NOTICE OF AWARD

TO: Campanella & Sons, Inc.
39207 N. Magnetics Blvd.
Wadsworth, Illinois 60083
("Contractor")

FROM: Lake County Forest Preserve District
1899 West Winchester Road
Libertyville, Illinois 60048
("Owner")

ON THE 13th DAY OF February, 2018, Owner found to be most favorable to the interests of Owner, the Bidder's Proposal submitted by Contractor and dated on the 19th day of December, 2017, in which Contractor proposes to contract with Owner, in the form of the Contract included in the Bid Package to perform the Work (as defined in Article I of the Contract) and to do all other things required of the Contractor by the Contract and to provide, perform and complete all of the foregoing in a proper and workmanlike manner and in full compliance with, and as required by or pursuant to, the Contract.

OWNER ACCORDINGLY AWARDS CONTRACTOR, EFFECTIVE AS OF THE DATE OF DELIVERY OF THIS NOTICE OF AWARD, THE CONTRACT FOR SAID WORK FOR THE LUMP SUM, AS THE CASE MAY BE, SET FORTH IN THE BIDDER'S PROPOSAL.

A Closing will be held at **10:00 a.m. local time** on the 27th day of February, 2018, at the above-listed office of Owner at which time the Contract will be executed by Owner, provided that all Conditions Precedent to Closing have been satisfied. Contractor must have complied with all Conditions Precedent to Closing set forth in Section 16 of the General Instructions to Bidders included in the Bid Package, on or before the Closing Date.

The failure or refusal to comply with the Conditions Precedent to Closing on or before the Closing Date or to Close on the Closing Date shall result, at Owner's option, in the imposition of liquidated damages and the annulment of this award, or in Owner's exercise of any or all equitable remedies Owner may have, all as more specifically set forth in Sections 8, 16, and 17 of the General Instructions to Bidders.

DATED this 13th day of February, 2018

LAKE COUNTY FOREST PRESERVE DISTRICT

By: Christine Miller
Purchasing Manager

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CONTRACT BETWEEN
LAKE COUNTY FOREST PRESERVE DISTRICT
AND
CAMPANELLA & SONS, INC.
FOR THE
PUBLIC ACCESS IMPROVEMENTS
ETHEL'S WOODS FOREST PRESERVE
63910-18006-887

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CONTRACT BETWEEN
LAKE COUNTY FOREST PRESERVES
AND
CAMPANELLA & SONS, INC.
FOR THE
PUBLIC ACCESS IMPROVEMENTS
ETHEL'S WOODS FOREST PRESERVE
63910-18006-887

In consideration of the mutual promises set forth below, the Lake County Forest Preserve District, 1899 West Winchester Road, Libertyville, Illinois 60048, a public corporation ("Owner"), and Campanella & Sons, Inc., 39207 N. Magnetics Blvd., Wadsworth, Illinois 60083 a Delaware Corporation, ("Contractor"), make this Contract as of the 27th day of February, 2018, and hereby agree as follows:

ARTICLE 1
THE WORK

1.1 Performance of the Work

Contractor shall, at its sole cost and expense, provide perform, and complete all of the following, all of which is herein referred to as the "Work:"

A. Labor, Equipment, Materials, and Supplies. Provide, perform, and complete in the manner described and specified in this Contract, all necessary work, labor, services, transportation, equipment, materials, apparatus, machinery, tools, fuels, gas, electric, water, waste disposal, information, data, and other means and items necessary to accomplish the Project at the Work Site, both as defined in Attachment A, in accordance with the specifications attached hereto as Attachment B, the drawings identified in the list attached hereto as Attachment C.

B. Permits. Except as otherwise provided in Attachment A, procure and furnish all permits, licenses, and other governmental approvals and authorizations necessary in connection therewith.

C. Bonds and Insurance. Procure and furnish all Bonds and all certificates and policies of insurance specified in this Contract.

D. Taxes. Pay all applicable federal, state, and local taxes.

E. Miscellaneous. Do all other things required of Contractor by this Contract, including, without limitation, arranging for utility and other services needed for the Work and for testing, including the installation of temporary utility lines, wiring, switches, fixtures, hoses, connections, and meters, and providing sufficient sanitary conveniences and shelters to accommodate all workers and all personnel of Owner engaged in the Work.

F. Quality. Provide, perform, and complete all of the foregoing in a proper and workmanlike manner consistent with the highest standards of professional and construction practices and in full compliance with and as required by or pursuant to this Contract; and with the greatest economy, efficiency, and expedition consistent therewith with only new, undamaged, and first quality equipment, materials, and supplies.

1.2 Commencement and Completion Dates

Contractor shall commence the Work not later than the "Commencement Date" set forth on Attachment A and shall diligently and continuously prosecute the Work at such a rate as will allow the Work to be fully provided, performed, and completed in full compliance with this Contract not later than the "Completion Date" set forth in Attachment A. The Commencement Date, the rate of progress (as set forth in the "Work Schedule" to be prepared as set forth in Attachment A), and the Completion Date are referred to in this Contract as the "Contract Time."

1.3 Required Submittals

A. Submittals Required. Contractor shall submit to Owner all documents, data, and information specifically required to be submitted by Contractor under this Contract and shall, in addition, submit to Owner all such drawings, specifications, descriptive information, and engineering documents, data, and information as may be required, or as may be requested by Owner, to show the details of the Work, including a complete description of all equipment, materials, and supplies to be provided under this Contract ("Required Submittals"). Such details shall include, but shall not be limited to, design data, structural and operating features, principal dimensions, space required or provided, clearances required or provided, type and brand of finish, and all similar matters, for all components of the Work.

B. Number and Format. Contractor shall provide two (2) complete sets for each Required Submittal. All Required Submittals, except drawings, shall be prepared on white 8.5 inch by 11-inch paper. Two (2) blue line prints and one (1) sepia transparency of each drawing shall be provided. All drawings shall be clearly marked in the lower right hand corner with the names of Owner/Architect/Engineer and Contractor.

C. Time of Submission and Owner's Review. All Required Submittals shall be provided to Owner no later than the time, if any, specified in this Contract for their submission or, if no time for submission is specified, in sufficient time, in Owner's sole opinion, to permit Owner to review the same prior to the commencement of the part of the Work to which they relate and prior to the purchase of any equipment, materials or supplies that they describe. Owner shall have the right to require such corrections as may be necessary to make such submittals conform to this Contract. All such submittals shall, after final processing and review, with no exception noted by Owner, become a part of this Contract. No Work related to any submittal shall be performed by Contractor until Owner has completed review of such submittal with no exception noted. Owner's review and stamping of any Required Submittal shall be for the sole purpose of examining the general management, design, and details of the proposed Work, shall not relieve Contractor of the entire responsibility for the performance of the Work in full compliance with and as required by or pursuant to this Contract, and shall not be regarded as any assumption of risk or liability by Owner.

D. Responsibility for Delay. Contractor shall be responsible for any delay in the Work due to delay in providing Required Submittals conforming to this Contract.

1.4 Review and Interpretation of Contract Provisions

Contractor represents and warrants that it has carefully reviewed this Contract, including all of its Attachments, and the drawings identified in Attachment C, all of which are by this reference incorporated into and made a part of this Contract. Contractor shall, at no increase in the Contract Price, provide workmanship, equipment, materials, and supplies that fully conform to this Contract. Whenever any equipment, materials or supplies are specified or described in this Contract by using the name or other identifying feature of a proprietary product or the name or other identifying feature of a particular manufacturer or vendor, the specific item mentioned shall be understood as establishing the type, function, and quality desired. Other manufacturers' or vendors' products may be accepted, provided that the products proposed are equivalent in substance and function to those named as determined by Owner in its sole and absolute discretion.

