surficial soils. Surficial topsoil thickness was visually observed to be between approximately 10 and 12 inches.

Site Preparation – Additional Exploration

The following comments are considered site-specific and should be considered in addition to the Site Preparation section of Rubino report G23.178 dated December 4, 2023. To reference general subgrade preparation recommendations and compaction recommendations, please refer to the Appendix of the original Rubino report, G23.178 dated December 4, 2023.

- Prior to placing fill, organic soils should be removed and subgrade soils should be documented by subgrade stability testing as recommended in the Appendix to Rubino report G23.178 dated December 4, 2023.
- Subgrade soils will likely need to be stabilized / remediated during mass grading and prior to placing structural fill and structural elements. Rubino recommends including a nominal quantity for undercuts in addition to where organic soils are encountered and removed and in structural areas where low-strength soils are encountered.
- After the subgrade has been tested, documented, and remediated as recommended, fill placement required to establish grades may begin as applicable. The new fill materials should be placed and compacted per *Appendix C* of Rubino report G23.178 dated December 4, 2023.
- A maximum of approximately 7 feet of structural fill placement is expected to achieve final grades in the area of the proposed pavilion canopy / deck structure. This fill estimate is based on the existing and the proposed elevations at boring locations B-07/B-07A using the documents provided at the time this report was prepared.
 - Rubino recommends that settlement monitoring points be placed to monitor settlement over time. After the primary settlement has taken place, foundations for the structures can be constructed.

Foundation Recommendations for Proposed Monument Sign (B-01 & LPB-03)

The proposed monument sign structure can be supported on shallow, spread footing foundations after undercuts are performed and backfilled with properly compacted and tested structural fill. Please see the *Fill Recommendations* and *Foundation Construction Recommendations* Appendices in Rubino report G23.178 dated December 4, 2023 for more details.

Undercuts have been estimated based on existing elevations at borings B-01 and LPB-03, the proposed elevation at the proposed monument sign, and the proposed footing width of the



foundation sign provided to Rubino by Confluence and Primera Engineers via email and planset. The following bullets provide the basis for the bearing capacity recommendations provided in *Table 4a*.

- Proposed grade elevation: 805 ½ feet
- Proposed foundation bearing elevation: 801 ½ feet
- Foundation width: 6 feet

Rubino recommends the foundations bear on suitable bearing soils to achieve the specified bearing capacities (reference boring logs for suitable bearing soil classification at each location):

Table 4a: Monument Sign Bearing Capacity Recommendations

BORING NUMBER	PROPOSED GRADE ELEVATION (FEET)	BORING SURFACE ELEVATION (FEET)	ESTIMATED FOOTING DESIGN BEARING ELEVATION (FEET)	APPROXIMATE ELEVATION OF SUITABLE BEARING SOILS (FEET)	MAX NET ALLOWABLE BEARING CAPACITY (PSF)
B-01 & LPB-03	805 ½	804 ½ – 803 ½	801 ½	798 – 797 ½	2,500

Foundation excavations should be widened in accordance with *Appendix D* of Rubino report G23.178 dated December 4, 2023, unless lean concrete is utilized as backfill for the undercuts.

Rubino recommends that undercuts extend through undocumented fill soils, low strength soils, topsoil, and organic soils as determined by the geotechnical engineer at the time of construction.

Design / Construction – Frost Protection

Exterior footings should be located at a depth of at least 3 ½ feet below the outside final exterior grades to provide adequate frost protection. If the structure is constructed during winter months or if the footings will likely be subjected to freezing temperatures after construction is completed, then the footings should be protected from freezing.

Design – Settlement Estimate

Based on the known subsurface conditions, laboratory testing, and past experience, Rubino anticipates that properly designed and constructed footings supported on the recommended, observed and documented natural soils, or properly compacted structural fill should experience maximum total settlement of 1 inch.

Light Pole Foundation Recommendations (LPB-01 to LPB-03 & B-07)

Design – Estimate Soil Shear Strengths

The proposed lights are anticipated to be supported by drilled shaft foundations. Rubino understands that the foundations will extend to a minimum of 8'-6" below proposed finished grade and have a diameter of 30 inches. Drilled shaft foundations may need to be extended in areas of fill or unsuitable soils.

Unconfined compressive strength estimates based on the encountered soils can be found below:



Table 5a: Light Pole Foundation Bearing Capacity Recommendations

DESCRIPTION		LIGHT POLE GEOTECHNICAL RECOMMENDATIONS
Anticipated Foundation Type:		Drilled Shaft Foundation
Proposed Diameter (per Kollar Pond 80% CD Review Set):		30 inches
Existing Ground Elevation at each boring location (provided by Confluence)		LPB-01: 799.9 feet LPB-02: 800.3 feet LPB-03: 804.4 feet B-07: 798 feet
Proposed Bearing Elevation (per Kollar Pond 80% CD Review Set):		8 ft-6 in below proposed ground elevation
Silty Clay Estimated Unconfined Compressive Strength within the borings at depths below existing grade:		
LPB-01:	8 ½ ft – 11 feet BEG*	0 – 0.5 tsf
	11 – 13 ½ feet BEG*	1.0 – 1.25 tsf
	13 ½ – 15 feet BEG*	1.75 – 2.0 tsf
LPB-02:	3 ½ – 8 ½ feet BEG*	0.5 – 0.75 tsf
	8 ½ – 15 feet BEG*	1.75 – 2.0 tsf
LPB-03:	0 – 6 ½ feet BEG*	1.0 – 1.25 tsf
	6 – 8 ½ feet BEG*	1.0 – 1.25 tsf
	8 ½ – 15 feet BEG*	1.75 – 2.0 tsf
B-07:	3 ½ – 8 ½ feet BEG*	0.5 – 1.0 tsf
	8 ½ – 11 feet BEG*	0.75 – 1.0 tsf
	11 – 20 feet BEG*	1.75 – 2.0 tsf

*BEG = below existing grade

The top 4 feet of shaft length should not be included in the allowable skin friction due to frost action.

Foundation Options for Proposed Pavilion Canopy and Deck (B-07 / B-07A)

Rubino understands a pavilion canopy and deck structure are proposed as part of the park improvements. Boris Galindo of GFT provided the following design information for the proposed pavilion canopy and deck:

- Canopy Maximum Reactions:
 - Moment: 200 kip*ft, Shear: 32-kip, Torsion: 60-kip, Axial: 90-kip
- Deck Maximum Reactions:
 - Axial: 100 kip



Based on the subsurface conditions encountered in boring B-07/B-07A, Rubino is providing the following geotechnical recommendations for foundations options at the proposed pavilion canopy and deck structures.

- Shallow Foundations bearing on Stone Columns
- Intermediate Foundations bearing on helical piers
- Deep foundations – Drilled Shafts

Shallow Foundation Option supported by Stone Columns

The proposed pavilion canopy and deck can be supported on shallow, spread footing foundations that are supported by a **stone column system to be designed and installed by a specialty contractor**.

Maximum net allowable soil bearing pressure may be on the order of **3,000 psf** depending on the final design by the specialty contractor.

Stone Column Features:

- Stone Columns are considered an intermediate ground improvement system
- They create a very dense, stiff, rock pier that expands the drilled shaft and reinforces the subgrade soil.
- Shallow foundations can be constructed on top of the piers.
- Can be constructed in shallow groundwater conditions
- Some systems generate no spoils

Stone Column Considerations:

- Generate vibrations that could affect adjacent structures.
- Require special equipment to construct the piers.
- Require proprietary design by a specialty contractor

Intermediate Foundation Option - Helical Piers

Helical piers are an intermediate foundation option that can be designed and incorporated into a pile cap for support of the structure.

There are many possibilities for helical pier design. The spacing of the helical on the shaft and the diameter helical should be selected based on the requirements of the foundation reinforcement as a result of the loading. The helical pier installer or manufacturer should be consulted to perform the design of the helical piers for each specific location on site.

The connections between the helical piers and the foundations should be designed by the structural engineer and the load transfer characteristics of the existing foundations should be considered in selecting the helical pier spacings.

Helical pier design and installation should be performed by qualified personnel. Rubino recommends that helical pier installation be observed and documented by a representative of Rubino to evaluate the consistency of the soils in the field with the geotechnical report findings.



Deep Foundation Option – Drilled Shaft

Based on the subsurface conditions encountered in boring B-07/B-07A, deep foundations are also an option for the proposed pavilion canopy and deck structures. This report is based on the organic soil being removed as part of the mass grading operations of this project.

Table 6a below includes parameters for deep foundation design. The allowable end bearing values include a factor of safety of 3 and the allowable skin friction values include a factor of safety of 2. Lateral parameters have been included for use in discrete element analysis software such as LPILE or COM624P.

Table 6a: Pavillion Canopy / Deck Soil Parameters (B-07 and B-07A)

SOIL TYPE	APPROXIMATE ELEVATION RANGE (FEET)	ESTIMATED UNIT WEIGHT (PCF)	ALLOWABLE END BEARING (PSF)	ESTIMATED SHEAR STRENGTH (PSF)	ALLOWABLE SKIN FRICTION** (PSF)	STATIC LATERAL MODULUS (PCI)	STRAIN FACTOR, E ₅₀
Structural Fill	802 – 794 ½*	125	n/a	n/a	n/a	n/a	n/a
Very soft to soft, Silty CLAY	794 ½ – 789 ½	110	1,000	350	100	30	0.02
Medium stiff, silty CLAY	789 ½ – 787	115 – 120	2,000	900	225	200	0.0085
Medium stiff to stiff, silty CLAY	787 – 782	120 – 125	3,000	1,250	275	750	0.0075
Stiff to very stiff, silty CLAY	782 – 750	125 – 130	4,500	1,700	400	600	0.0065

*Upper 5 feet of the shaft should be ignored in the development of skin friction.

**The skin friction should be ignored one shaft diameter above the bearing depth

Deep Foundation Settlement Estimate

Based on a maximum axial load range of 90 – 100 kips per drilled pier bearing on native stiff silty clay or better, and the results of field investigation, total settlement per pier is expected to be less than 1 inch.

General Design Considerations – Drilled Piers

- The overall structural stresses under the design load occurring in the installed pier shaft should be equal to or less than those allowed by local codes or as specified herein.
- This report does not include structural design for the deep foundation elements.
- Uplift capacity requirements were not available at the time this report was prepared. Please see Uplift Capacity section below for more information.

Pier Groups

If grouped piers are considered for the foundations, the capacity of the pile group can be taken as the sum of the capacities of the individual piles multiplied by the efficiency of the group.

Ideally, the piles should be placed so that the areas of influence of adjacent piles do not interact, thus allowing an efficiency of 100% to be used in the design. In general, a center-to-center pile spacing of 3 times the pile diameter is sufficient to allow for 100% efficiency.

The ultimate capacity of a grouped pile system depends on the size of the piles used, the configuration of the piles in the group, and the spacing of the piles.



Deep foundations that are not bearing on a very stiff stratum such as rock shall be at least 3 diameters apart from each other or **group reduction factors** will need to be employed in the design capacity of these members.

The installation of piers shall not be performed within a distance equal to 8 diameters of pier elements that have been installed fewer than 24-hours previously.

Lateral Load Analysis

The lateral capacity is directly linked to the strain characteristics of the foundation element. The lateral loads on the piers can be calculated with the parameters provided in *Table 6a* above. These parameters are for analytical programs such as L-Pile or COM624P which will analyze both the applied load verse strain resistance of the soil and the deflection of the structural element. The parameters given are ultimate values and a factor of safety of 2.0 should be applied to these values to evaluate the allowable limits. In general, the upper 5-feet below grade of the pier is ignored in the lateral capacity for exterior piles and for areas exposed to footings.

Uplift Capacity

The uplift capacity for the deep foundations is equal to the allowable skin friction and the weight of the pier. The effective weight of the pier concrete (at 145 pcf) should be included in the uplift calculations. If uplift is a concern at this site, please notify the geotechnical engineer prior to finalizing structural design.

Pile Load Test

The drilled pier capacities recommended in this report are based on empirical methods using a factor of safety. Actual capacities can be measured by performing a pile load test. Pile load testing can reduce the factor of safety used in design.

If desired by the client, the load test should be performed in general accordance with the "Standard Method of Testing Piles under Axial Compressive Load," (ASTM D1143) prior to constructing the remaining pier foundations.

Procedures required for constructing the test pier should be observed to establish desirable procedures for constructing the remaining piers. The test pier concrete should be at least 14-days old at the start of the load test with a 7-day break of a test cylinder of at least 80 % of the ultimate design strength. Accurate records of the piers' installations shall be obtained during construction.

Construction Considerations – Drilled Piers

Sequencing

- The sequence of operations should be scheduled so that each pier is drilled, reinforcing steel is placed, and concrete is placed in a continuous, rapid, and orderly manner to reduce the time the excavation is open.
- To facilitate pier construction, concrete should be on site and ready for placement as the pier excavation is completed.
- The foundation excavation should be cleaned of loose or disturbed materials and any free water before placing reinforcing steel and concrete.
- Precautions should be taken to permit the pier to be drilled and installed under relatively dry conditions. Pumping of the pier excavations may be required prior to the installation of the concrete.



Concrete Considerations

- To reduce the lateral movement of the pier, the contractor must **fill voids or enlargements** in the pier shaft excavation with concrete at the time of concrete placement.
- If **drilling fluid** is used or there is an inflow of water into the excavation, drilled pier concrete should be placed by tremie methods.
- **Concrete slumps** ranging from 4 to 7-inches are recommended for drilled pier construction. Concrete with slumps in this range will usually fill irregularities along the side and bottom of the hole. The concrete slump for tremie methods should be 7 to 9 inches.
- Concrete should be placed into the drilled hole through a **centering chute** at the surface to prevent contact with the sides of the hole and reinforcing steel. This procedure will reduce the potential side flow and segregation.

Seismic Site Classification – Pavillon Canopy/Deck

The 2015 International Building Code requires a site class for the calculation of earthquake design forces. This class is a function of soil type (i.e., depth of soil and strata types). Based on the estimated depth to rock, the estimated shear strength of the soil at the boring location (B-07/B-07A), and the recommended removal of organic soils from the site, Site Class “D” is recommended.

This site class is recommended based on Rubino’s opinion and experience in the area that the consistency of the soils below the depth explored remain consistent or improve in density. Actual determination of soil properties to a depth of 100 feet was beyond the scope of this project.

The SEAOC/OSHPD probabilistic ground motion values near latitude 42.0103876° and longitude –88.1701923° are shown in the table to the right.

Design Code Reference Document	IBC-2015
Risk Category	II
Site Class	D

Type	Value	Description
S _S	0.145	MCE _R ground motion. (for 0.2 second period)
S ₁	0.062	MCE _R ground motion. (for 1.0s period)
S _{MS}	0.231	Site-modified spectral acceleration value
S _{M1}	0.149	Site-modified spectral acceleration value
S _{DS}	0.154	Numeric seismic design value at 0.2 second SA
S _{D1}	0.099	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	B	Seismic design category
F _a	1.6	Site amplification factor at 0.2 second
F _v	2.4	Site amplification factor at 1.0 second
PGA	0.076	MCE _G peak ground acceleration

Closing

All terms, conditions, and recommendations from Rubino report number G23.178 dated December 4, 2023 remain in effect unless explicitly addressed in this addendum letter. Rubino appreciates the opportunity to continue providing services for this project.

If you have questions pertaining to this report, or if Rubino may be of further service, please contact our office at (847) 931-1555.

Respectfully Submitted,
Rubino Engineering, Inc.