Contractor shall promptly notify Owner of any discrepancy, error, omission, ambiguity, or conflict among any of the provisions of this Contract before proceeding with any Work affected thereby. If Contractor fails to give such notice to Owner, then the subsequent decision of Owner as to which provision of this Contract shall govern shall be final, and any corrective work required shall not entitle Contractor to any damages, to any compensation in excess of the Contract Price, or to any delay or extension of the Contract Time.

When the equipment, materials, or supplies furnished by Contractor cannot be installed as specified in this Contract, Contractor shall, without any increase in the Contract Price, make all modifications required to properly install the equipment, materials, or supplies. Any such modification shall be subject to the prior review and consent of Owner.

1.5 Conditions at the Work Site; Record Drawings

Contractor represents and warrants that it has had a sufficient opportunity to conduct a thorough investigation of the Work Site and the surrounding area and has completed such investigation to its satisfaction. Contractor shall have no claim for damages, for compensation in excess of the Contract Price, or for a delay or extension of the Contract Time based upon conditions found at or in the vicinity of the Work Site. When information pertaining to subsurface, underground or other concealed conditions, soils analysis, borings, test pits, utility locations or conditions, buried structures, condition of existing structures and other investigations is or has been provided by Owner, or is or has been otherwise made available to Contractor by Owner, such information is or has been provided or made available solely for the convenience of Contractor and is not part of this Contract. Owner assumes no responsibility whatever in respect to the sufficiency or accuracy of such information, and there is no guarantee or warranty, either expressed or implied, that the conditions indicated are representative of those existing throughout the Work or the Work Site, or that the conditions indicated are representative of those existing at any particular location, or that the conditions indicated may not change, or that different conditions may not be present.

Contractor shall be solely responsible for locating all existing underground installations by prospecting no later than two (2) workdays prior to any scheduled excavation or trenching, whichever is earlier. Contractor shall check all dimensions, elevations, and quantities indicated in this Contract within the same time period as set forth above for prospecting underground installations. Contractor shall lay out the Work in accordance with this Contract and shall establish and maintain such locations, lines, and levels. Wherever pre-existing work is encountered, Contractor shall verify and be responsible for dimensions and location of such pre-existing work. Contractor shall notify Owner of any discrepancy between the dimensions, elevations, and quantities indicated in this Contract and the conditions of the Work Site or any other errors, omissions or discrepancies which Contractor may discover during such inspections. Full instructions will be furnished by Owner should such error, omission or discrepancy be discovered, and Contractor shall carry out such instructions as if originally specified and without any increase in Contract Price.

Before Final Acceptance of the Work, Contractor shall submit to Owner two (2) sets of Drawings of Record, unless a greater number is specified elsewhere in this Contract, indicating all field deviations from Attachment B or the drawings identified in Attachment C.

1.6 Technical Ability to Perform

Contractor represents and warrants that it is sufficiently experienced and competent and has the necessary capital, facilities, plant, organization, and staff to provide, perform, and complete the Work in full compliance with and as required by or pursuant to this Contract. Without limiting the preceding sentence, Contractor shall employ staff with the same or superior experience as the staff identified in the Bidder Organizational and Experience Chart included in Bidder's Sworn Work History Statement.

1.7 Financial Ability to Perform

Contractor represents and warrants that it is financially solvent and Contractor has the financial resources necessary to provide, perform, and complete the Work in full compliance with and as required by or pursuant to this Contract.

1.8 Time

Contractor represents and warrants that it is ready, willing, able and prepared to begin the Work on the Commencement Date and that the Contract Time is sufficient time to permit completion of the work in full compliance with and as required by or pursuant to this Contract for the Contract Price, all with due regard to all natural and man-made conditions that may affect the Work or the Work Site and all difficulties, hindrances, and delays that may be incidental to the Work.

1.9 Safety at the Work Site

Contractor shall be solely and completely responsible for providing and maintaining safe conditions at the Work Site, including the safety of all persons and property during performance of the Work. This requirement shall apply continuously and shall not be limited to normal working hours. Contractor shall take all safety precautions as shall be necessary to comply with all applicable laws and to prevent injury to persons and damage to property.

Contractor shall conduct all of its operations without interruption or interference with vehicular and pedestrian traffic on public and private rights-of-way, unless it has obtained permits therefor from the proper authorities. If any public or private right-of-way shall be rendered unsafe by Contractor's operations, Contractor shall make such repairs or provide such temporary ways or guards as shall be acceptable to the proper authorities.

1.10 Cleanliness of the Work Site and Environs

Contractor shall keep the Work Site and adjacent areas clean at all times during performance of the Work and shall, upon completion of the Work, leave the Work Site and adjacent areas in a clean and orderly condition.

1.11 Damage to the Work, the Work Site, and Other Property

The Work and everything pertaining thereto shall be provided, performed, completed, and maintained at the sole risk and cost of Contractor from the Commencement Date until Final Payment. Contractor shall be fully responsible for the protection of all public and private property and all persons. Without limiting the foregoing, Contractor shall, at its own cost and expense, provide all permanent and temporary shoring, anchoring, and bracing required by the nature of the Work in order to make all parts absolutely stable and rigid, even when such shoring, anchoring, and bracing is not explicitly specified, and support and protect all buildings, bridges, roadways, conduits, wires, water pipes, gas pipes, sewers, pavements, curbs, sidewalks, fixtures, and landscaping of all kinds, and all other public or private property that may be encountered or endangered in providing, performing, and completing the Work. Contractor shall have no claim against Owner because of any damage or loss to the Work or to Contractor's equipment, materials, or supplies from any cause whatsoever, including damage or loss due to simultaneous work by others. Contractor shall, promptly and without charge to Owner, repair or replace, to the satisfaction of Owner, any damage done to and any loss suffered by the Work, and any damage done to and any loss suffered by the Work Site or other property as a result of the Work. The Contractor is responsible for immediate resolution of any damages and other incidents resulting from the use of chemicals. These incidents include but are not limited to spills, smoke, fumes, and vapors. The contractor will bear all cost for the resolution of these incidents. Notwithstanding any other provision of this Contract, Contractor's obligations under this Section shall exist without regard to, and shall not be construed to be waived by, the availability or unavailability of any insurance, either of Owner or Contractor, to indemnify, hold harmless or reimburse Contractor for the cost of any repair or replacement work required by this Section.

1.12 Subcontractors and Suppliers

A. Approval and Use of Subcontractors and Suppliers. Contractor shall perform the Work with its own personnel and under the management, supervision, and control of its own organization unless otherwise approved by Owner in writing. All subcontractors, suppliers, and subcontracts used by Contractor shall be acceptable to and approved in advance by Owner. Owner's approval of any subcontractor, supplier, and subcontract shall not relieve Contractor of full responsibility and liability for the provision, performance, and completion of the Work in full compliance with and as required by or pursuant to this Contract. All Work performed under any subcontract shall be subject to all of the provisions of this Contract in the same manner as if performed by employees of Contractor. Every reference in this Contract to "Contractor" shall be deemed also to refer to all subcontractors and suppliers of Contractor. Every subcontract shall include a provision binding the subcontractor or supplier to all provisions of this Contract.

B. Removal of Subcontractors and Suppliers. If any subcontractor or supplier fails to perform the part of the Work undertaken by it in a manner satisfactory to Owner, Contractor shall immediately upon notice from Owner terminate such subcontractor or supplier. Contractor shall have no claim for damages, for compensation in excess of the Contract Price, or for a delay or extension of the Contract Time as a result of any such termination.

1.13 Simultaneous Work by Others

Owner shall have the right to perform or have performed such other work as Owner may desire in, about, or near the Work Site during the performance of the Work by Contractor. Contractor shall make every reasonable effort to perform the Work in such manner as to enable both the Work and such other work to be completed without hindrance or interference from each other. Contractor shall afford Owner and other contractors reasonable opportunity for the execution of such other work and shall properly coordinate the Work with such other work.

1.14 Occupancy Prior to Final Acceptance or Final Payment

Owner shall have the right, at its election, to occupy, use, or place in service any part of the Work prior to Final Acceptance of the Work or Final Payment. Such occupancy, use, or placement in service shall be conducted in such manner as not to damage any of the Work or to unreasonably interfere with the progress of the Work. No such occupancy, use or placement in service shall be construed as an acceptance of any of the Work or a release or satisfaction of Contractor's duty to insure and protect the Work, nor shall it, unless conducted in an unreasonable manner, be considered as an interference with Contractor's provision, performance or completion of the Work.

1.15 Owner's Right to Terminate or Suspend Work for Convenience

A. Termination or Suspension for Convenience. Owner shall have the right for its convenience to terminate or suspend the Work in whole or in part at any time by written notice to Contractor. Every such notice shall state the extent and effective date of such termination or suspension. On such effective date, Contractor shall, as and to the extent directed, stop Work under this Contract, cease all placement of further orders or subcontracts, terminate or suspend Work under existing orders and subcontracts, cancel any outstanding orders or subcontracts that may be canceled, and take any action necessary to protect any property in its possession in which Owner has or may acquire any interest and to dispose of such property in such manner as may be directed by Owner.

B. Payment for Completed Work. In the event of any termination pursuant to Subsection 1.15A above, Owner shall pay Contractor (1) such direct costs, excluding overhead, as Contractor shall have paid or incurred for all Work performed in compliance with and as required by or pursuant to this Contract up to the effective date of termination together with ten percent (10%) of such costs for overhead and profit; and (2) such other costs pertaining to the Work, exclusive of overhead and profit as Contractor may have reasonably and necessarily incurred as the result of such termination. Any such payment shall be offset by any prior payment or payments and shall be subject to Owner's rights to withhold and deduct as provided in this Contract.

ARTICLE II
CHANGES AND DELAYS

2.1 Changes

Owner shall have the right by written order executed by Owner to make changes in the Contract, the Work, the Work Site, and the Contract Time ("Change Order"). If any Change Order causes an increase or decrease in the amount of the Work, an equitable adjustment in the Contract Price or Contract Time may be made. No equitable adjustments in the Contract Price or Contract Time shall be made or allowed unless embodied in a Change Order. All claims by Contractor for an equitable adjustment in either the Contract Price or the Contract Time shall be made within two (2) business days following receipt of such Change Order and, if not made prior to such time, shall be deemed conclusively to have been waived. No decrease in the amount of the Work caused by any Change Order shall entitle Contractor to make any claim for damages, anticipated profits or other compensation.

2.2 Delays

A. Extensions for Unavoidable Delays. For any delay that may result from causes that could not be avoided or controlled by Contractor, Contractor shall, upon timely written application, be entitled to issuance of a Change Order providing for an extension of the Contract Time for a period of time equal to the delay resulting from such unavoidable cause. No extension of the Contract Time shall be allowed for any other delay in completion of the Work.

B. No Compensation for Delays. No payment, compensation, damages or adjustment of any kind, other than the extension of the Contract Time provided in Subsection 2.2A above, shall be made to or claimed by Contractor because of hindrances or delays from any cause in the commencement prosecution or completion of the Work, whether caused by Owner or any other party and whether avoidable or unavoidable.

ARTICLE III
CONTRACTOR'S RESPONSIBILITY FOR DEFECTIVE WORK

3.1 Inspection, Testing, Correction of Defects

A. Inspection. Until Final Payment, all parts of the Work shall be subject to inspection and testing by Owner or its designated representatives. Contractor shall furnish, at its own expense, all reasonable access, assistance, and facilities required by Owner for such inspection and testing.

B. Re-Inspection. Re-inspection and re-testing of any Work may be ordered by Owner at any time and, if so ordered, any covered or closed Work shall be uncovered or opened by Contractor. If the Work is found to be in full compliance with this Contract, then Owner shall pay the cost of uncovering, opening, re-inspecting, or re-testing, as the case may be. If such Work is not in full compliance with this Contract, then Contractor shall pay such cost.

C. Correction. Until Final Payment, Contractor shall promptly and without charge, repair, correct, or replace all or any part of the Work that is defective, damaged, flawed, or unsuitable or that in any way fails to conform strictly to the requirements of this Contract.

3.2 Warranty of Work

A. Scope of Warranty. Contractor warrants that the Work and all of its components shall be free from defects and flaws in design, workmanship, and materials; shall strictly conform to the requirements of this Contract; and shall be fit, sufficient, and suitable for the purposes expressed in or reasonably inferred from this Contract. The warranty herein expressed shall be in addition to any other warranties expressed or implied by law, which are hereby reserved unto Owner.

B. Warranty Period, Repairs, Extension of Warranty. Contractor shall promptly and without charge correct any failure to fulfill the above warranty that may be discovered or develop at any time within one (1) year after Final Payment or such longer period as may be prescribed in Attachment B or by law. The above warranty shall be extended automatically to cover all repaired and replacement parts and labor provided or performed under such warranty and Contractor's obligation to correct Work shall be extended for a period of one (1) year from the date of such repair or replacement. The time period established in this Subsection 3.2B relates only to the specific obligation of Contractor to correct Work and shall not be construed to establish a period of limitation with respect to other obligations that Contractor has under this Contract.

C. Subcontractor and Supplier Warranties. Whenever Attachment B requires a subcontractor or supplier to provide a guarantee or warranty, Contractor shall be solely responsible for obtaining said guarantee or warranty in a form satisfactory to Owner and assigning said guarantee or warranty to Owner. Acceptance of any assigned guarantees or warranties by Owner shall be a precondition to Final Payment and shall not relieve Contractor of any of its guarantee or warranty obligations under this Contract.

3.3 Owner's Right to Correct

If, within two (2) business days after Owner gives Contractor notice of any defect, damage, flaw, unsuitability, nonconformity or failure to meet warranty subject to correction by Contractor pursuant to Section 3.1 or Section 3.2 of this Contract, Contractor neglects to make or undertake with due diligence to make the necessary corrections, then Owner shall be entitled to make, either with its own forces or with contract forces, the corrections and to recover from Contractor all resulting costs, expenses, losses or damages, including attorneys' fees and administrative expenses.

ARTICLE IV
FINANCIAL ASSURANCES

4.1 Bonds

Contemporaneous with Contractor's execution of this Contract, Contractor shall provide a Performance Bond and a Labor and Material Payment Bond, in the forms attached to this Contract, from a surety company licensed to do business in the State of Illinois with a general rating of A and a financial size category of Class X or better in Best's Insurance Guide, each in the penal sum of the Contract Price ("Bonds"). Contractor shall, at all times while providing, performing or completing the Work, including, without limitation, at all times while correcting any failure to meet warranty pursuant to Section 3.2 of this Contract, maintain and keep in force, at Contractor's expense, the Bonds required hereunder.