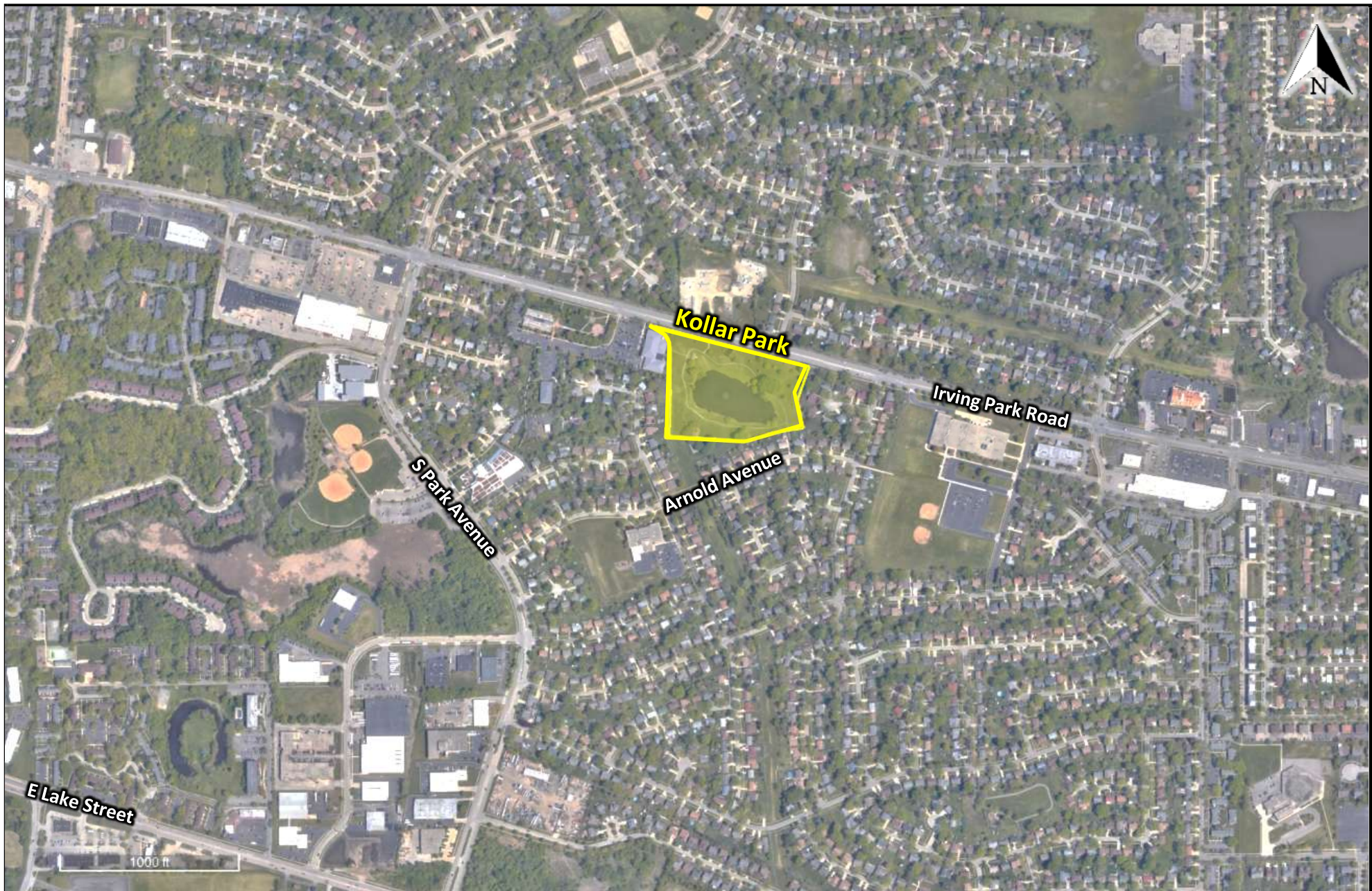


Michelle Lipinski, P.E.
President

Attachments:

Boring Location Plan / Site Vicinity Map
Boring Logs





425 Shepard Drive
Elgin, Illinois 60123

Project Name:
Project Location:

Client:
Rubino Project # :

Kollar Park Pond Improvements

55 E Irving Park Road
Streamwood, Illinois

Village of Streamwood
G23.178_ADD1

**Site
Vicinity
Map**



rubino
ENGINEERING INC.

425 Shepard Drive
Elgin, Illinois 60123

Project Name:
Project Location:

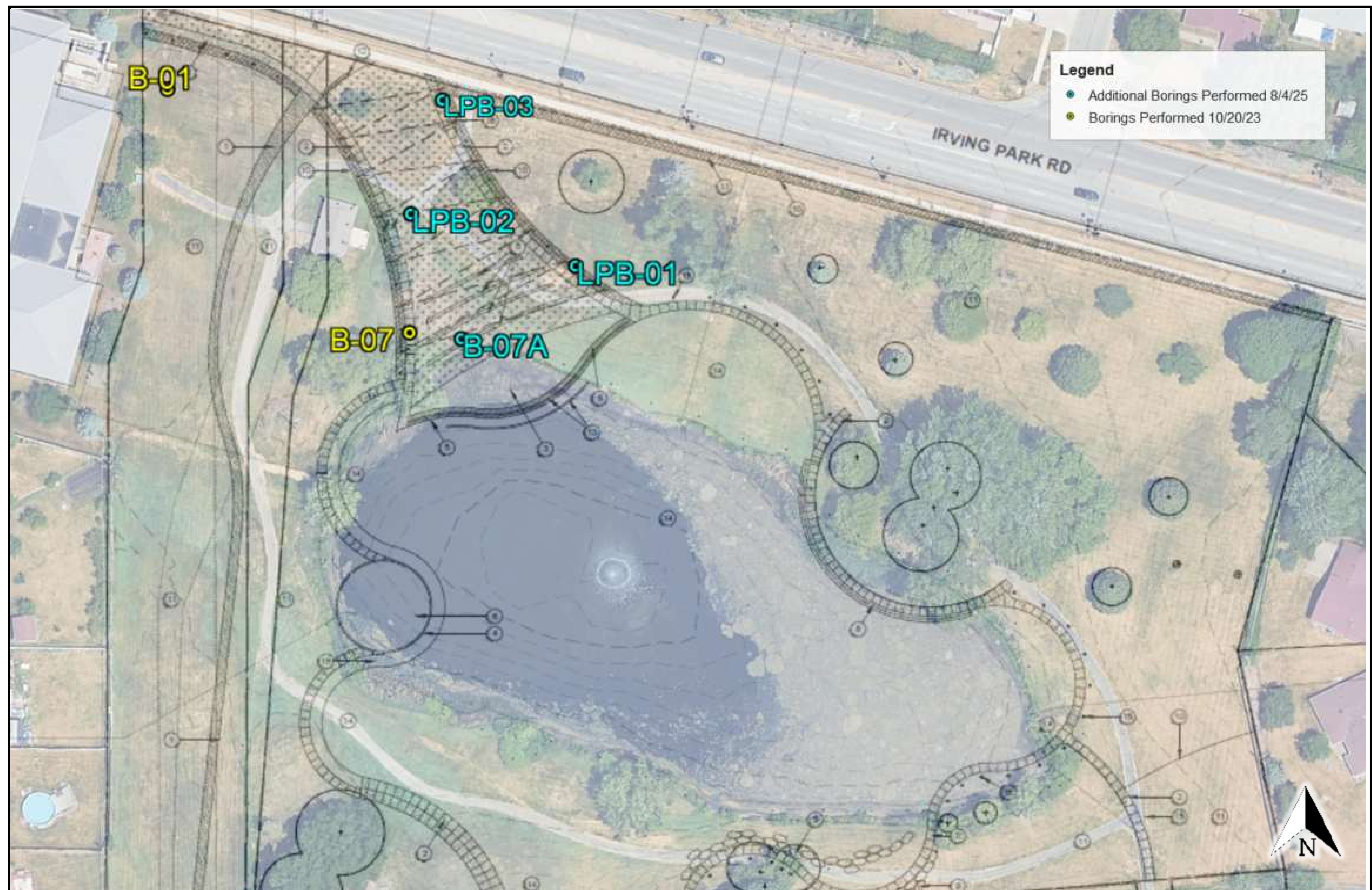
Client:
Rubino Project # :

Kollar Park Pond Improvements

55 E Irving Park Road
Streamwood, Illinois

Village of Streamwood
G23.178_ADD1

**Boring
Location
Plan 1**



rubino
ENGINEERING INC.

425 Shepard Drive
Elgin, Illinois 60123

Project Name:
Project Location:

Client:
Rubino Project # :

Kollar Park Pond Improvements

55 E Irving Park Road
Streamwood, Illinois

Village of Streamwood
G23.178_ADD1

**Boring
Location
Plan 2**

Rubino Job No.: G23.178	Drilling Method: 2 ¼ Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Gateway Water Well Plaza	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth, (feet)	Graphic Log	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA	Additional Remarks
						Surface Elev.: 803.45 ft				◎ Moisture × PL ▲ Qu (Rimac) *Qp/Qr 0 25 50 0 2.0 4.0	
800	0		1	9		Approximately 6 inches of TOPSOIL: dark brown silty clay, with roots and organic matter	CL	4-3-3 N=6	24	×	Qp=2.25 tsf
795	5		2	0		Soft to medium stiff, brown and gray silty CLAY, trace sand and gravel	CL	2-1-2 N=3	20	×	
			3	18		Stiff, brown and gray silty CLAY, trace sand and gravel	CL	4-5-6 N=11	16	×	Qp=4.50 tsf
			4	16		Color transitions to just gray at approximately 8½ feet below existing grade.		3-3-5 N=8	17	×	Qp=3.75 tsf
	10					End of boring at approximately 10 feet below existing grade.					

Completion Depth: 10.0 ft	Sample Types:	Latitude: 42.0108250
Date Boring Started: 10/20/23	Auger Cutting	Longitude: -88.1707676
Date Boring Completed: 10/20/23	Split-Spoon	Drill Rig: Geoprobe 7822DT
Logged By: P.P.	Rock Core	Remarks:
Drilling Contractor: Rubino Engineering, Inc.	Direct Push	Log Entry: J. Ignarski
	Shelby Tube	Checked By: J. Ignarski
	Grab Sample	
	No Recovery	

The stratification lines represent approximate boundaries. The transition may be gradual.

***Please reference the geotechnical report text for specific groundwater / dewatering recommendations and elevation definitions.

Rubino Job No.: G23.178	Drilling Method: 2 ¼ Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Performance Pavilion and Amphitheater	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STRENGTH, tsf	Additional Remarks
							Surface Elev.: 798.22 ft					
	0			1	0		Approximately 12 inches of TOPSOIL: dark brown silty clay, with roots and organic matter	OL	0-0-0 N=0	127		>>> 12% Organic Content
795				2	18		Dark gray and black ORGANIC SILTY CLAY, trace sand and gravel <i>No recovery. Soils classified from auger cuttings.</i>		0-1-1 N=2	20	×	Qp=1.00 tsf
5				3	18		Very soft to soft, gray silty CLAY, trace sand and gravel	CL	0-1-2 N=3	21	×	Qp=1.25 tsf
790				4	18		Medium stiff to stiff, gray silty CLAY, trace sand and gravel		2-2-4 N=6	20	×	Qp=1.00 tsf
10				5	6				5-5-7 N=12	15	×	Qp=4.50 tsf
785				6	15			CL	1-3-4 N=7	16	×	Qp=2.50 tsf
15				7	16				3-4-7 N=11	16	×	Qp=3.50 tsf
780							End of boring at approximately 20 feet below existing grade.					
20												

Completion Depth: 20.0 ft	Sample Types:	Latitude: 42.0103876
Date Boring Started: 10/20/23	Auger Cutting	Longitude: -88.1701923
Date Boring Completed: 10/20/23	Split-Spoon	Drill Rig: Geoprobe 7822DT
Logged By: P.P.	Rock Core	Remarks:
Drilling Contractor: Rubino Engineering, Inc.	Direct Push	Log Entry: J. Ignarski
	Shelby Tube	Checked By: J. Ignarski
	Grab Sample	
	No Recovery	

The stratification lines represent approximate boundaries. The transition may be gradual.

***Please reference the geotechnical report text for specific groundwater / dewatering recommendations and elevation definitions.

Rubino Job No.: G23.178	Drilling Method: 3 1/4 Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Performance Pavilion and Amphitheater	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA	Additional Remarks
							Surface Elev.: 797.50 ft				◎ X Moisture PL LL STRENGTH, tsf ▲ Qu (Rimac) *Qp/Qr	
795	0						Blind drill to approximately 16 feet below existing grade.					
790	5											
785	10											
780	15											
775	20						Stiff to very stiff, gray silty CLAY, trace sand and gravel		4-7-8 N=15	16	Qp=3.00 tsf	
770	25								5-5-6 N=11	19	Qp=2.25 tsf	
765	30								4-7-8 N=15	21	Qp=2.75 tsf	
760	35								3-5-7 N=12	16	Qp=2.50 tsf	
755	40							CL	3-4-5 N=9	19	Qp=2.25 tsf	
750	45								3-4-5 N=9	22	Qp=2.25 tsf	
	50						End of boring at approximately 50 feet below existing grade.		7-10-14 N=24	18	Qp=4.50 tsf	
									4-4-7 N=11	22	Qp=2.50 tsf	

Completion Depth: 50.0 ft	Sample Types:	Latitude: 42.0103769
Date Boring Started: 8/4/25	Auger Cutting	Longitude: -88.1700689
Date Boring Completed: 8/4/25	Split-Spoon	Drill Rig: Geoprobe 3126GT
Logged By: J.K.	Rock Core	Remarks:
Drilling Contractor: Rubino Engineering, Inc.	Direct Push	Log Entry: J. Ignarski
	Shelby Tube	Checked By: J. Ignarski
	Grab Sample	
	No Recovery	

The stratification lines represent approximate boundaries. The transition may be gradual.

***Please reference the geotechnical report text for specific groundwater / dewatering recommendations and elevation definitions.

Rubino Job No.: G23.178	Drilling Method: 3 1/4 Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Light Pole	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STRENGTH, tsf	Additional Remarks
							Surface Elev.: 799.90 ft					
	0			1	0		Approximately 12 inches of TOPSOIL: dark brown silty clay, with roots and organic matter		2-2-2 N=4	37		5% Organic Content
				2	2		FILL: brown silty clay, trace sand and gravel <i>No recovery. Soils classified from auger cuttings.</i>	OL	2-2-3 N=5	85		>> 25% Organic Content
795	5			3	2		Black and brown ORGANIC SILTY CLAY, trace sand and gravel <i>Low recovery. Additional sample taken from auger cuttings.</i>	OL	0-0-0 N=0	190		>> 28% Organic Content
				4	16		Dark gray ORGANIC SILTY CLAY, trace gravel <i>Low recovery. Additional sample taken from auger cuttings.</i>	CL	0-0-0 N=0	25		Qp=0.50 tsf 1% Organic Content
790	10			5	18		Very soft, gray silty CLAY, trace sand and gravel	CL	0-3-3 N=6	23		Qp=1.25 tsf
				6	18		Medium stiff to stiff, gray silty CLAY, trace sand and gravel	CL	3-4-6 N=10	19		Qp=2.25 tsf
785	15						End of boring at approximately 15 feet below existing grade.					

Completion Depth: 15.0 ft	Sample Types:	Latitude: 42.0105081
Date Boring Started: 8/4/25	Auger Cutting	Longitude: -88.1697960
Date Boring Completed: 8/4/25	Split-Spoon	Drill Rig: Geoprobe 3126GT
Logged By: J.K.	Rock Core	Remarks:
Drilling Contractor: Rubino Engineering, Inc.		Log Entry: J. Ignarski
		Checked By: J. Ignarski

The stratification lines represent approximate boundaries. The transition may be gradual.

***Please reference the geotechnical report text for specific groundwater / dewatering recommendations and elevation definitions.