4.2 Insurance

Contemporaneous with Contractor's execution of this Contract, Contractor shall provide certificates and policies of insurance evidencing the minimum insurance coverage and limits set forth in Attachment A. Such policies shall be in a form, and from companies acceptable to Owner. Such insurance shall provide that no change, modification in or cancellation of any insurance shall become effective until the expiration of thirty (30) days, after written notice thereof, shall have been given by the insurance company to Owner. Contractor shall, at all times while providing, performing or completing the Work, including, without limitation, at all times while correcting any failure to meet warranty pursuant to Section 3.2 of this Contract, maintain and keep in force, at Contractor's expense, the minimum insurance coverages and limits set forth in Attachment A.

4.3 Indemnification

Contractor shall indemnify, save harmless, and defend Owner against any and all lawsuits, claims, demands, damages, liabilities, losses, and expenses, including attorneys' fees and administrative expenses that may arise or be alleged to have arisen out of or in connection with Contractor's performance of or failure to perform the Work or any part thereof, whether or not due or claimed to be due in whole or in part to the active, passive or concurrent negligence or fault of Contractor, except to the extent caused by the sole negligence of Owner.

ARTICLE V
PAYMENT

5.1 Contract Price

Owner shall pay to Contractor, in accordance with and subject to the terms and conditions set forth in this Article V and Attachment A, and Contractor shall accept in full satisfaction for providing, performing, and completing the Work, the amount or amounts set forth in Attachment A (the "Contract Price"), subject to any additions, deductions or withholdings provided for in this Contract.

5.2 Taxes and Benefits

Owner is exempt from and shall not be responsible to pay or reimburse Contractor for any state or local sales, use or excise taxes. The Contract Price includes all other applicable federal, state, and local taxes of every kind and nature applicable to the Work, as well as all taxes, contributions, and premiums for unemployment insurance, old age, or retirement benefits, pension, annuities, or other similar benefits. All claim or right to claim additional compensation by reason of the payment of any such tax, contribution, or premium is hereby waived and released by Contractor.

5.3 Progress Payments

A. Payment in Installments. The Contract Price shall be paid in monthly installments in the manner set forth in Attachment A ("Progress Payments").

B. Pay Requests. Contractor shall, as a condition precedent to its right to receive each Progress Payment, submit to Owner a pay request in a form provided by or approved by Owner ("Pay Request"). The first Pay Request shall be submitted not sooner than thirty (30) days following commencement of the Work. Owner may, by written notice to Contractor, designate a specific day of each month on or before which Pay Requests must be submitted. Each Pay Request shall include (a) Contractor's certification of the value of and partial or final waivers of lien covering all Work for which payment is then requested; and (b) Contractor's certification that all prior Progress Payments have been properly applied to the payment or reimbursement of the costs with respect to which they were paid.

C. Work Entire. This Contract and the Work are entire and the Work as a whole is of the essence of this Contract. Notwithstanding any other provision of this Contract, each and every part of this Contract and of the work are interdependent and common to one another and to Owner's obligation to pay all or any part of the Contract price or any other consideration for the Work. Any and all Progress payments made pursuant to this Article are provided merely for the convenience of Contractor and for no other purpose.

5.4 Final Acceptance and Final Payment

A. Notice of Completion. When the Work has been completed and is ready in all respects for acceptance by Owner, Contractor shall notify Owner and request a final inspection ("Notice of Completion"). Contractor's Notice of Completion shall be given sufficiently in advance of the Completion Date to allow for scheduling of the final inspection and for completion or correction before the Completion Date of any items identified by such inspection as being defective, damaged, flawed, unsuitable, nonconforming, incomplete or otherwise not in full compliance with or as required by or pursuant to this Contract ("Punch List Work").

B. Punch List and Final Acceptance. The Work shall be finally accepted when, and only when, the whole and all parts thereof shall have been completed to the satisfaction of Owner in full compliance with and as required by or pursuant to this Contract. Upon receipt of Contractor's Notice of Completion, Owner shall make a review of the Work and notify Contractor in writing of all Punch List Work, if any, to be completed or corrected. Following Contractor's completion or correction of all Punch List Work, Owner shall make another review of the Work and prepare and deliver to Contractor either a written notice of additional Punch List Work to be completed or corrected or a written notice of final acceptance of the Work ("Final Acceptance").

C. Final Payment. As soon as practicable after Final Acceptance, Contractor shall submit to Owner a properly completed final Pay Request in the form provided by Owner ("Final Pay Request"). Owner shall pay to Contractor the balance of the Contract Price after deducting therefrom all charges against Contractor as provided for in this Contract ("Final Payment"). Final Payment shall be made not later than ninety (90) days after Owner approves the Final Pay Request. The acceptance by Contractor of Final Payment shall operate as a full and complete release of Owner of and from any and all lawsuits, claims, demands, damages, liabilities, losses, and expenses of, by or to Contractor for anything done, furnished for, arising out of, relating to, or in connection with the Work or for, or on account, of any act or neglect of Owner arising out of, relating to, or in connection, with the Work.

5.5 Liens

A. Title. Nothing in this Contract shall be construed as vesting in Contractor any right of property in any equipment, materials, supplies, and other items provided under this Contract after they have been installed in, incorporated into, attached to, or affixed to the work or the Work Site. All such equipment, materials, supplies and other items shall, upon being so installed, incorporated, attached or affixed, become the property of Owner, but such title shall not release Contractor from its duty to ensure and protect the Work in accordance with the requirements of this Contract.

B. Waivers of Lien. Contractor shall, from time to time at Owner's request and in any event prior to Final Payment, furnish to Owner such receipts, releases, affidavits, certificates, and other evidence as may be necessary to establish to the reasonable satisfaction of Owner, that no lien against the Work or the public funds held by Owner exists in favor of any person whatsoever for or by reason of any equipment, material, supplies or other item furnished, labor performed or other thing done in connection with the Work or this Contract ("Lien"), and that no right to file any Lien exists in favor of any person whatsoever.

C. Removal of Liens. If at any time any notice of any Lien is filed, then Contractor shall promptly and without charge discharge, remove or otherwise dispose of such Lien. Until such discharge, removal, or disposition, Owner shall have the right to retain from any money payable hereunder an amount that Owner, in its sole judgment, deems necessary to satisfy such Lien and to pay the costs and expenses, including attorneys' fees and administrative expenses, of any actions brought in connection therewith or by reason thereof.

D. Protection of Owner Only. This Section shall not operate to relieve Contractor's surety or sureties from any of their obligations under the Bonds, nor shall it be deemed to vest any right, interest, or entitlement in any subcontractor or supplier. Owner's retention of funds pursuant to this Section shall be deemed solely for the protection of its own interests pending removal of such Liens by Contractor, and Owner shall have no obligation to apply such funds to such removal, but may, nevertheless, do so where Owner's interests would thereby be served.

5.6 Deductions

A. Owner's Right to Withhold. Notwithstanding any other provision of this Contract and without prejudice to any of Owner's other rights or remedies, Owner shall have the right at any time or times, whether before or after approval of any Pay Request, to deduct and withhold from any Progress or Final Payment that may be or become due under this Contract such amount as may reasonably appear necessary to compensate Owner for any actual or prospective loss due to: (1) Work that is defective, damaged, flawed, unsuitable, nonconforming or incomplete; (2) damage for which Contractor is liable under this Contract; (3) state or local sales, use or excise taxes from which Owner is exempt; (4) Liens or claims of Lien regardless of merit; (5) claims of subcontractors, suppliers or other persons regardless of merit; (6) delay in the progress or completion of the Work; (7) inability of Contractor to complete the Work; (8) failure of Contractor to properly complete or document any Pay Request; (9) any other failure of Contractor to perform any of its obligations under this Contract; or (10) the cost to Owner, including attorneys' fees and administrative costs, of correcting any of the aforesaid matters or exercising any one or more of Owner's remedies set forth in Section 6.3 of this Contract.

B. Use of Withheld Funds. Owner shall be entitled to retain any and all amounts withheld pursuant to Subsection 5.6A above until Contractor shall have either performed the obligations in question or furnished security for such performance satisfactory to Owner. Owner shall be entitled to apply any money withheld or any other money due Contractor under this Contract to reimburse itself for any and all costs, expenses, losses, damages, liabilities, suits, judgments, awards, attorneys' fees and administrative expenses incurred, suffered or sustained by Owner and chargeable to Contractor under this Contract.

ARTICLE VI
DISPUTES AND REMEDIES

6.1 Dispute Resolution Procedure

A. Notice of Disputes and Objections. If Contractor disputes or objects to any requirement, direction, instruction, interpretation, determination or decision of Owner, Contractor may notify Owner in writing of its dispute or objection and of the amount of any equitable adjustment to the Contract Price or Contract Time to which Contractor claims it will be entitled as a result thereof; provided, however, that Contractor shall, nevertheless, proceed without delay to perform the Work as required, directed, instructed, interpreted, determined or decided by Owner, without regard to such dispute or objection. Unless Contractor so notifies Owner within two (2) business days after receipt of such requirement, direction, instruction, interpretation, determination or decision, Contractor shall be conclusively deemed to have waived all such disputes or objections and all claims based thereon.

B. Negotiation of Disputes and Objections. To avoid and settle without litigation any such dispute or objection, Owner and Contractor agree to engage in good faith negotiations. Within three (3) business days after Owner's receipt of Contractor's written notice of dispute or objection, a conference between Owner and Contractor shall be held to resolve the dispute. Within three (3) business days after the end of the conference, Owner shall render its final decision, in writing, to Contractor. If Contractor objects to the final decision of Owner, then it shall, within three (3) business days, give Owner notice thereof and, in such notice, shall state its final demand for settlement of the dispute. Unless Contractor so notifies Owner, Contractor shall be conclusively deemed (1) to have agreed to and accepted Owner's final decision and (2) to have waived all claims based on such final decision.

6.2 Contractor's Remedies

If Owner fails or refuses to satisfy a final demand made by Contractor pursuant to Section 6.1 of this Contract or to otherwise resolve the dispute which is the subject of such demand to the satisfaction of Contractor within ten (10) days following receipt of such demand, then Contractor shall be entitled to pursue such remedies not inconsistent with the provisions of this Contract, as it may have in law or equity.

6.3 Owner's Remedies

If it should appear at any time prior to Final Payment that Contractor has failed or refused to prosecute or has delayed in the prosecution of the Work with diligence at a rate that assures completion of the Work in full compliance with the requirements of this Contract on or before the Completion Date, or has attempted to assign this Contract or Contractor's rights under this Contract, either in whole or in part, or has falsely made any representation or warranty in this Contract, or has otherwise failed, refused or delayed to perform or satisfy any other requirement of this Contract, or has failed to pay its debts as they come due ("Event of Default"), and has failed to cure any such Event of Default within five (5) business days after Contractor's receipt of written notice of such Event of Default, then Owner shall have the right, at its election and without prejudice to any other remedies provided by law or equity, to pursue any one or more of the following remedies:

(a) Owner may require Contractor, within such reasonable time as may be fixed by Owner, to complete or correct all or any part of the Work that is defective, damaged, flawed, unsuitable, nonconforming or incomplete; to remove from the Work Site any such Work; to accelerate all or any part of the Work; and to take any or all other action necessary to bring Contractor and the Work into strict compliance with this Contract.

(b) Owner may perform or have performed all Work necessary to cure such Event of Default and withhold or recover from Contractor all the cost and expense, including attorneys' fees and administrative costs, incurred by Owner in connection therewith.

(c) Owner may accept the defective, damaged, flawed, unsuitable, nonconforming, incomplete or dilatory Work, or part thereof and make an equitable reduction in the Contract Price.

(d) Owner may terminate this Contract without liability for further payment of amounts due or to become due under this Contract.

(e) Owner may, without terminating this Contract, terminate Contractor's rights under this Contract and, for the purpose of completing or correcting the Work, evict Contractor and take possession of all equipment, materials, supplies, tools, appliances, plans, specifications, schedules, manuals, drawings, and other papers relating to the Work, whether at the Work Site or elsewhere, and either complete or correct the Work with its own forces or contracted forces, all at Contractor's expense.

(f) Upon any termination of this Contract or of Contractor's rights under this Contract, and at Owner's option exercised in writing, any or all subcontracts and supplier contracts of Contractor shall be deemed to be assigned to Owner without any further action being required, but Owner shall not thereby assume any obligation for payments due under such subcontracts and supplier contracts for any Work provided or performed prior to such assignment.

(g) Owner may withhold from any Progress Payment or Final Payment, whether or not previously approved, or may recover from Contractor any and all costs, including attorneys' fees and administrative expenses incurred by Owner as the result of any Event of Default or as a result of actions taken by Owner in response to any Event of Default.

(h) Owner may recover any damages suffered by Owner.

6.4 Owner's Special Remedy for Delay

If the Work is not completed by Contractor in full compliance with and as required by or pursuant to this Contract, within the Contract Time as such time may be extended by Change Order, then Owner may invoke its remedies under Section 6.3 of this Contract or may, in the exercise of its sole and absolute discretion, permit Contractor to complete the Work, but charge to Contractor and deduct from any Progress or Final Payments, whether or not previously approved, administrative expenses and costs for each day completion of the Work is delayed beyond the Completion Date, computed on the basis of the "Per Diem Administrative Charge" set forth in Attachment A, as well as any additional damages caused by such delay.

6.5 Terminations and Suspensions Deemed for Convenience

Any termination or suspension of Contractor's rights under this Contract for an alleged default that is ultimately held unjustified shall automatically be deemed to be a termination or suspension for the convenience of Owner under Section 1.15 of this Contract.

ARTICLE VII
LEGAL RELATIONSHIPS AND REQUIREMENTS

7.1 Binding Effect

This Contract shall be binding upon Owner and Contractor, and upon their respective heirs, executors, administrators, personal representatives, and permitted successors and assigns. Every reference in this Contract to a party shall also be deemed to be a reference to the authorized officers, employees, agents, and representatives of such party.

7.2 Relationship of the Parties

Contractor shall act as an independent contractor in providing and performing the Work. Nothing in nor done pursuant to this Contract shall be construed (1) to create the relationship of principal and agent, partners or joint ventures between Owner and Contractor, or (2) except as provided in Paragraph 6.3(f) above to create any relationship between Owner and any subcontractor or supplier of Contractor. No review, inspection, test, audit, measurement, order, determination, decision, disapproval, approval, payment for or use or acceptance of the Work or any other act or omission of Owner shall imply, create any interest in, be deemed to be the issuance of, or require Owner to issue, any license or permit to Contractor or any subcontractor.