Rubino Job No.: G23.178	Drilling Method: 3 1/4 Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Light Pole	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA	Additional Remarks
							Surface Elev.: 800.30 ft				◎ Moisture × PL ▲ Qu (Rimac) *Qp/Qr	
800	0			1	10		Approximately 10 inches of TOPSOIL: dark brown silty clay, with roots and organic matter Black ORGANIC SILTY CLAY, trace sand and gravel	OL	3-3-2 N=5	57		>>> 25% Organic Content
				2	16		Soft to medium stiff, gray silty CLAY, trace sand and gravel		0-2-1 N=3	32	×	Qp=1.00 tsf 2% Organic Content
795	5			3	18			CL	0-2-2 N=4	22	×	Qp=0.75 tsf
				4	18		Stiff, gray silty CLAY, trace sand and gravel		3-4-6 N=10	19	×	Qp=2.50 tsf
790	10			5	18			CL	4-5-7 N=12	18	×	Qp=2.50 tsf
				6	18				3-3-5 N=8	13	×	Qp=2.75 tsf
	15						End of boring at approximately 15 feet below existing grade.					

Completion Depth: 15.0 ft	Sample Types:	Latitude: 42.0106013
Date Boring Started: 8/4/25	Auger Cutting	Longitude: -88.1701883
Date Boring Completed: 8/4/25	Split-Spoon	Drill Rig: Geoprobe 3126GT
Logged By: J.K.	Rock Core	Remarks:
Drilling Contractor: Rubino Engineering, Inc.	Direct Push	Log Entry: J. Ignarski
	Shelby Tube	Checked By: J. Ignarski
	Grab Sample	
	No Recovery	

The stratification lines represent approximate boundaries. The transition may be gradual.

***Please reference the geotechnical report text for specific groundwater / dewatering recommendations and elevation definitions.

Rubino Job No.: G23.178	Drilling Method: 3 1/4 Hollow Stem Auger	WATER LEVELS***
Project: Kollar Pond Park Improvements	Sampling Method: Split Spoon	▽ While Drilling N/A
Location: 55 E Irving Park Road	Hammer Type: Automatic	▼ Upon Completion N/A
City, State: Streamwood, Illinois	Boring Location: Light Pole	▼ Delay N/A
Client: Village of Streamwood		

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	Station: N/A Offset: N/A	MATERIAL DESCRIPTION	Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA			Additional Remarks
											0 25 50			
											0 2.0 4.0			

Completion Depth: 15.0 ft	Sample Types:	Latitude: 42.0108053
Date Boring Started: 8/4/25	Auger Cutting	Longitude: -88.1701129
Date Boring Completed: 8/4/25	Split-Spoon	Drill Rig: Geoprobe 3126GT
Logged By: J.K.	Rock Core	Remarks:
Drilling Contractor: Rubino Engineering, Inc.	Direct Push	Log Entry: J. Ignarski
	Shelby Tube	Checked By: J. Ignarski
	Grab Sample	
	No Recovery	

The stratification lines represent approximate boundaries. The transition may be gradual.

***Please reference the geotechnical report text for specific groundwater / dewatering recommendations and elevation definitions.

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32 15 40	LANDSCAPE BOULDERS
32 15 43	STABILIZED DECOMPOSED GRANITE PAVING
32 32 16	PRECAST MODULAR BLOCK RETAINING WALL
32 84 23	UNDERGROUND SPRINKLERS
32 91 19	LANDSCAPE GRADING
32 92 19	SEEDING
32 92 23	SODDING
32 93 00	PLANTS
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KOLLAR POND
PHASE 1
Streamwood, Illinois

PROJECT# 24255 CH
100% CONSTRUCTION DOCUMENTS
AUGUST 2026

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**SECTION 000115
 LIST OF DRAWING SHEETS
 (ADDENDUM 1 - 09/17/2026)**

PAGE	NAME
GN000	COVER
GN001	NOTE & CODE REVIEW
LD100	SITE PREPARATION PLAN
LS100	HARDSCAPE PLAN
LP100	PLANTING PLAN
LP101	PLANTING PLAN ENLARGEMENT - NORTH
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LS501	PLANTING DETAILS
C001	CIVIL GENERAL NOTES & MWRD ROUTING MAP
C100	EXISTING CONDITIONS PLAN
C200	EROSION AND SEDIMENT CONTROL PLAN
C300	SUGGESTED PHASING/DEWATERING PLAN
C400	GEOMETRY PLAN
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C500	UTILITY PLAN
C600	GRADING PLAN
C700	CIVIL DETAILS
C701	CIVIL DETAILS
C702	CIVIL DETAILS
C703	CIVIL DETAILS
C704	CIVIL DETAILS
C705	CIVIL DETAILS
E000	ELECTRICAL GENERAL NOTES
E200	SITE LIGHTING PLAN PHASE 1
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E500	ELECTRICAL SCHEDULES PHASE 1
E500	ELECTRICAL SCHEDULES PHASE 2
E501	ELECTRICAL SECTIONS AND DETAILS
S-100	STRUCTURAL GENERAL NOTES
S-200	STRUCTURAL FOUNDATION PLANS AND SECTIONS
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A-101.1	FLOOR PLAN - LEVEL 1
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A-201.1	ENLARGED PLAN - COMPOSITE DECKING INFILL
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A-301.1	RENDERING - FOR INFORMATION ONLY
A-401.1	DETAILS
AD-101.2	DEMOLITION PLAN - LEVEL 1
A-100.2	SITE PLAN
A-101.2	FLOOR PLAN - LEVEL 1
A-102.2	ROOF PLAN
A-200.2	ELEVATIONS
A-201.2	ENLARGED PODS @ TOP OF DECK
A-300.2	RENDERING FOR INFORMATION ONLY
A-301.2	RENDERING FOR INFORMATION ONLY
A-302.2	RENDERING FOR INFORMATION ONLY
A-303.2	RENDERING FOR INFORMATION ONLY
A-401.2	DETAILS
SB-001	STRUCTURAL NOTES
SB-101.1	STRUCTURAL FOUNDATION PLAN
SB-102.1	STRUCTURAL DECK FRAMING PLAN
SB-102.2	STRUCTURAL DECK FRAMING PLAN PHASE 2
SB-103.2	STRUCTURAL CANOPY ROOF FRAMING PLAN
SB-201.2	STRUCTURAL SECTIONS - CANOPY ROOF
SB-501.1	STRUCTURAL DETAILS - FOUNDATION
SB-502.1	STRUCTURAL DETAILS - STEEL
SB-502.2	STRUCTURAL DETAILS - STEEL PHASE 2
SB-503.2	STRUCTURAL DETAILS - CANOPY COLUMN I
SB-504.2	STRUCTURAL DETAILS - CANOPY COLUMN II

END OF SECTION 000115

SECTION 313700
RIPRAP
(ADDENDUM #1)

PART 1 GENERAL

1.01 WORK INCLUDES

A. Base Bid:

1. General Contractor:

- a. Furnish and install riprap at locations indicated on the Drawings, including riprap stone, nonwoven geotextile, aggregate bedding, excavation, subgrade preparation, placement, grading, and incidental work required for a complete installation.*

1.02 SCOPE

- A. The following specification contains scope to be performed by the General Prime Contractor.*

1.03 RELATED WORK

- A. Section 31 20 00 - Earth Moving.*
B. Section 32 02 00 - Aggregate.
C. Section 33 42 00 - Storm Sewer System.
D. Drawings, including C500 Utility Plan and LS500 Site Details.

1.04 SUBMITTALS

- A. Source Information: Submit the quarry or supplier name, stone type, and representative photograph or product information demonstrating compliance with the specified stone size before delivery to the site.*
B. Geotextile Product Data: Submit product data when not previously submitted under Section 33 42 00.

1.05 QUALITY ASSURANCE

- A. Provide riprap from a consistent source for each continuous installation area.*
B. Materials installed within aquatic resource areas shall be clean fill and free of contaminants, consistent with the Drawings and Contract Documents.

PART 2 PRODUCTS

2.01 RIPRAP

- A. General: Natural quarry stone that is sound, hard, dense, durable, and resistant to weathering. Stone shall be free of soil, clay, shale, organic matter, debris, and defects that could impair performance.*
B. Source: Contractor's option, subject to compliance with this Section.
C. Stone Size: 5 to 7 inches nominal diameter, measured across the intermediate dimension of the individual stone.
D. Shape: Angular to subangular stone suitable for stable interlocking placement. Rounded river stone is not permitted.
E. Cleanliness: Stone shall be clean and reasonably free of fines and deleterious material at time of placement.

2.02 AGGREGATE BEDDING

- A. Coarse Aggregate Type A1, IDOT CA-7, complying with Section 31 20 00.*

2.03 GEOTEXTILE

- A. Nonwoven geotextile complying with the requirements for nonwoven subsurface geotextile in Section 33 42 00.*

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify lines, grades, limits, outlet locations, and adjacent work before installation.*
B. Do not place riprap over soft, unstable, frozen, or excessively wet subgrade, or in standing water unless installation conditions are specifically accepted by the Engineer.

3.02 SUBGRADE PREPARATION

- A. Excavate and shape subgrade to the lines, grades, and limits indicated on the Drawings.*
B. Remove loose material, debris, roots, and other unsuitable material. Prepare a firm, stable surface before placement of geotextile and bedding.
C. Correct overexcavated, disturbed, or unsuitable areas before proceeding.

3.03 GEOTEXTILE INSTALLATION

- A. Install nonwoven geotextile beneath riprap and bedding where indicated on the Drawings.*
- B. Install geotextile smooth and free of wrinkles. Overlap seams and secure edges in accordance with Section 33 42 00 and the geotextile manufacturer's written instructions.*
- C. Repair or replace geotextile damaged during installation before covering.*

3.04 AGGREGATE BEDDING

- A. Place aggregate bedding over prepared subgrade or geotextile to the thickness indicated on the Drawings. Where no thickness is indicated, provide a minimum 4-inch compacted thickness.*
- B. Level and compact bedding sufficiently to provide uniform support for riprap without damaging the geotextile.*

3.05 RIPRAP INSTALLATION

- A. Place riprap to the limits, elevations, and configurations indicated on the Drawings.*
- B. Place stone by hand or mechanical methods that produce a dense, stable, interlocked mass. Arrange stones to minimize continuous open voids and prevent rocking or displacement.*
- C. Do not dump stone from a height that damages geotextile, bedding, pipe, flared end sections, or adjacent work.*
- D. Fit riprap neatly around flared end sections and other drainage structures. Do not obstruct pipe openings or designed drainage flow paths.*
- E. Finished riprap surface shall be stable, reasonably uniform, and free of loose or projecting stones that are not securely seated.*
- F. Do not grout or mortar riprap unless specifically indicated on the Drawings.*

3.06 FIELD ADJUSTMENT AND PROTECTION

- A. Replace displaced or unstable stone and repair damaged bedding or geotextile before acceptance.*
- B. Protect completed riprap from disturbance by subsequent construction operations. Restore damaged areas to specified condition.*

END OF SECTION 313700

SECTION 334623
MODULAR BURIED STORMWATER STORAGE UNITS
(ADDENDUM 1 - 9/17/2026)

PART 1 - GENERAL

1.01 REFERENCE STANDARDS

- A. ASTM C857 - Standard Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures; 2019.
- B. ASTM C858 - Standard Specification for Underground Precast Concrete Utility Structures; 2019.
- C. ASTM C891 - Standard Practice for Installation of Underground Precast Concrete Utility Structures; 2020.
- D. ASTM C990 - Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants; 2009 (Reapproved 2019).

1.02 SUMMARY

- A. Section Includes: Furnishing and installing a complete underground modular stormwater detention, retention, and storage system, including modular storage units, foundations or bedding, geosynthetics, liners where indicated, pipe connections, inspection and maintenance access, structural backfill, and accessories required for a complete installation.
- B. Work includes excavation and base preparation required for the system, coordinated with the Drawings and recommendations of the Civil Engineer.
- C. Related Requirements:
 - 1. Section 31 00 00 - Earthwork.
 - 2. Section 31 23 00 - Excavation and Fill.
 - 3. Section 03 30 00 - Cast-in-Place Concrete, where concrete foundations are required by the selected system.
 - 4. Section 03 40 00 - Precast Concrete, where applicable to the selected system.
 - 5. Section 32 92 23 - Sodding

1.03 REFERENCE STANDARDS

- A. General: Comply with the latest adopted edition of referenced standards and requirements of authorities having jurisdiction.
- B. ASTM C857 - Standard Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures, where applicable.
- C. ASTM C858 - Standard Specification for Underground Precast Concrete Utility Structures, where applicable.
- D. ASTM C891 - Standard Practice for Installation of Underground Precast Concrete Utility Structures, where applicable.
- E. ASTM C990 - Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants, where applicable.
- F. Applicable ASTM test methods for geotextile physical and hydraulic properties.

1.04 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Provide system design by the storage system manufacturer or by a professional engineer experienced in buried stormwater storage systems and licensed in the jurisdiction of the Project.
- B. Hydraulic Storage Capacity: Provide net usable storage volume not less than the volume indicated on the Drawings. Account for the actual internal geometry of modules, columns, walls, aggregate, pipe penetrations, and other displacement within the storage volume.

- C. System Configuration: Fit the system within the horizontal and vertical limits indicated on the Drawings while maintaining required inlet and outlet pipe sizes and inverts, minimum cover, adjacent utility clearances, and finished grades.
- D. Structural Design: Design the complete system for applicable dead loads, earth pressures, hydrostatic pressures, groundwater and buoyancy conditions, live loads, vehicular loads where applicable, construction loads, and other loads indicated on the Drawings.
- E. Traffic Loading: Where the system is located below vehicular pavement or may be subject to vehicular loading, design for AASHTO H-20/HS-20 loading or the loading indicated on the Drawings, whichever is more stringent.
- F. Service Life: Provide a system designed for a minimum 50-year service life under project loading and environmental conditions. For polymeric geocellular systems, account for long-term creep and reduction factors using recognized long-term testing procedures.
- G. Maintenance Access: Provide access suitable for inspection, sediment monitoring, remote CCTV equipment, and cleaning or jetting equipment. Provide internal channels, access openings, ports, or equivalent manufacturer-approved means that allow practical inspection and maintenance of the system.
- H. Hydraulic Connectivity: Configure modules so stormwater can move through the storage system without isolated storage zones and with no material restriction at inlet and outlet connections.
- I. Detention or Retention: Where watertight storage is indicated, provide a complete liner or sealed enclosure compatible with the selected system and project conditions.
- J. Infiltration: Where infiltration is indicated, provide a permeable enclosure and system configuration compatible with the infiltration rates and soil conditions indicated on the Drawings and geotechnical information.
- K. Alternative System Coordination: Selection of a system other than the Basis-of-Design shall not reduce required storage volume, alter approved discharge criteria, reduce structural performance, or conflict with adjacent utilities, pavement, planting, structures, or other site improvements.

1.05 ACTION SUBMITTALS

- A. Product Data: Submit manufacturer product data for modular storage units, geosynthetics, liners, access components, connectors, and accessories. Include material properties, dimensions, storage characteristics, load ratings, minimum and maximum cover, and installation limitations.
- B. Shop Drawings: Submit system-specific shop drawings showing:
 - 1. Plan layout, system footprint, overall dimensions, module arrangement, and limits of excavation.
 - 2. System top and bottom elevations, foundation or bedding elevations, required cover, and layer configuration.
 - 3. Inlet, outlet, overflow, underdrain, and other pipe sizes, elevations, and connection details.
 - 4. Inspection ports, access structures, cleanouts, maintenance openings, and internal maintenance pathways.
 - 5. Geotextiles, geomembranes, liners, protection layers, seams, pipe boots, joint seals, and terminations, as applicable.
 - 6. Foundation, bedding, side backfill, top backfill, and compaction requirements.
 - 7. Temporary protection and construction loading restrictions.
- C. Delegated Design Submittal: Submit structural design calculations and drawings signed and sealed by the delegated design professional. Clearly state design loads, soil parameters, groundwater assumptions, allowable cover range, and factors of safety.

- D. Equivalent Product Submittal: For products other than the Basis-of-Design, submit a comparison demonstrating compliance with every performance requirement of this Section and the Drawings.

1.06 INFORMATIONAL SUBMITTALS

- A. Manufacturer qualifications and installer experience.
- B. Independent test reports supporting structural capacity and long-term performance of polymeric systems, where applicable.
- C. Manufacturer installation instructions.
- D. Manufacturer written confirmation that the proposed system configuration is suitable for project loading, cover, groundwater, and installation conditions.
- E. Field review reports by manufacturer representative when site review is requested.

1.07 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit manufacturer inspection, cleaning, sediment removal, access, and maintenance procedures.
- B. Record Drawings: Provide final system layout, elevations, access locations, and deviations from approved shop drawings.
- C. Warranty: Submit manufacturer standard written warranty for the complete storage system.

1.08 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer shall have documented experience producing modular underground stormwater storage systems of similar size, loading, and application.
- B. Installer Qualifications: Installer shall be experienced with the selected system and shall install the system in accordance with manufacturer requirements.
- C. Precast Production: Where precast concrete modules are used, manufacture units in a plant certified by NPCA, PCI, or another nationally recognized precast certification program.
- D. Manufacturer Representative: Make a qualified manufacturer representative available for preinstallation coordination and site review when requested by Owner or Engineer.

1.09 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer packaging or in a manner that prevents damage and allows product identification.
- B. Protect modular units, geosynthetics, liners, and accessories from damage, contamination, excessive ultraviolet exposure where applicable, and deformation during storage and handling.
- C. Use lifting equipment and procedures recommended by the manufacturer. Do not use damaged components.

1.10 PROJECT CONDITIONS

- A. Coordinate installation with grading, excavation, storm sewer, utilities, erosion control, paving, planting, and other adjacent Work.
- B. Do not impose construction traffic or loads over the installed system that exceed the manufacturer-approved loading for the actual stage of installation and cover depth.
- C. Protect completed installation from construction traffic and damage until final cover and surface improvements are complete.

1.11 PREINSTALLATION MEETING

- A. Conduct a preinstallation meeting before excavation for the system. Include the Contractor, excavation contractor, system installer, Civil Engineer, delegated design professional, and manufacturer representative.

- B. Review excavation support, groundwater conditions, subgrade acceptance, foundation or bedding, system layout, pipe connections, geosynthetics, backfill sequence, compaction methods, equipment restrictions, access provisions, and protection of completed Work.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Basis-of-Design Product: ACO StormBrixx ~~900SD and 300SD~~ 600HD by ACO, Inc. (ADD 1)
- B. Subject to compliance with requirements, provide the Basis-of-Design product or one of the following Approved Equal products:
 - 1. StormTrap, LLC: SingleTrap or DoubleTrap modular precast concrete stormwater storage system, as appropriate for project conditions.
 - 2. GreenBlue Urban: RST Modular Stormwater Management System, including an ArborSystem stormwater storage configuration where specifically engineered and approved by GreenBlue Urban for the Project.
 - 3. Approved equal meeting the performance and submittal requirements of this Section.
- C. Alternate Product Responsibility: Contractor is responsible for engineering, detailing, coordination, and costs associated with use of an alternate system, including changes to excavation, foundation, geosynthetics, utility coordination, and connections. Alternate products shall not require a change in Contract Sum or Contract Time solely due to product selection.

2.02 MODULAR STORMWATER STORAGE SYSTEM

- A. Description: Engineered underground modular system designed to provide stormwater detention, retention, storage, infiltration, or a combination of these functions as indicated on the Drawings.
- B. System Construction: Modular system may consist of polymeric geocellular units, precast reinforced concrete modules, or other approved modular construction capable of meeting this Section.
- C. System Size and Storage: As indicated on the Drawings and as required to provide not less than the specified net usable storage volume.
- D. Module Arrangement: Provide a stable, interlocked, restrained, jointed, or otherwise manufacturer-approved assembly capable of maintaining alignment and structural integrity during installation, backfilling, and service.
- E. Internal Configuration: Provide open flow paths or interconnected voids that allow distribution of water throughout the storage volume and practical inspection and maintenance.
- F. Material Durability: Materials shall be resistant to normal constituents of stormwater, soil exposure, biological activity, and environmental conditions expected at the Project.
- G. Pipe Connections: Provide manufacturer-approved connections sized for pipes indicated. Connections shall prevent migration of surrounding soil or backfill into the system and shall maintain the required hydraulic opening.
- H. Access: Provide access points, cleanouts, inspection ports, manholes, or other system-specific access components shown on approved shop drawings.

2.03 STRUCTURAL AND FOUNDATION COMPONENTS

- A. Foundations and Bedding: Provide aggregate bedding, concrete pad, structural slab, or other foundation system required by the selected manufacturer and delegated design for project soil and loading conditions.
- B. Precast Concrete Systems: Where used, provide reinforced precast concrete modules designed and manufactured for buried stormwater storage service. Concrete strength, reinforcement, joints, and cover shall comply with delegated design and applicable ASTM and ACI requirements.

- C. Polymeric Geocellular Systems: Where used, provide structural modules manufactured from durable thermoplastic material with published short-term and long-term structural properties suitable for the indicated cover and loading.
- D. Connectors and Restraints: Provide clips, shear connectors, dowels, joints, or other components required to maintain alignment and structural performance.

2.04 GEOSYNTHETICS AND LINERS

- A. General: Provide geotextiles, geomembranes, protection fabrics, and related accessories recommended by the system manufacturer and compatible with project soil and groundwater conditions.
- B. Separation Geotextile: Nonwoven geotextile suitable for separation and filtration, preventing migration of surrounding soil or backfill into open storage systems while permitting required drainage.
- C. Infiltration Systems: Provide permeable geotextile envelope with hydraulic properties appropriate for surrounding soil and design infiltration rate.
- D. Watertight Detention or Retention Systems: Where an impermeable enclosure is indicated, provide manufacturer-approved geomembrane or liner system complete with protection layers, welded or sealed seams, pipe boots, and penetrations required to form a continuous barrier.
- E. Liner Protection: Provide protection layers on each side of geomembranes where required by manufacturer or delegated design.

2.05 BACKFILL AND COVER MATERIALS

- A. Structural Fill: Clean, durable, compactable material free of debris, frozen material, organic matter, and sharp objects that could damage system components or geosynthetics.
- B. Side Backfill: Material and gradation recommended by the selected manufacturer and approved by the Civil Engineer or Geotechnical Engineer. Site soils may be used only where specifically approved for the selected system.
- C. Top Backfill and Cover: Materials and compaction as indicated on the Drawings and required by the selected manufacturer for the proposed surface condition and loading.

2.06 ACCESSORIES

- A. Provide all manufacturer-required access structures, adapters, connectors, end panels, top covers, joint materials, seals, pipe boots, fasteners, and appurtenances necessary for a complete installation.
- B. Materials in contact with geomembranes or polymeric modules shall be smooth and free of projections that could puncture or damage system components.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine excavation, subgrade, groundwater conditions, soil bearing conditions, and dimensions before installation. Notify Engineer of conditions that do not comply with approved shop drawings or manufacturer requirements.
- B. Verify subgrade is smooth, stable, compacted, and at the required elevation and slope.
- C. Verify that the proposed installation does not conflict with existing or proposed structures, utilities, foundations, trees, piping, or other underground improvements.
- D. Do not begin installation until unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Excavate and prepare subgrade in accordance with the Drawings and selected system requirements.
- B. Compact subgrade to the density indicated on the Drawings. Where no project-specific requirement is indicated, obtain approval of the prepared subgrade before system installation.

- C. Install aggregate bedding, concrete foundation, structural slab, or other foundation required by approved shop drawings. Establish a level and uniform bearing surface.
- D. Control groundwater and surface water as required to maintain stable excavation and prevent flotation, contamination, erosion, or disturbance of the prepared foundation.
- E. Lay out system footprint and verify line, grade, squareness, and required clearances before placement of modules.

3.03 INSTALLATION

- A. Install modular stormwater storage system in strict accordance with approved shop drawings and manufacturer written instructions.
- B. Install units to proper line, grade, orientation, and elevation. Maintain required alignment and joint spacing for the selected system.
- C. Do not field cut, drill, modify, or repair structural modules unless specifically permitted in writing by the manufacturer and delegated design professional.
- D. Install pipe connections, access structures, inspection ports, cleanouts, and internal maintenance features at locations indicated on approved shop drawings.
- E. Install geotextiles and geomembranes without tears, punctures, folds, open seams, or contamination. Repair damage in accordance with manufacturer requirements before backfilling.
- F. For watertight systems, complete and test liner seams and penetrations as recommended by liner manufacturer before covering concealed work.
- G. Do not place damaged modules or components. Replace damaged materials as directed by manufacturer.

3.04 BACKFILLING

- A. Place and compact backfill in lifts and using equipment recommended by the system manufacturer.
- B. Place side backfill uniformly around the system to avoid unbalanced lateral loading, displacement, or damage.
- C. Do not operate compaction or construction equipment directly over the system until the minimum manufacturer-required cover for that equipment has been placed and compacted.
- D. Prevent damage to geotextiles, geomembranes, joints, pipe connections, access components, and storage modules during backfilling.
- E. Maintain required cover and grades through completion of adjacent site work.

3.05 FIELD QUALITY CONTROL

- A. Manufacturer Field Review: When requested, manufacturer representative shall review initial assembly, geosynthetic installation, pipe connections, access provisions, and backfill procedures. Correct deficiencies before continuing Work.
- B. Before final cover, verify system dimensions, elevations, access locations, inlet and outlet connections, and visible condition of components against approved shop drawings.
- C. Provide testing or inspection of geomembrane seams where required by the liner manufacturer, delegated design, or authorities having jurisdiction.

3.06 CLEANING AND PROTECTION

- A. Remove construction debris, sediment, soil, and foreign material from the system before placing it into service.
- B. Protect inlet piping and storage system from sediment-laden construction runoff until contributing drainage areas are stabilized.
- C. Protect installed system from construction traffic, excessive loading, and damage until final surface construction is complete.

3.07 MAINTENANCE REQUIREMENTS

- A. Provide a system that can be inspected and maintained using the access points and procedures identified in the approved Operation and Maintenance Data.
- B. Locate cleanouts or maintenance access at pipe connection points and other locations indicated on the Drawings or recommended by the selected manufacturer.
- C. Provide inspection ports at locations indicated on the Drawings and approved shop drawings.
- D. Initial Inspection: Inspect the system for sediment accumulation after the drainage system is placed into service and at least quarterly during the first year, unless the manufacturer recommends a more frequent interval.
- E. Ongoing Inspection: After the first year, inspect at least annually and after significant sediment-producing events, or at the frequency recommended by the manufacturer and Owner maintenance program.
- F. Remove sediment and debris when accumulation could reduce storage capacity, restrict conveyance, interfere with outlet controls, or impair maintenance access.

END OF SECTION 334623

55 E IRVING PARK RD
STREAMWOOD, IL 60107



DISCIPLINE DESIGNATORS		WORK TYPE DESIGNATIONS		SHEET TYPE DESIGNATIONS	
G	GENERAL	S	LAYOUT	0	GENERAL NOTES, (LEGENDS, ETC.)
H	HAZARDOUS MATERIALS	I	IRRIGATION	1	PLANS (HORIZONTAL VIEWS)
C	CIVIL	L	PLANTING	2	ELEVATIONS (VERTICAL VIEWS)
L	LANDSCAPE	S	LIGHTING	3	SECTIONS (SECTIONAL VIEWS)
S	STRUCTURAL	G	GRADING	4	LARGE-SCALE VIEWS (ENLARGEMENTS)
A	ARCHITECTURAL	D	DEMOLITION	5	DETAILS
I	INTERIOR	R	RELOCATION	6	SCHEDULES AND DIAGRAMS
Q	EQUIPMENT	F	FURNISHING	7	USER-DEFINED
P	FIRE PROTECTION	N	NOTE/INFORMATION	8	USER-DEFINED
F	FLOWING			9	3D REPRESENTATION (ISO, PHOTOS, ETC.)
M	MECHANICAL				
E	ELECTRICAL				
T	TELECOMMUNICATIONS				
X	OTHER DISCIPLINES				
Z	CONTRACTOR/PROJ DWG				

DRAWING SHEET INDEX		SITE STRUCTURAL SHEETS	
PAGE #	DRAWING SHEET TITLE	S-100	STRUCTURAL GENERAL NOTES
GENERAL			
GN000	COVER SHEET	S-200	STRUCTURAL FOUNDATION PLANS AND SECTIONS
GN001	NOTE & CODE REVIEW	S-201	LIGHT POLE FOUNDATION DETAILS
LANDSCAPE SHEETS		ARCHITECTURAL SHEETS	
LD100	SITE PREPARATION PLAN	A-100.1	SITE PLAN
LS100	HARDSCAPE PLAN	A-101.1	FLOOR PLAN - LEVEL 1
LP100	PLANTING PLAN	A-200.1	ELEVATIONS
LP101	PLANTING PLAN ENLARGEMENT - NORTH	A-201.1	ENLARGED PLAN - COMPOSITE DECKING INFILL
LP102	PLANTING PLAN ENLARGEMENT - SOUTH	A-300.1	RENDERING - FOR INFORMATION ONLY
LS300	SITE SECTIONS	A-301.1	RENDERING - FOR INFORMATION ONLY
LS301	SITE SECTIONS	A-401.1	DETAILS
LS302	SITE SECTIONS	AD-101.2	DEMOLITION PLAN - LEVEL 1
LS303	SITE SECTIONS	A-100.2	SITE PLAN
LS500	SITE DETAILS	A-101.2	FLOOR PLAN - LEVEL 1
LS501	PLANTING DETAILS	A-102.2	ROOF PLAN
CIVIL SHEETS		A-200.2	ELEVATIONS
C001	CIVIL GENERAL NOTES & MWRD ROUTING MAP	A-201.2	ENLARGED PODS @ TOP OF DECK
C100	EXISTING CONDITIONS PLAN	A-300.2	RENDERING - FOR INFORMATION ONLY
C200	EROSION AND SEDIMENT CONTROL PLAN	A-301.2	RENDERING - FOR INFORMATION ONLY
C300	SUGGESTED PHASING/DEWATERING PLAN	A-302.2	RENDERING - FOR INFORMATION ONLY
C400	GEOMETRY PLAN	A-303.2	RENDERING - FOR INFORMATION ONLY
C401	UTILITY PLAN AND PROFILE	A-401.2	DETAILS
C500	UTILITY PLAN	ARCHITECTURE STRUCTURAL SHEETS	
C600	GRADING PLAN	SB-001	STRUCTURAL NOTES
C700	CIVIL DETAILS	SB-101.1	STRUCTURAL FOUNDATION PLAN
C701	CIVIL DETAILS	SB-102.1	STRUCTURAL DECK FRAMING PLAN
C702	CIVIL DETAILS	SB-102.2	STRUCTURAL DECK FRAMING PLAN PHASE 2
C703	CIVIL DETAILS	SB-103.2	STRUCTURAL CANOPY ROOF FRAMING PLAN
C704	CIVIL DETAILS	SB-201.2	STRUCTURAL SECTIONS - CANOPY ROOF
C705	CIVIL DETAILS	SB-501.1	STRUCTURAL DETAILS - FOUNDATION
ELECTRICAL SHEETS		SB-502.1	STRUCTURAL DETAILS - STEEL
E000	ELECTRICAL GENERAL NOTES	SB-502.2	STRUCTURAL DETAILS - STEEL PHASE 2
E200	SITE LIGHTING PLAN PHASE 1	SB-503.2	STRUCTURAL DETAILS - CANOPY COLUMN I
E200	SITE LIGHTING PLAN PHASE 2	SB-504.2	STRUCTURAL DETAILS - CANOPY COLUMN II
E500	ELECTRICAL SCHEDULES PHASE 1	END OF INDEX	
E500	ELECTRICAL SCHEDULES PHASE 2		
E501	ELECTRICAL SECTIONS AND DETAILS		

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GN000

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SHEETS COVERED BY THIS SEAL:
"GN" AND "L"