7.3 No Collusion/ Prohibited Interests

Contractor hereby represents that the only persons, firms or corporations interested in this Contract as principals are those disclosed to Owner prior to the execution of this Contract and that this Contract is made without collusion with any other person, firm, or corporation. If at any time it shall be found that Contractor has, in procuring this Contract, colluded with any other person, firm or corporation, then Contractor shall be liable to Owner for all loss or damage that Owner may suffer thereby, and this Contract shall, at Owner's option, by null and void.

Contractor hereby represents and warrants that neither Contractor nor any person affiliated with Contractor or that has an economic interest in Contractor or that has or will have an interest in the Work or will participate, in any manner whatsoever, in the Work is acting, directly or indirectly, for or on behalf of any person, group, entity or nation named by the United States Treasury Department as a Specially Designated National and Blocked Person, or for or on behalf of any person, group, entity or nation designated in Presidential Executive Order 13224 as a person who commits, threatens to commit, or supports terrorism, and neither Contractor nor any person affiliated with Contractor or that has an economic interest in Contractor or that has or will have an interest in the Work or will participate, in any manner whatsoever, in the Work is, directly or indirectly, engaged in, or facilitating, the Work on behalf of any such person, group, entity or nation.

7.4 Assignment

Contractor shall not (1) assign this Contract in whole or in part; (2) assign any of Contractor's rights or obligations under this Contract; or (3) assign any payment due or to become due under this Contract without the prior express written approval of Owner, which approval may be withheld in the sole and unfettered discretion of Owner; provided, however, that Owner's prior written approval shall not be required for assignments of accounts, as defined in the Illinois Commercial Code, if to do so would violate Section 9-318 of the Illinois Commercial Code, 810 ILCS 5/9-318. Owner may assign this Contract, in whole or in part, or any or all of its rights or obligations under this Contract, without the consent of Contractor.

7.5 Confidential Information

All information supplied by Owner to Contractor for or in connection with this Contract or the Work shall be held confidential by Contractor and shall not, without the prior express written consent of Owner, be used for any purpose other than performance of the Work.

7.6 No Waiver

No examination, inspection, investigation, test, measurement, review, determination, decision, certificate or approval by Owner; nor any order by Owner for the payment of money; nor any payment for or use, occupancy, possession or acceptance of the whole or any part of the Work by Owner; nor any extension of time granted by Owner; nor any delay by Owner in exercising any right under this Contract; nor any other act or omission of Owner shall constitute or be deemed to be an acceptance of any defective, damaged, flawed, unsuitable, nonconforming, or incomplete Work, equipment, materials or supplies; nor operate to waive or otherwise diminish the effect of any warranty or representation made by Contractor or of any requirement or provision of this Contract or of any remedy, power or right of Owner.

7.7 No Third Party Beneficiaries

No claim as a third party beneficiary under this Contract by any person, firm or corporation other than Contractor shall be made or be valid against Owner.

7.8 Notices

All notices required or permitted to be given under this Contract shall be in writing and shall be deemed received by the addressee thereof when delivered in person on a business day at the address set forth below or on the third business day after being deposited in any main or branch United States post office for delivery at the address set forth below by properly addressed, postage prepaid, certified or registered mail, return receipt requested.

Notices and communications to Owner shall be addressed to, and delivered at, the following address:

LAKE COUNTY FOREST PRESERVE DISTRICT
1899 WEST WINCHESTER ROAD
LIBERTYVILLE, ILLINOIS 60048
ATTENTION: GREG WALENTER, PROJECT MANAGER

Notices and communications to Contractor shall be addressed to, and delivered to, the following address:

CAMPANELLA & SONS, INC.
39207 N. MAGNETICS BLVD.
WADSWORTH, ILLINOIS 60083
ATTENTION: SUZANNE ZUPEC

The foregoing shall not be deemed to preclude the use of other non-oral means of notification or to invalidate any notice properly given by any such other non-oral means. By notice complying with the requirements of this Section, Owner and Contractor each shall have the right to change the address or addressee or both for all future notices to it, but no notice of a change of address shall be effective until actually received.

7.9 Governing Laws

This Contract and the rights of Owner and Contractor under this Contract shall be interpreted according to the internal laws, but not the conflict of laws rules, of the State of Illinois.

7.10 Changes in Laws

Unless otherwise explicitly provided in this Contract, any reference to laws shall include such laws as they may be amended or modified from time to time.

7.11 Compliance with Laws and Grants

Contractor shall give all notices, pay all fees, and take all other action that may be necessary to ensure that the Work is provided, performed, and completed in accordance with all (1) required or applicable governmental permits, licenses, grants, or other approvals and authorizations that may be required in connection with providing, performing, and completing the Work; and (2) applicable statutes, ordinances, rules and regulations, including without limitation, the Prevailing Wage Act, 820 ILCS 130/0/01et seq. (in furtherance of which a copy of Owner's ordinance ascertaining the prevailing rate of wages, in effect as of the date of this Contract, has been attached as an Appendix to this Contract, and if the Illinois Department of Labor revises the prevailing rate of hourly wages to be paid, the revised rate shall apply to this Contract); any other prevailing wage laws; the Fair Labor Standards Act; any statutes regarding qualification to do business; any statutes requiring preference to laborers of specified classes; the Illinois Steel Products Procurement Act, 30 ILCS 565/1 et seq.; any statutes prohibiting discrimination because of or requiring affirmative action based on race, creed, color, national origin, age, sex or other prohibited classification, including without limitation, the Americans with Disabilities Act of 1990,

42 U.S.C. §§ 12101 et seq., the Illinois Human Rights Act, 775 ILCS 5/1-101 et seq.; and the Discrimination in Public Contracts Act, 775 ILCS 10/1 et seq.; any statutes regarding safety or the performance of the Work, including the Illinois Structural Work Act, the Illinois Underground Utility Facilities Damage Prevention Act, and the Occupational Safety and Health Act; and applicable federal labor laws including 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 revising, codifying and enacting without substantive changes the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a et seq.) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c).

Contractor shall be solely liable for any fines or civil penalties that are imposed by any governmental or quasi-governmental agency or body that may arise or be alleged to have arisen out of or in connection with Contractor's or its subcontractors' or suppliers' performance of or failure to perform the Work or any part thereof.

Nothing in this Contract shall be construed to waive or limit Owner's authority to regulate any matter falling within its regulatory authority, including the activities of Contractor, its subcontractors, or any other person, or the Work or the Work Site.

Every provision of law required by law to be inserted into this Contract shall be deemed to be inserted herein.

7.12 Compliance with Patents

A. Assumption of Costs, Royalties, and Fees. Contractor shall pay or cause to be paid all costs, royalties, and fees arising from the use on or the incorporation into the Work, of patented equipment, materials, supplies, tools, appliances, devices, processes, or inventions.

B. Effect of Contractor Being Enjoined. Should Contractor be enjoined from furnishing or using any equipment, materials, supplies, tools, appliances, devices, processes or inventions supplied or required to be supplied or used under this Contract, Contractor shall promptly offer substitute equipment, materials, supplies, tools, appliances, devices, processes or inventions in lieu thereof, of equal efficiency, quality, suitability, and market value for review by Owner. If Owner should disapprove the offered substitutes and should elect in lieu of a substitution to have supplied, and to retain and use any such equipment, materials, supplies, tools, appliances, devices, processes or inventions as may by this Contract be required to be supplied, Contractor shall pay such royalties and secure such valid licenses as may be requisite and necessary for Owner to use such equipment, materials, supplies, tools, appliances, devices, processes or inventions without being disturbed or in any way interfered with by any proceeding in law or equity on account thereof. Should Contractor neglect or refuse to make any approved substitution promptly or to pay such royalties and secure such licenses as may be necessary, then Owner shall have the right to make such substitution or Owner may pay such royalties and secure such licenses and charge the cost thereof against any money due Contractor from Owner or recover the amount thereof from Contractor and its surety or sureties notwithstanding that Final Payment may have been made.