- A. PLANT QUANTITIES IN PLANT SCHEDULE ARE FOR CONVENIENCE ONLY AND ARE NOT GUARANTEED. QUANTITIES ON PLAN WILL PREVAIL IF DISCREPANCIES OCCUR.
- B. THE CONTRACTOR SHALL SHOW PROOF OF PROCUREMENT, SOURCES, QUANTITIES AND VARIETIES FOR ALL SHRUBS, PERENNIALS, ORNAMENTAL GRASSES, AND ANNUALS WITHIN 21 DAYS FOLLOWING THE AWARD OF CONTRACT. TIMELY PROCUREMENT OF ALL PLANT MATERIAL IS ESSENTIAL TO THE SUCCESSFUL COMPLETION AND ACCEPTANCE OF THE PROJECT.
- C. SUBSTITUTIONS SHALL ONLY BE ALLOWED WHEN THE CONTRACTOR HAS EXHAUSTED ALL SOURCES FOR THE SPECIFIED MATERIAL, AND HAS PROVEN THAT THE SPECIFIED MATERIAL IS NOT AVAILABLE. THE CONTRACTOR MUST PROVIDE NAME AND VARIETY OF SUBSTITUTION TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO TAGGING OR PLANTING. SUBSTITUTIONS SHALL BE NEAREST EQUIVALENT SIZE OF VARIETY OF PLANT HAVING SAME ESSENTIAL CHARACTERISTICS.
- D. ALL PLANT MATERIAL SHALL BE NURSERY GROWN, SOUND, HEALTHY, VIGOROUS AND FREE FROM INSECTIONS, DISEASE AND INJURIES, WITH HABIT OF GROWTH THAT IS NORMAL FOR THE SPECIES. SUBSTITUTION SHALL BE EQUAL TO OR EXCEEDING SIZES INDICATED ON THE PLANT LIST. KIND, SIZE AND QUALITY OF PLANT MATERIAL SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1), MOST RECENT EDITION.
- E. STAKE OR PLACE ALL PLANTS IN FIELD AS INDICATED ON THE DRAWINGS OR AS DIRECTED BY THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO PLANTING.
- F. PLANT FIVE TREES FOR LANDSCAPE ARCHITECT APPROVAL PRIOR TO PLANTING THE REMAINING TREES ON SITE. DEMONSTRATION SHOULD ILLUSTRATE A COMPREHENSIVE UNDERSTANDING OF INFORMATION INCLUDED IN PLANTING DETAILS AND SPECIFICATIONS.
- G. PROVIDE A MINIMUM OF 48 HOURS NOTICE FOR APPROVAL OF PLANT LAYOUT AND SAMPLE TREE PLANTINGS.
- H. THE CONTRACTOR SHALL REPORT SUBSURFACE SOIL OR DRAINAGE PROBLEMS TO THE LANDSCAPE ARCHITECT PRIOR TO PLANTING.
- I. SEED ALL AREAS WITHIN CONTRACT LIMITS, NOT COVERED BY PAVING, BUILDINGS, OR PLANTING BEDS, UNLESS OTHERWISE NOTED.
- J. CONTRACTOR SHALL PLACE SHREDDED BARK MULCH AROUND ALL TREES AND IN ALL PLANTING BEDS TO A DEPTH OF 3" MIN.
- K. SEE SPECIFICATIONS FOR PLANT MAINTENANCE AND WARRANTY REQUIREMENTS.

1. PLANTING BED
2. SOD TURF
3. SEED MIX
4. WETLAND PLANTING
5. POND EDGE EROSION MIX
6. RIPARIAN FILTER PLANTING
7. NEW TREE, TYP.
8. AQUATIC PLANTING (UNDERWATER PLANTS)

PLANT SCHEDULE						
KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	SPACING/REMARK
AR2	6	<i>Aesculus x carnea</i>	CANDY TREES	6" cal.		
AX	3	<i>Amelanchier x grandiflora</i>	RED HORSECHESNUT	6" cal.		
BP	4	<i>Betula pendula</i>	APPLE SERVICEBERRY	6" cal.		
CC	22	<i>Cercis Canadensis</i>	EUROPEAN WHITE BIRCH	6" cal.		
LT	11	<i>Liriodendron tulipifera</i>	EASTERN REDBUD	6" cal.		
MA	10	<i>Magnolia acuminata</i>	TULIP POPLAR	6" cal.		
PW	4	<i>Prunus serotina</i>	CUMCUMBERTREE MAGNOLIA	6" cal.		
QA	1	<i>Quercus alba</i>	BLACK CHERRY	6" cal.		
			WHITE OAK	6" cal.		
			CONIFER TREES			
TO	10	<i>Thuja occidentalis</i>	AMERICAN ARBORVITAE	5' ht		
			SHRUBS			
CA	21	<i>Ceanothus americanus</i>	NEW JERSEY TEA	5 gal		60" o.c.
CR	70	<i>Cornus sericea</i>	RED TWIG DOGWOOD	5 gal		120" o.c.
HW	14	<i>Hydrangea arborescens</i>	SMOOTH HYDRANGEA	5 gal		72" o.c.
HQ	4	<i>Hydrangea quercifolia</i>	OKALEAF HYDRANGEA	5 gal		72" o.c.
HP	77	<i>Hydrangea paniculata 'Limeight'</i>	LIGHT HYDRANGEA	5 gal		72" o.c.
HI	74	<i>Hypericum kalmianum</i>	KALM ST. JOHNSWORT	5 gal		72" o.c.
JC	78	<i>Juniperus procumbens 'Kallay's Compact'</i>	KALLAY'S COMPACT JUNIPER	5 gal		72" o.c.
RM	49	<i>Rhinus mugo var. pumilio</i>	DWARF MOUNTAIN MUGO PINE	5 gal		120" o.c.
VA	56	<i>Viburnum trilobum</i>	AMERICAN CRANBERRYBUSH	3 gal		120" o.c.
			PERENNIALS			
AH	221	<i>Allium hollandicum</i>	ORNAMENTAL ONION	1 gal		6" o.c.
AL	77	<i>Amorpha canescens</i>	LEADPLANT	1 gal		36" o.c.
AS	235	<i>Acerus americanus</i>	SWEET FLAG	1 gal		36" o.c.
AT	102	<i>Asclepias tuberosa</i>	BUTTERFLY MILKWEED	1 gal		36" o.c.
AS2	1,633	<i>Alisma subcordatum</i>	AMERICAN WATER PLANTAIN	1 gal		12" o.c.
AF	26	<i>Amorpha fruticosa</i>	FALSE INDIGO	1 gal		72" o.c.
AM	69	<i>Aronia melanocarpa</i>	BLACK CHOKEBERRY	1 gal		60" o.c.
CA2	163	<i>Carex aquatilis</i>	WATER SEDGE	1 gal		48" o.c.
CH	433	<i>Carex hystericina</i>	PORCUPINE SEDGE	1 gal		24" o.c.
CV	330	<i>Carex vulpinoidea</i>	FOX SEDGE	1 gal		36" o.c.
ES	48	<i>Echinacea x 'Sensation Pink'</i>	SENSATION PINK CONEFLOWER	1 gal		36" o.c.
EO	347	<i>Eleocharis erythropoda</i>	BLOOD SPIKERUSH	1 gal		12" o.c.
EH	45	<i>Equisetum hyemale</i>	HORSETAIL	1 gal		72" o.c.
EJ	65	<i>Eupatorium maculatum</i>	JOE PEE WEED	1 gal		48" o.c.
HI	98	<i>Heuchera x 'Wild Rose'</i>	PURPLE WILD ROSE CORAL BELLS	1 gal		18" o.c.
HS	17	<i>Hosta sieboldiana 'Elegans'</i>	ELIGANS HOSTA	1 gal		48" o.c.
JE	263	<i>Juncus effusus</i>	SOFT RUSH	1 gal		24" o.c.
LC	44	<i>lobelia cardinalis</i>	CARDINAL FLOWER	1 gal		12" o.c.
PC2	540	<i>Pentstemon cordata</i>	CKEREL FLOWER	1 gal		24" o.c.
SL	302	<i>Sagittaria latifolia</i>	BROADLEAF ARROWHEAD	1 gal		36" o.c.
ST	101	<i>Sambucus pubens</i>	AMERICAN RED ELDER	1 gal		60" o.c.
SA	80	<i>Sparangium americanum</i>	BUR-REED	1 gal		36" o.c.
SE	607	<i>Sparangium eurycarpum</i>	COMMON BUR-REED	1 gal		24" o.c.
			GRASSES			
PA	19	<i>Pennisetum alopecuroides</i>	FOUNTAIN GRASS	1 gal		
CL	20	<i>Chasmanthium latifolium</i>	NORTHERN SEA OATS	1 gal		48" o.c.
			GROUNDCOVER			
472		<i>Ajuga reptans</i>	CARPET BUGLE	6" pots		
461		<i>Liriope spicata</i>	CREeping LILYTURF	6" pots		12" o.c.
24		<i>Phlox stolonifera</i>	CREeping PHLOX	6" pots		36" o.c.

	ALLIUM HOLLANDICUM (535.00 SF)		CAREX HYSTERICINA (1,835.00 SF)		JUNCUS EFFUSUS (1,457.00 SF)		SAMBUCUS PUBENS (3,289.00 SF)
	ARONIA MELANOCARPA (2,358.00 SF)		CAREX VULPINOIDEA (1,440.00 SF)		LOBELIA CARDINALIS (719.00 SF)		UNDERWATER PLANTING AREA (6,007.00 SF)
	ACORUS AMERICANUS (2,256.00 SF)		EQUISETUM HYEMALE (2,263.00 SF)		PONTERDERIA CORTADA (2,166.00 SF)		MOIST MEADOW - RAIN GARDEN SEED MIX (5,182.00 SF)
	ALISMA SUBCORDATUM (1,542.00 SF)		EUPATORIUM MACULATUM (1,542.00 SF)		SPARGANIUM AMERICANUM (895.00 SF)		SOD (38,699.00 SF)
	AMORPHA CANESCENS (337.00 SF)		ELEOCHARIS ERYTHROPODA (377.00 SF)		SPARGANIUM EURYCARPUM (2,482.00 SF)		NO MOW LAWN SEED MIX (21,654.00 SF)
	CAREX AQUATILIS (2,980.00 SF)		HEUCHERA 'WILD ROSE' (1,151.00 SF)		SAGITTARIA LATIFOLIA (2,899.00 SF)	REFER TO LP100 FOR TREE AND BUFFER PLANTING CALL OUTS AND SCHEDULE.	

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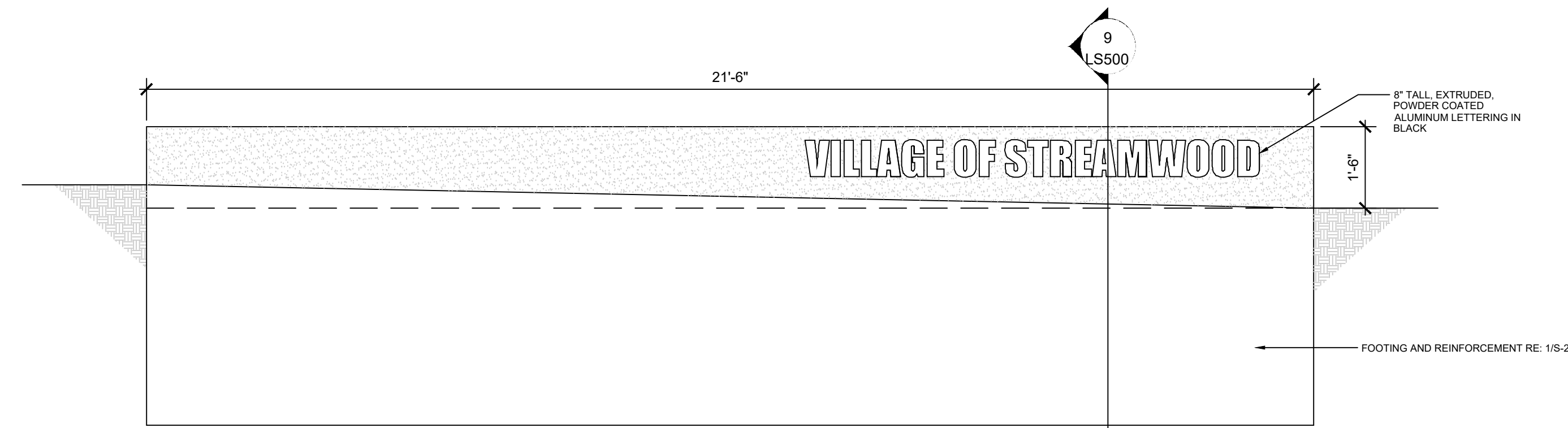
KOLLAR POND - PHASE 1
VILLAGE OF STREAMWOOD
55 E Irving Park Road
Streamwood, IL 60107

Project Number	242555
Issue	100% CD REVIEW
Date	07/31/2026

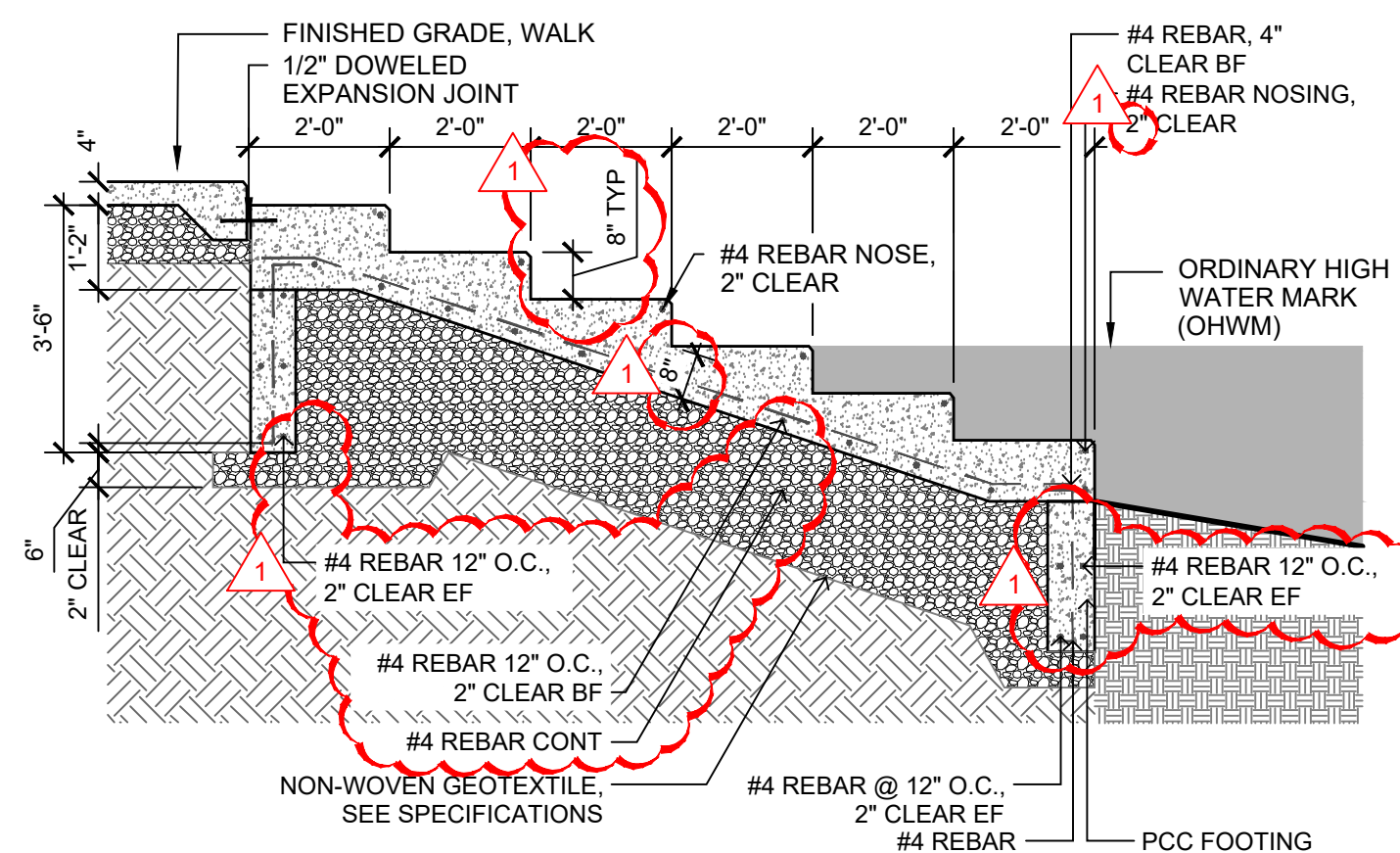
LP100

Project Number	24
Issue	100% CD REVIEW
Date	07/31/2012

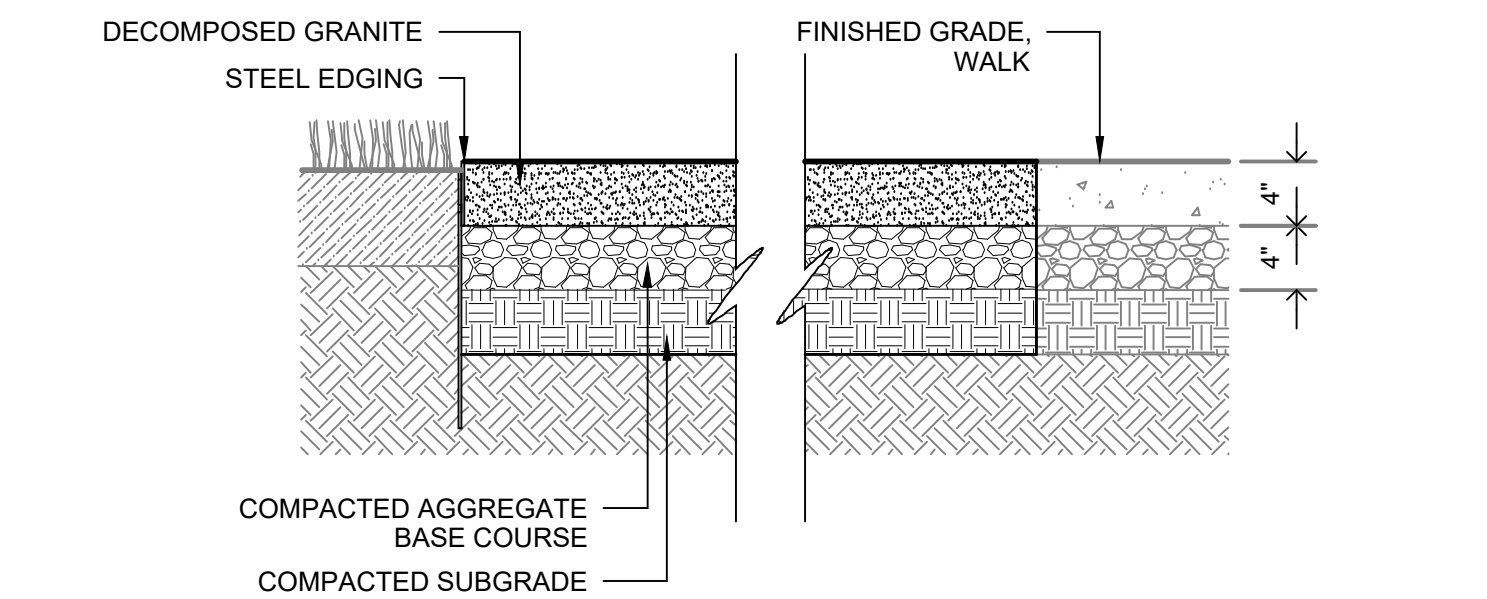
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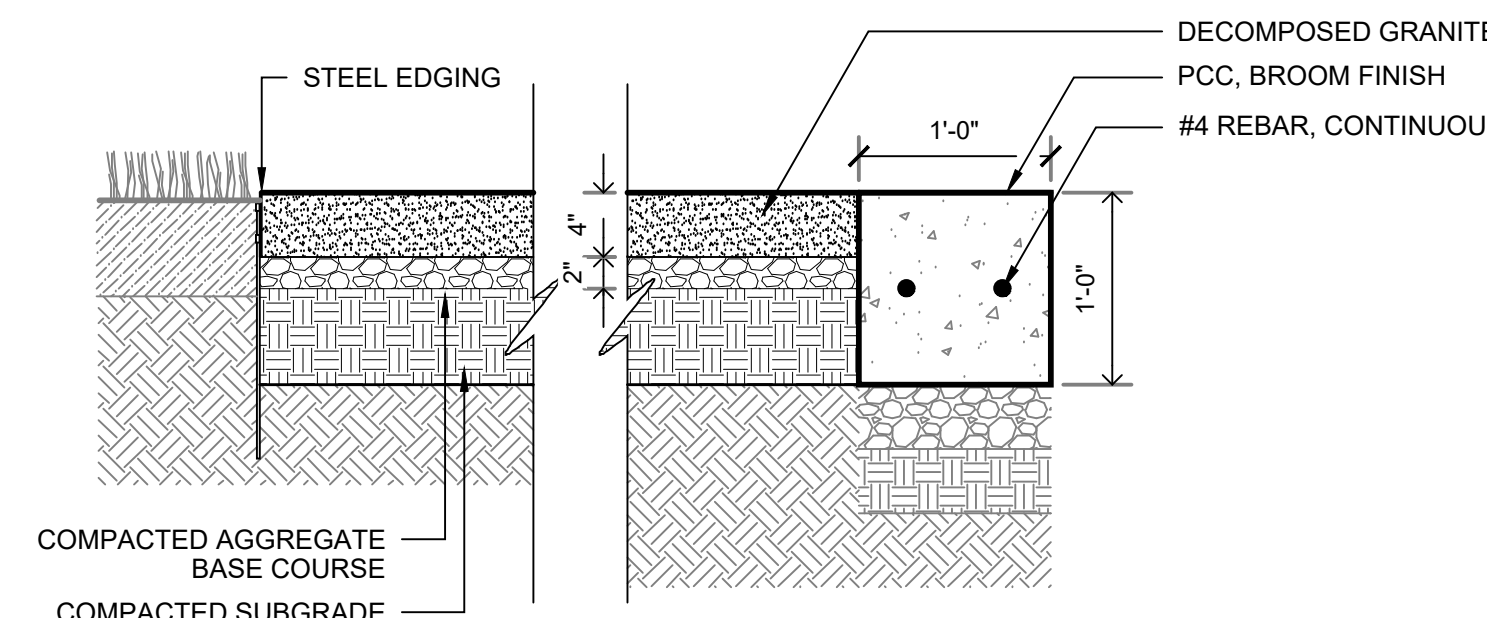
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LS500 MONUMENT SIGN SCALE: 1/2" = 1'-0"



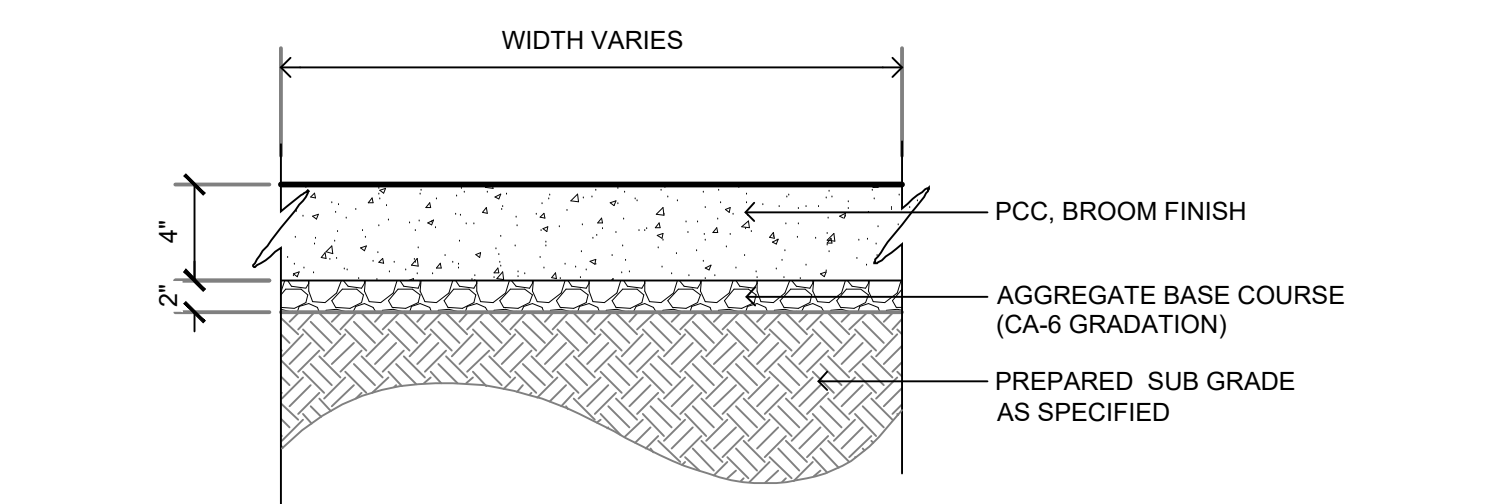
7
LS500 SECTION: CONCRETE TERRACED SEATING, TYP SCALE: 3/8" = 1'-0"



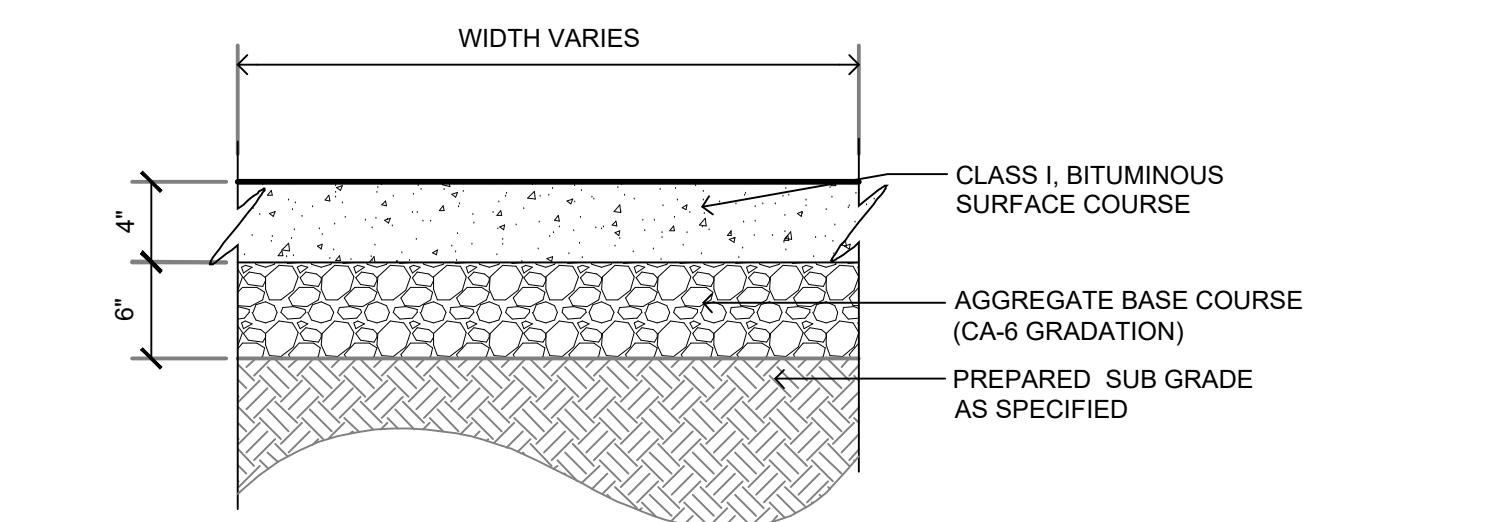
4
LS500 SECTION: STABILIZED DECOMPOSED GRANITE SCALE: 1" = 1'-0"



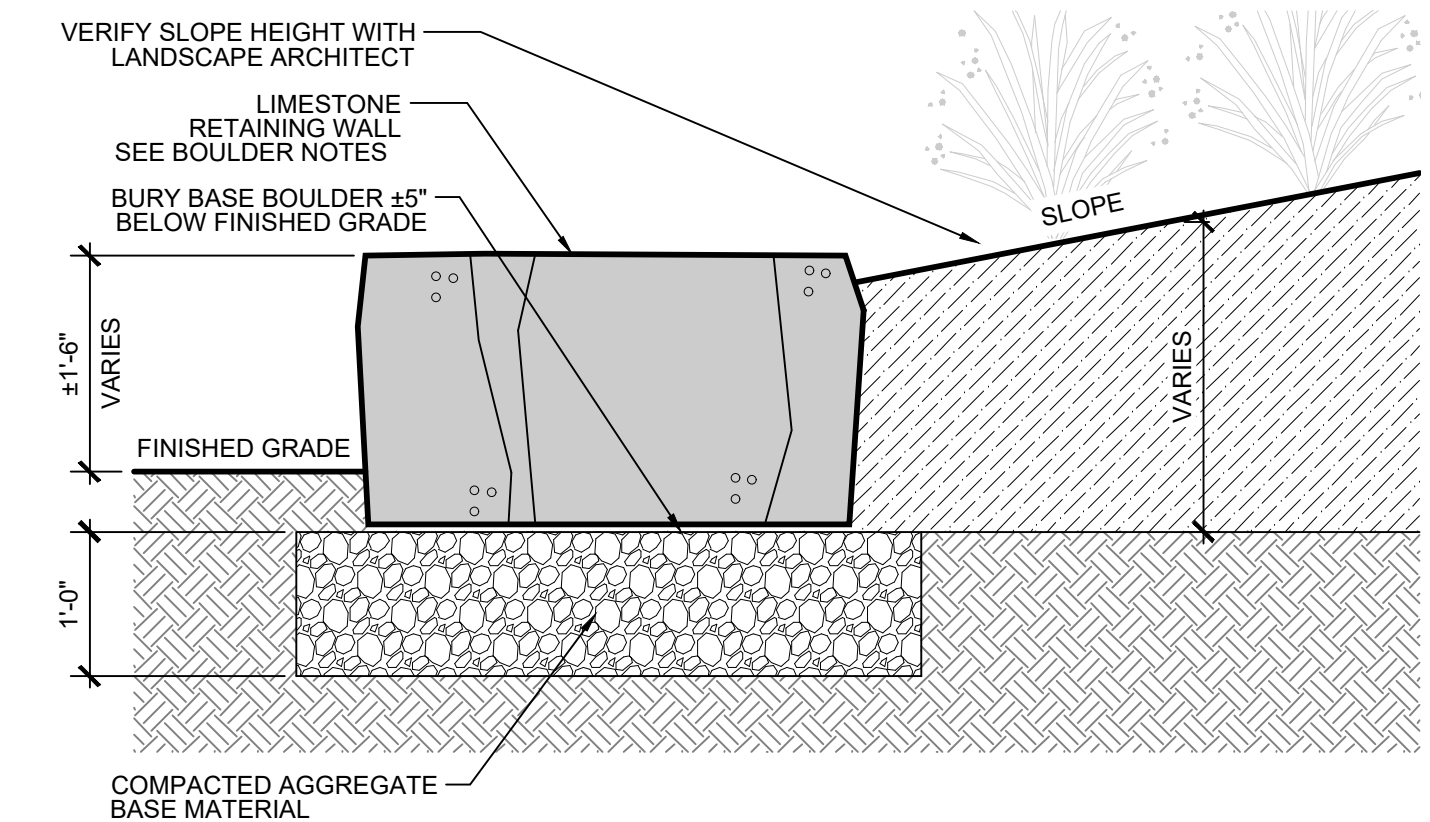
3
LS500 SECTION: PCC 12" WIDTH BAND SCALE: 1" = 1'