7.13 Time

The Contract Time is of the essence of this Contract. Except where otherwise stated, references in this Contract to days shall be construed to refer to calendar days.

7.14 Severability

The provisions of this Contract shall be interpreted when possible to sustain their legality and enforceability as a whole. In the event any provision of this Contract shall be held invalid, illegal or unenforceable by a court of competent jurisdiction in whole or in part, neither the validity of the remaining part of such provision, nor the validity of any other provisions of this Contract shall be in any way affected thereby.

7.15 Entire Agreement

This Contract sets forth the entire agreement of Owner and Contractor with respect to the accomplishment of the Work and the payment of the Contract Price therefor, and there are no other understandings or agreements, oral or written, between Owner and Contractor with respect to the Work and the compensation therefor.

7.16 Amendments

No modification, addition, deletion, revision, alteration or other change to this Contract shall be effective unless and until such change is reduced to writing and executed and delivered by Owner and Contractor.

IN WITNESS WHEREOF, Owner and Contractor have caused this Contract to be executed in two (2) original counterparts as of the day and year first written above.

(SEAL)

Attest/Witness

By: Julie Gragnani
Julie Gragnani
Title: Secretary

LAKE COUNTY FOREST PRESERVE DISTRICT

Alex Ty Kovach
Title: Executive Director

Attest/Witness

By: Mary Kenar
Mary Kenar

Title: Executive Secretary/
Treasurer

CAMPANELLA & SONS, INC.

By: Suzanne Zupec
Suzanne Zupec

Title: President

PUBLIC ACCESS IMPROVEMENTS
ETHEL'S WOODS FOREST PRESERVE
BID SPEC NUMBER: 18006

STATE OF ILLINOIS }
COUNTY OF } SS

CONTRACTOR'S CERTIFICATION

Suzanne Zupec, being first duly sworn on oath, deposes and states that all statements herein made are made on behalf of Contractor, that this deponent is authorized to make them, and that the statements contained herein are true and correct.

Contractor deposes, states, and certifies that Contractor is not barred from contracting with a unit of state or local government as a result of (i) a violation of either Section 33E-3 or Section 33E-4 of Article 33E of the Criminal Code of 1961, 720 ILCS 5/33E-1 et seq.; or (ii) a violation of the USA Patriot Act of 2001, 107 Public Law 56 (October 26, 2001) (the "Patriot Act") or other statutes, orders, rules, and regulations of the United States government and its various executive departments, agencies and offices related to the subject matter of the Patriot Act, including, but not limited to, Executive Order 13224 effective September 24, 2001.

DATED this 20 day of February, 2018

Attest/Witness

By: Mary Kenar
Mary Kenar

Title: Executive Secretary/ Treasurer

CAMPANELLA & SONS, INC.

By: Suzanne Zupec
Suzanne Zupec

Title: President

Subscribed and Sworn to before me this 20th day of February, 2018

Amy Horton
Notary Public

My Commission Expires: 01/31/2019

{SEAL}

OFFICIAL SEAL
AMY HORTON
NOTARY PUBLIC - STATE OF ILLINOIS
MY COMMISSION EXPIRES:01/31/19

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ATTACHMENT A
SUPPLEMENTAL SCHEDULE OF CONTRACT TERMS

1. Project:

The work includes all labor, equipment, and materials to construct a 25-car asphalt parking lot with 125' entry drive and concrete sidewalks; approximately 1.4 miles of 10' and 12'-wide crushed stone trail; and installing one (1) prefabricated evaporator toilet building. This includes all associated demolition, grading, drainage, temporary access, erosion control, tree and shrub removal, seeding and other improvements.

2. Work Site:

ETHEL'S WOODS FOREST PRESERVE
40345 N. Highway 45
Antioch, Illinois 60002

3. Permits, Licenses, Approvals, and Authorizations:

Contractor shall obtain all required governmental permits, licenses, approvals, and authorizations, except:

☒ Lake County Stormwater Management Commission – Watershed Development Permit

Lake County – Planning, Building and Development Department

Illinois Environmental Protection Agency

U.S. Army Corps of Engineers

4. Commencement Date:

☒ The date of execution of the Contract by Owner

As a Required Submittal pursuant to Section 1.3 of this Contract, within ten (10) days after the Closing, Contractor shall submit to Owner a detailed schedule of the Work (the "Work Schedule") that (1) states the time of beginning and completion of every major component of the Work; (2) logically and realistically relates the performance of each major component of the Work to each other major component of the Work and to the whole of the Work in a manner that demonstrates that Contractor has allowed sufficient time to complete each major component without interfering or delaying any other major component; and (3) does not conflict with the Contract. If Owner rejects a submitted Work Schedule because it does not comply with this Contract, Owner shall notify Contractor in writing, specifying the reasons for non-compliance. Within two (2) business days thereafter, Contractor shall submit a revised Work Schedule to Owner. If a Work Schedule is acceptable to Owner, Owner shall notify Contractor in writing. The parties shall amend the Work Schedule as necessary to be consistent with any Change Order related to the Contract Time.

5. Substantial and Final Completion Dates:

☒ NOVEMBER 16, 2018, for completion of trail and parking lot construction work, plus extensions, if any, authorized by a Change Order issued pursuant to Article II of the Contract.

JUNE 30, 2019, for completion of all remaining work, plus extensions, if any, authorized by a Change Order issued pursuant to Article II of the Contract.

JUNE 30, 2020, for completion of native seed establishment.

6. Insurance Coverages

All insurance policies shall be issued from insurance companies holding at least an "A5" or better rating as rated by A.M. Best Company. All policies shall include the District named as additional insured.

A. Worker's Compensation and Employer's Liability with limits not less than:

(1) Worker's Compensation: Statutory

(2) Employer's Liability:

a. $1,000,000 - injury per occurrence

b. $ 500,000 - disease per employee

c. $ 500,000 - disease policy limit

Such insurance shall evidence that coverage applies in the State of Illinois.

B. Comprehensive Motor Vehicle Liability with limits for vehicles owned, non-owned or rented, not less than:

(1) Bodily Injury:

a. $ 500,000 - per person

b. $1,000,000 - per occurrence

(2) Property Damage:

a. $ 500,000 - per occurrence

b. $ 1,000,000 - aggregate

All employees shall be included as insured's.

C. Comprehensive General Liability: If such CGL insurance contains a general aggregate limit, it shall apply separately to this project. With coverage written on an "occurrence" basis with limits no less than:

(1) General Aggregate: $2,000,000

(2) Bodily Injury:

a. $ 2,000,000 - per person

b. $ 2,000,000 - per occurrence

(3) Property Damage:

a. $ 2,000,000 - per occurrence

b. $ 2,000,000 - aggregate

(4) Other Coverages:

- Premises/Operations
- Products/Completed Operations (to be maintained for two years following Final Payment)
- Independent Contractors
- Personal Injury (with Employment Exclusion deleted)
- Broad Form Property Damage Endorsement
- Blanket Contractual Liability (must expressly cover the indemnity provisions of the Contract)
- Bodily Injury and Property Damage "X", "C", and "U" exclusions shall be deleted

Railroad exclusions shall be deleted if Work Site is within 50 feet of any railroad tracks.