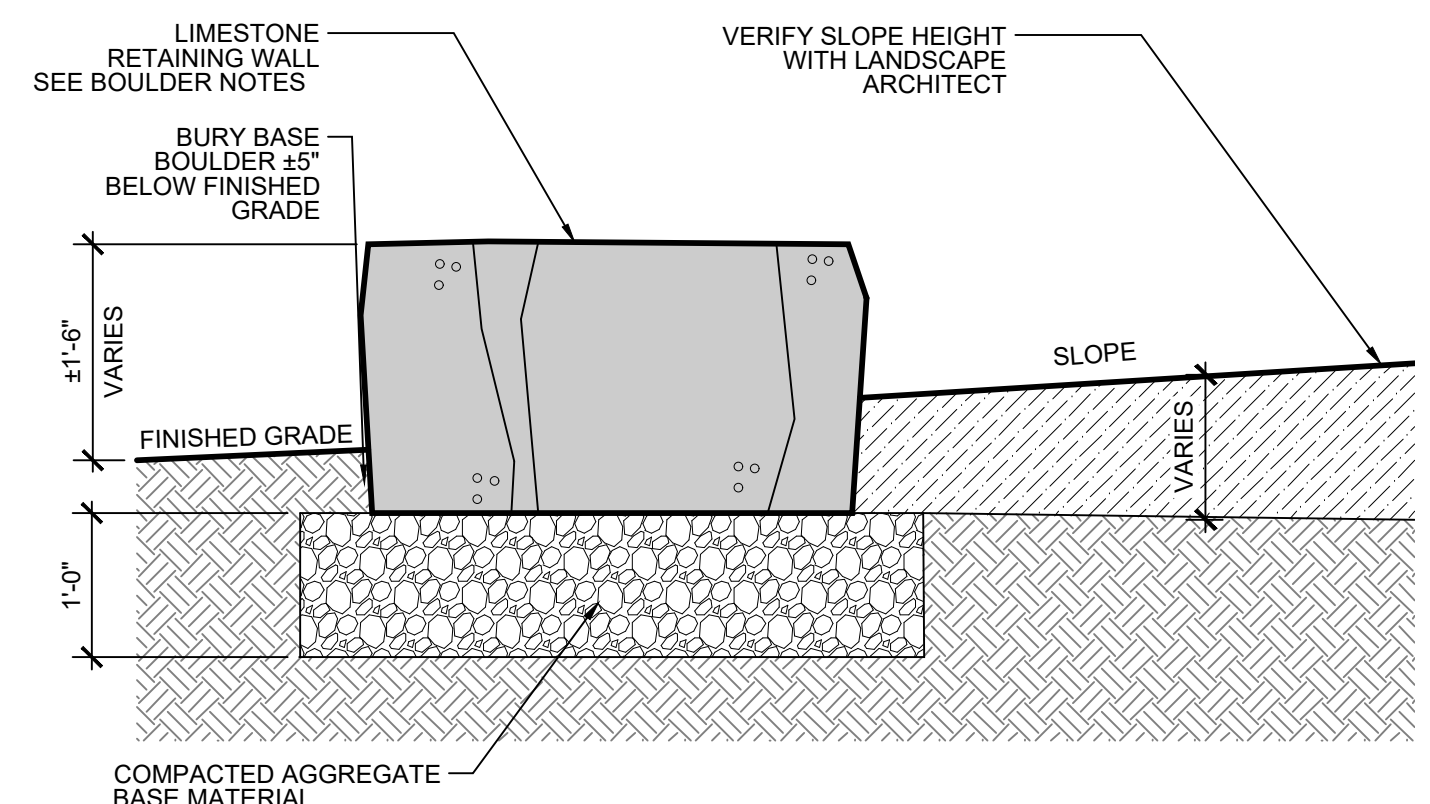
2 S500	PAVING TYPE 2 - PCC PATH, TYP.	SCALE: 1" = 1'-0"
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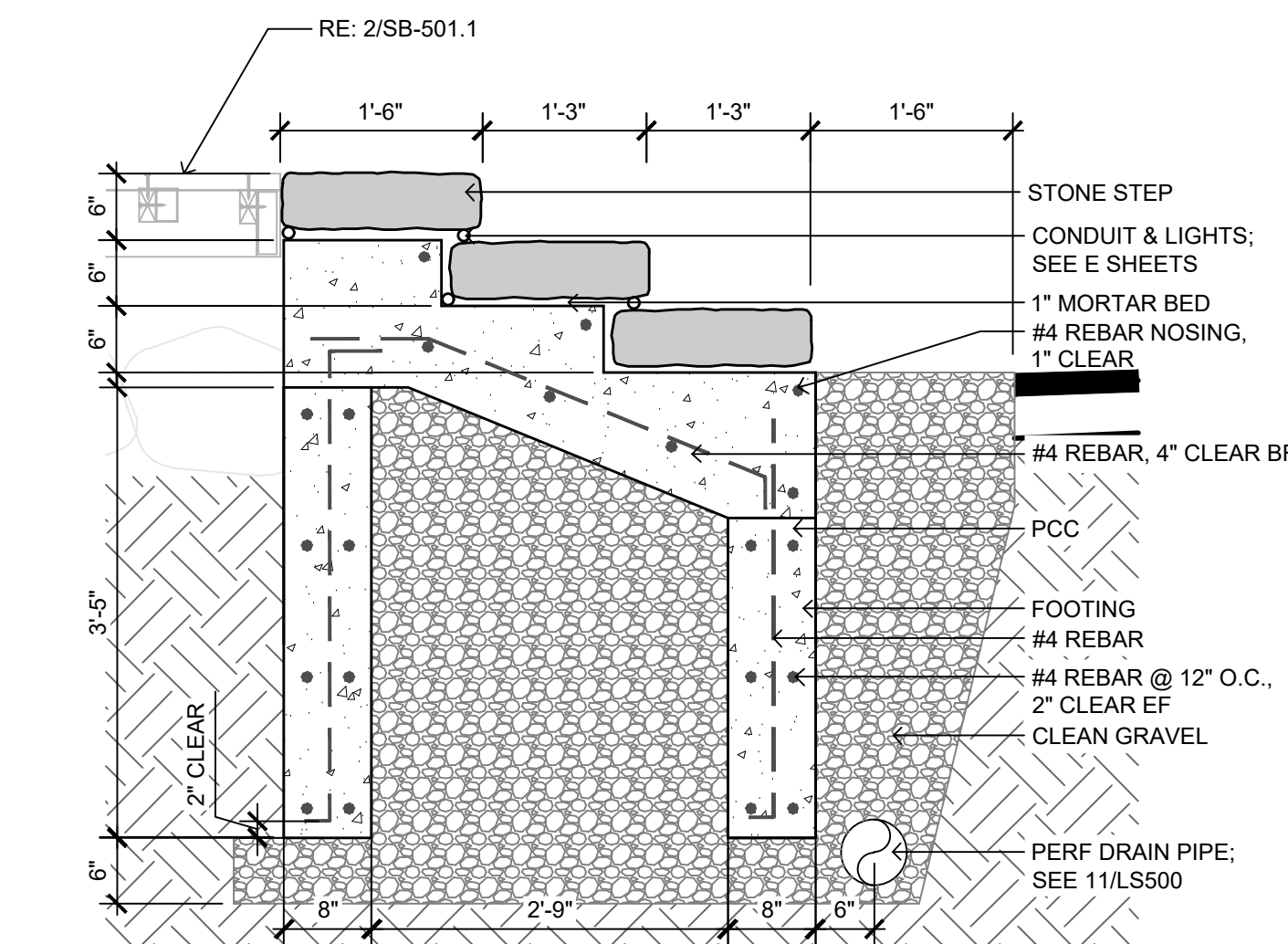
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LS500 PAVING TYPE 1 - ACC PATH, TYP. SCALE: 1" = 1'-0"



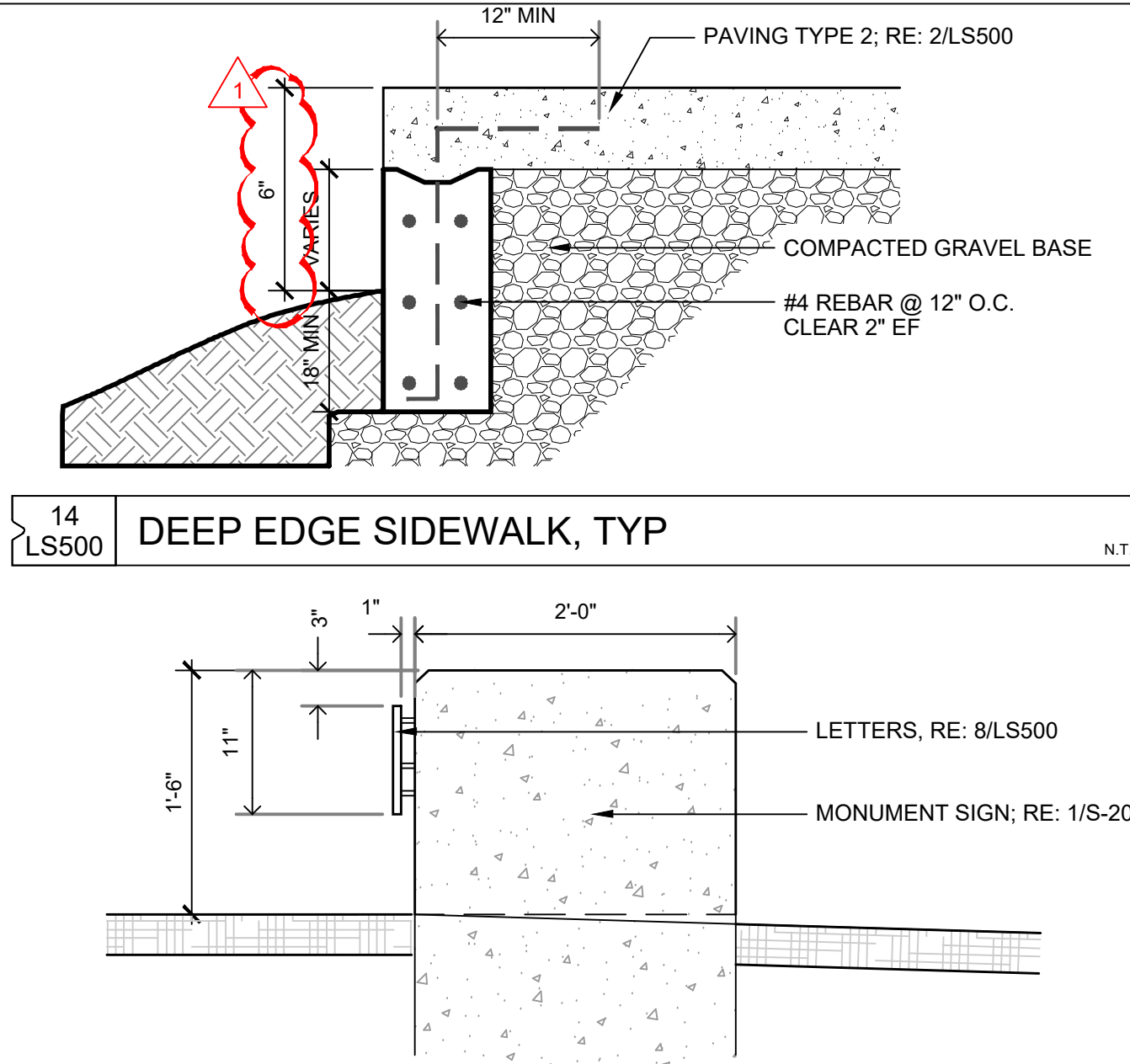
6 SECTION: BOULDER RETAINING WALL, TYP. SCALE: 3/4" = 1'-0"



5
S500 SECTION: BOULDER TERRACE SEATING, TYP. SCALE: 3/4" = 1'-0"



13
LS500 SECTION: STEPS AT DECK, TYP. SCALE: 3/4" = 1'-0"



9
LS500 SECTION: MONUMENT SIGN SCALE: 1" = 1'-0"

File Location: P:\2024\20240781.00 Drawings\Current Drawings\CADD Sheets\Do Not Use - C401 - Utility Plan and Profile / SAVE DATE: 9/14/2026 7:04 PM BY: jkoc / PLOT DATE: 9/14/2026 7:04 PM BY: Paul Koc

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IF PLANTED CORRECTLY.

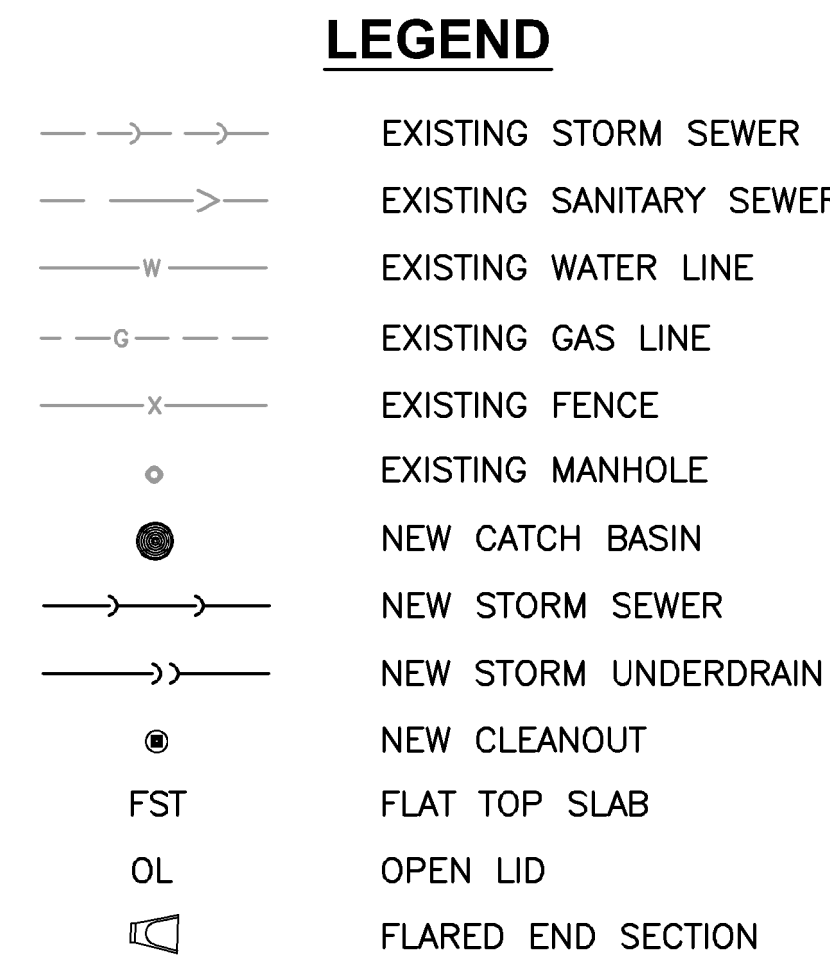
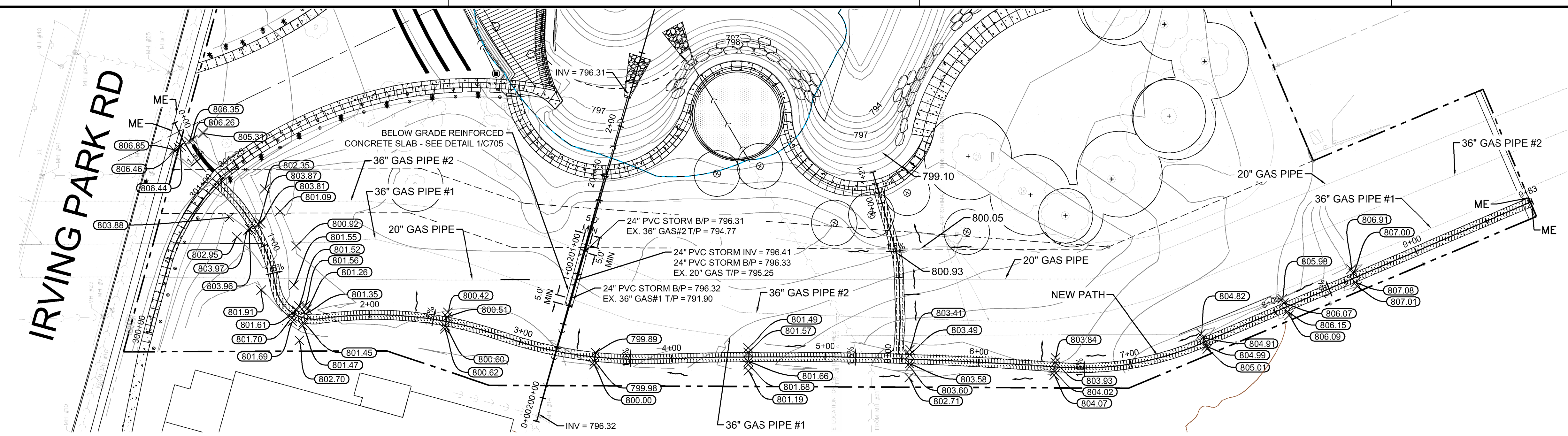
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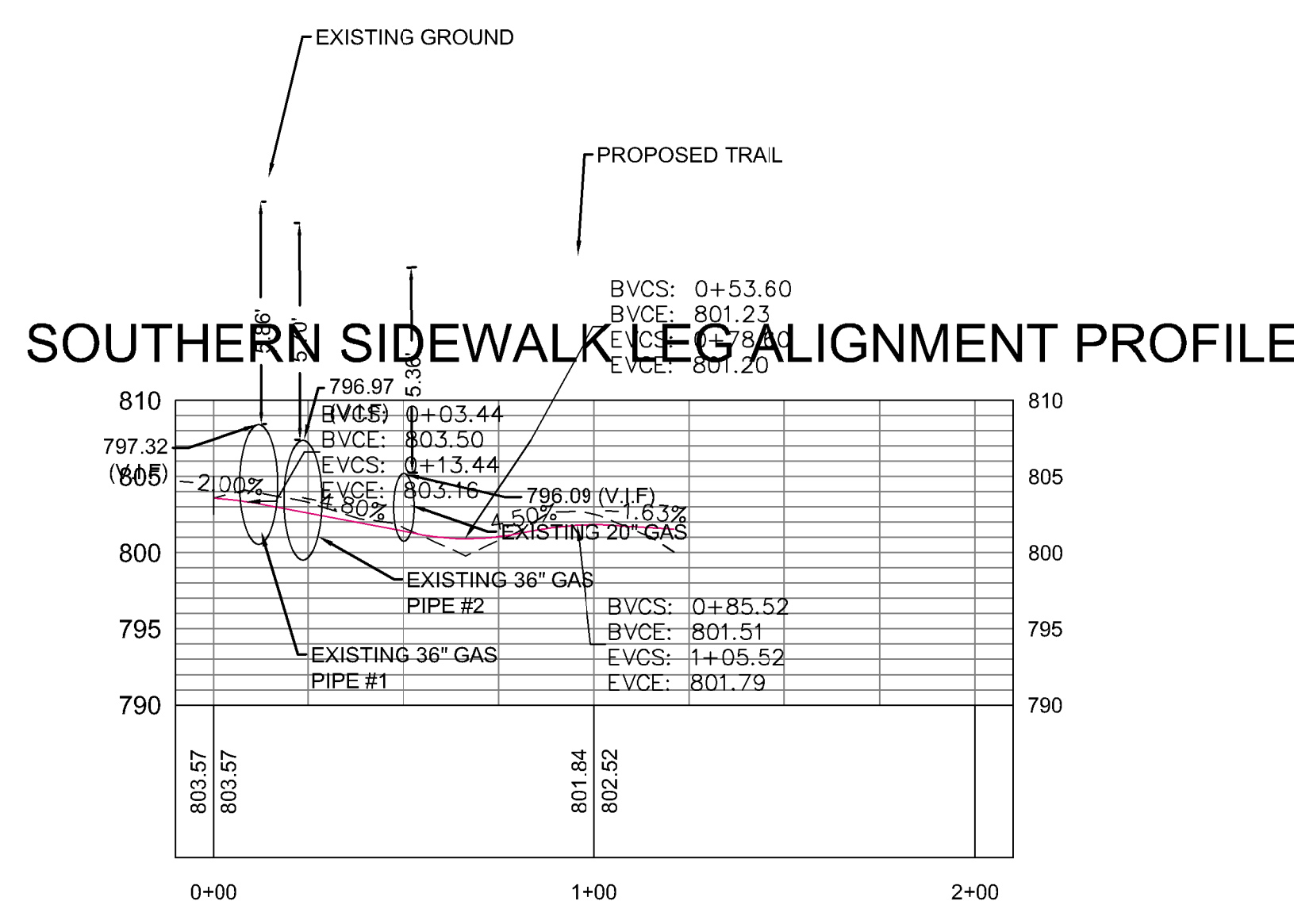
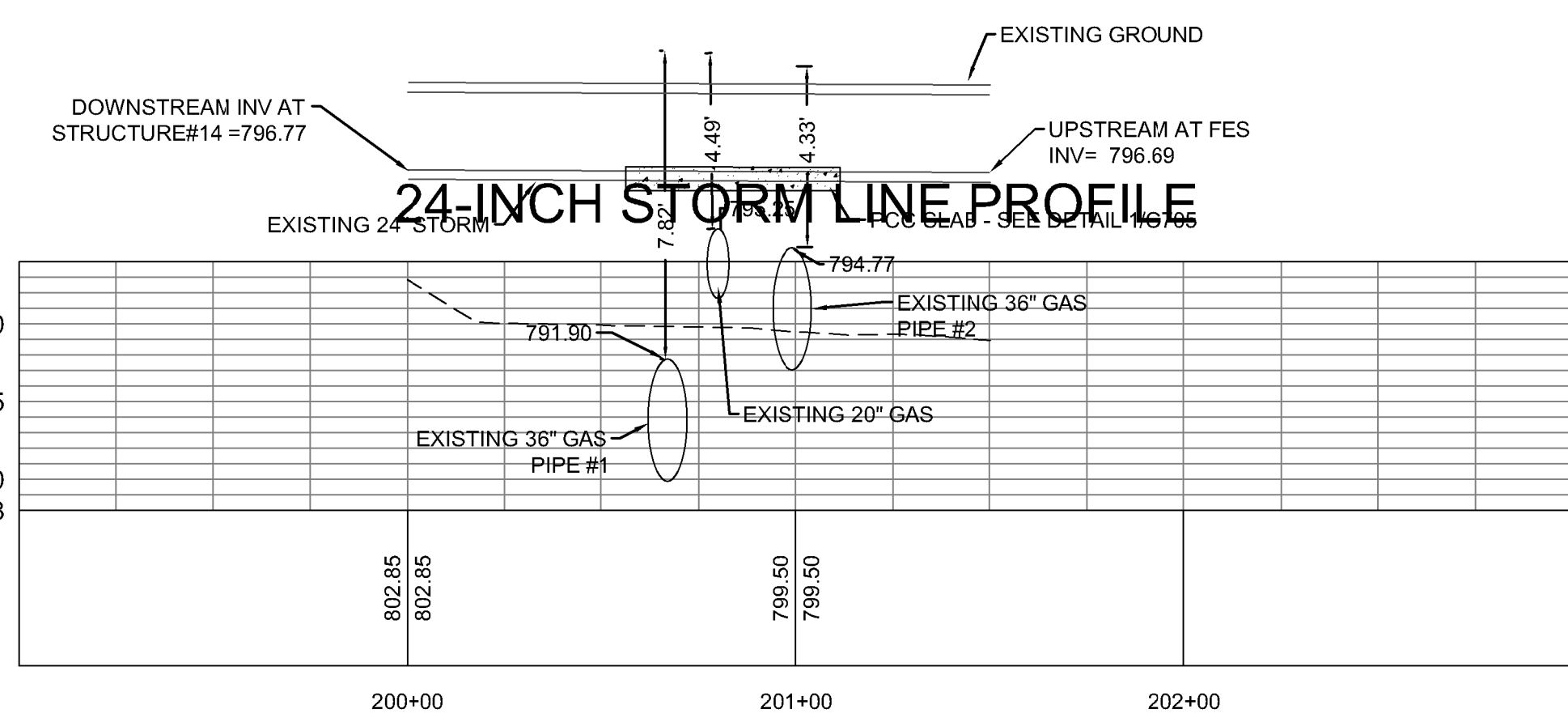
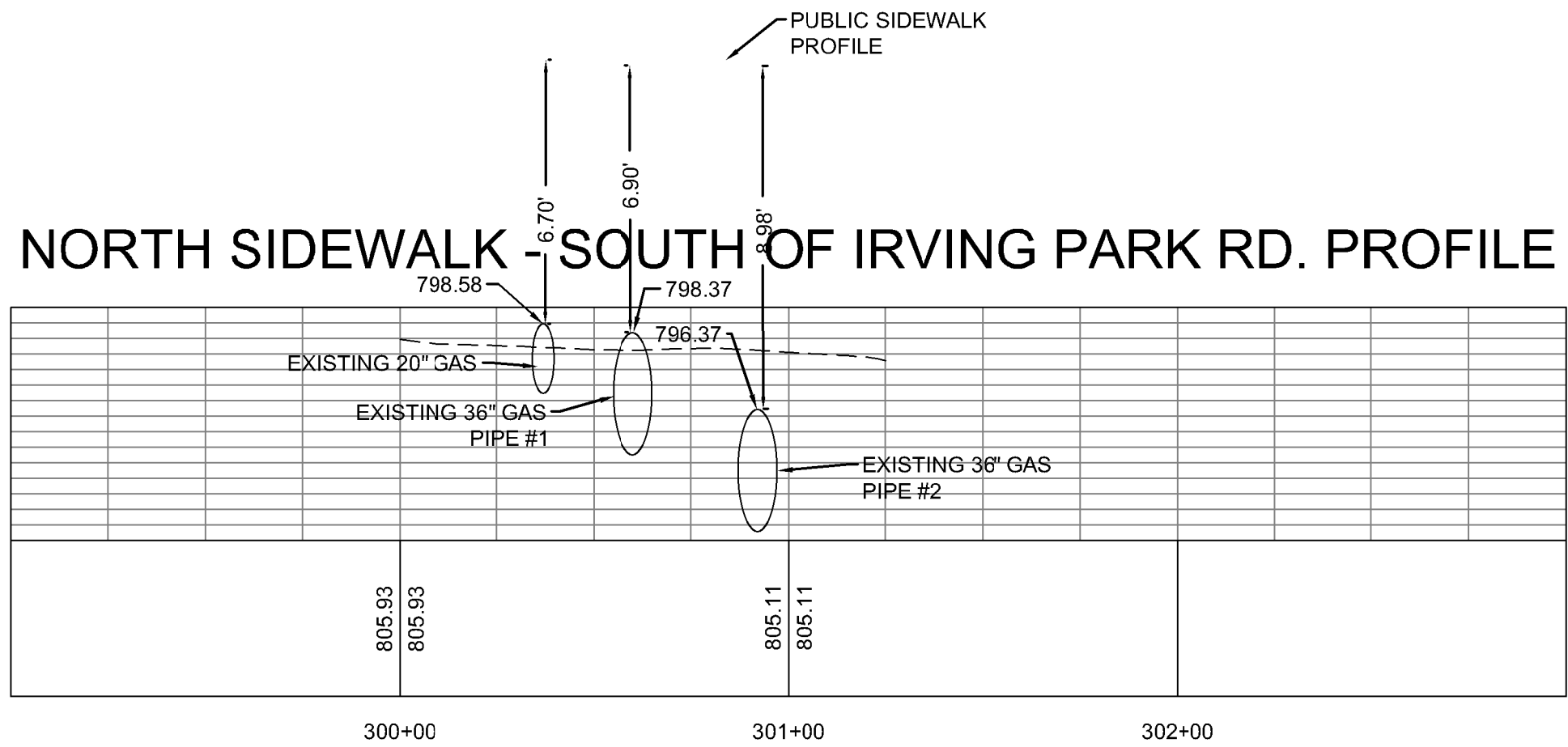
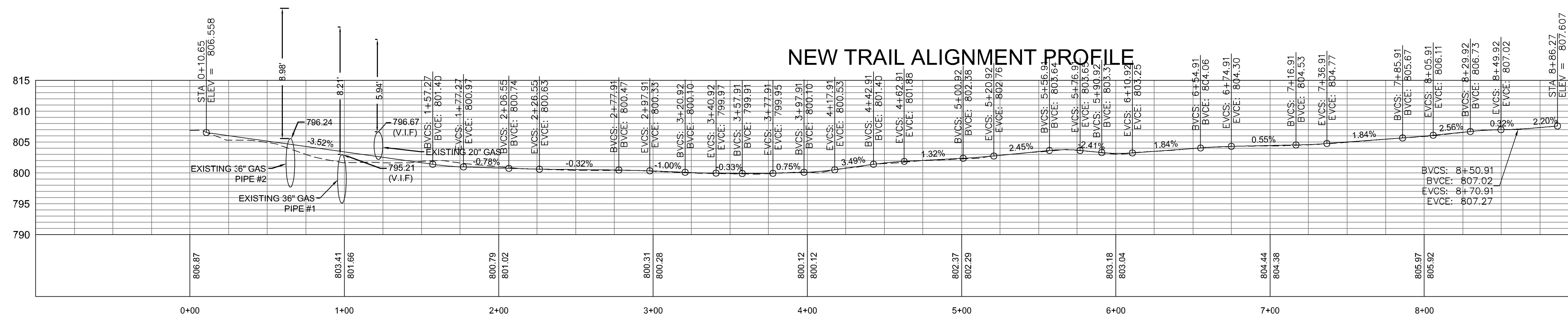
B

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THIS SHEET SHOWN ABOVE THE
EASITY ONE INCH LONG AT THIS
SCALE IS CORRECT. THIS SIZE



- GENERAL NOTES:**
- NO MECHANICAL EXCAVATION MAY OCCUR WITHIN 24 INCHES OF THE PIPELINE, ONLY SOFT DIGGING TECHNIQUES SUCH AS HYDROVAC, HAND DIGGING, ETC. THIS MUST BE CONFIRMED BY KINDER MORGAN FIELD DAMAGE PREVENTION TEAM AT THE TIME OF CONSTRUCTION.
 - TRAIL IS LOCATED ON A NATURAL GAS PIPELINE EASEMENT. CALL 815-695-0519 BEFORE ANY WORK STARTS WITHIN 25 FEET OF PIPELINES. A KINDER MORGAN REPRESENTATIVE MUST BE PRESENT BEFORE ANY EXCAVATION OR DISTURBANCE WITHIN 25 FEET OF THE GAS LINES.



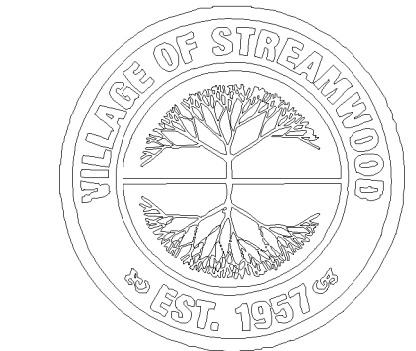
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CONFLUENCE, INC
307 N Michigan Avenue #601
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STRUCTURAL ENGINEER
ELECTRICAL ENGINEER
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(312) 606-0910

PAVILION ARCHITECT &
STRUCTURAL ENGINEER
GANNETT FLEMING, INC
700 N SANGAMON ST
CHICAGO, IL 60642
(312) 432-4180

Revision Schedule		
No.	Date	Description



KOLLAR POND - PHASE 1
VILLAGE OF STREAMWOOD
55 E Irving Park Road
Streamwood, IL 60107

Project Number	24255
Issue	100% CD SET
Date	07/31/2026

**PEDESTRIAN WALK
PLAN & PROFILE**

C-401

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