All employees shall be included as insured's.

D. Builders Risk Insurance. This insurance shall be written in completed value form, shall protect Contractor and Owner against "all risks" of direct physical loss to buildings, structures, equipment, and materials to be used in providing, performing, and completing

the Work, including without limitation fire extended coverage, vandalism and malicious mischief, sprinkler leakage, flood, earth movement and collapse, and shall be designed for the circumstances that may affect the Work.

This insurance shall be written with limits not less than the insurable value of the Work at completion. The insurable value shall include the aggregate value of Owner-furnished equipment and materials to be constructed or installed by Contractor.

This insurance shall include coverage while equipment or materials are in warehouses, during installation, during testing, and after the Work is completed, but prior to Final Payment. This insurance shall include coverage while Owner is occupying all or any part of the Work prior to Final Payment without the need for the insurance company's consent.

E. Umbrella Policy. The required coverages may be in any combination of primary, excess, and umbrella policies. Any excess or umbrella policy must provide excess coverage over underlying insurance on a following-form basis such that, when any loss covered by the primary policy exceeds the limits under the primary policy, the excess or umbrella policy becomes effective to cover such loss.

F. Deductible. Each policy shall have a deductible or self-insured retention less than $10,000.00.

G. Owner /Engineer as Additional Insured. Owner /Engineer shall be named as an Additional Insured on the following policies:

- Comprehensive Motor Vehicle Liability
- Comprehensive General Liability

The Additional Insured endorsement shall identify Owner Engineer, respectively, as follows:

Lake County Forest Preserve District (Owner)
Civiltech Engineering, Inc. (Engineer)

H. Indemnification Clause. The Contractor shall protect, indemnify, hold and save harmless and defend the District its officers, officials, employees, volunteers, and agents against any and all claims, costs, causes, actions and expenses, including but not limited to attorney's fees incurred by reason of a lawsuit or claim for compensation arising in favor of any person, including the employees, or volunteers or officers or independent contractors or subcontractors of the District, on account of personal injuries or death, or damages to property occurring, growing out of, incidental to, or resulting directly or indirectly from the use and performance by or on behalf of the Contractor.

I. Evidence of Insurance. Company shall furnish District with a certificate(s) of insurance and applicable policy endorsement(s), executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements set forth above. Failure of District to demand such certificate, endorsement or other evidence of full compliance with these insurance requirements or failure of District to identify a deficiency from evidence that is provided shall not be construed as a waiver of Company's obligation to maintain such insurance. District shall have the right, but not the obligation, of prohibiting Company from entering the premises until such certificates or other evidence that insurance has been placed in complete compliance with these requirements is received and approved by District. Failure to maintain the required insurance may result in termination of this Contract at District's option. Company shall provide certified copies of all insurance policies required above within 10 days of Districts' written request for said copies.

J. Owner's and Contractor's Protective Liability Insurance ***(required if hiring sub-contractors)***. Contractor, at its sole cost and expense, shall purchase this insurance in

the name of Owner with a combined single limit for bodily injury and property damage of not less than $1,000,000.

7. Contract Price SCHEDULE OF PRICES

A. Unit Price Contract

For providing, performing, and completing all Work, the total Contract Price, which is the sum of the products resulting from multiplying the number of acceptable units of Unit Price Items (including Base Bid Items and Alternate Bid Items) listed below incorporated in the Work by the Unit Price set forth below for such Unit Price Item. Bidder acknowledges that the total Contract Price will depend on the number of Base Bid Items and Alternate Bid Items accepted by Owner and the Unit Prices accepted by Owner:

	BASE BID ITEMS	NO. OF UNITS	UNIT	UNIT PRICE	EXTENSION PRICE
A. SITE PREPARATION AND PROTECTION					
A1	MOBILIZATION AND TEMPORARY SITE ACCESS	1	LS	$25,246.50	$25,246.50
A2	STABILIZED CONSTRUCTION ENTRANCE	1	EA	$1,689.82	$1,689.82
A3	TEMPORARY CULVERTS AND CROSSINGS	5	EA	$2,326.00	$11,630.00
A4	TEMPORARY CONSTRUCTION FENCE, 4'	5,778	LF	$1.99	$11,498.22
A5	FILTER SOCK	2,053	LF	$3.95	$8,109.35
A6	SILT FENCE	6,886	LF	$3.25	$22,379.50
A7	TEMPORARY DITCH CHECK	10	EA	$132.23	$1,322.30
A8	PERMEABLE PLASTIC DITCH CHECK	68	EA	$169.12	$11,500.16
A9	COIR LOG	34	EA	$205.00	$6,970.00
A10	VEGETATION REMOVAL - COMPLETE	1	LS	$6,662.50	$6,662.50
A11	FIELD MOWING	11	A	$227.55	$2,503.05
A12	AGGREGATE REMOVAL AND DISPOSAL, 6" DEPTH	250	SY	$4.52	$1,130.00
A13	REMOVE AND DISPOSE FENCE	1100	LF	$3.52	$3,872.00
				TOTAL	$114,513.40

	BASE BID ITEMS	NO. OF UNITS	UNIT	UNIT PRICE	EXTENSION PRICE
B. EARTHWORK AND DRAINAGE					
B1	SITE GRADING	1	LS	$176,700.00	$176,700.00
B2	FINISH GRADING	52,626	SY	$0.51	$26,839.26
B3	EXCAVATION OF UNSUITABLE MATERIALS	824	CY	$14.96	$12,327.04
B4	GEOTEXTILE GROUND STABILIZATION	1,832	SY	$2.17	$3,975.44

	BASE BID ITEMS	NO. OF UNITS	UNIT	UNIT PRICE	EXTENSION PRICE
B. EARTHWORK AND DRAINAGE					
B5	POROUS GRANULAR EMBANKMENT (PGE), CA-1	824	CY	$57.81	$47,635.44
B6	TOPSOIL FURNISH AND PLACEMENT	200	SY	$8.92	$1,784.00
B7	#1 MILLENNIUM TRAIL CULVERT CROSSINGS - COMPLETE, 12" HDPE, 36'	1	EA	$2,027.60	$2,027.60
B8	#2 MILLENNIUM TRAIL CULVERT CROSSINGS - COMPLETE, 12" HDPE, 34'	1	EA	$1,982.52	$1,982.52
B9	#3 MILLENNIUM TRAIL CULVERT CROSSINGS - COMPLETE, 12" HDPE, 39'	1	EA	$2,079.58	$2,079.58
B10	#4 MILLENNIUM TRAIL CULVERT CROSSINGS - COMPLETE, 12" HDPE, 68'	1	EA	$3,392.54	$3,392.54
B11	#5 MILLENNIUM TRAIL CULVERT CROSSINGS - COMPLETE, 12" HDPE, 43'	1	EA	$2,159.16	$2,159.16
B12	#6 MILLENNIUM TRAIL CULVERT CROSSINGS - COMPLETE, 12" HDPE, 41'	1	EA	$2,129.72	$2,129.72
B13	#7 ETHEL'S LOOP TRAIL CULVERT CROSSINGS - COMPLETE, 12" HDPE, 30'	1	EA	$1,851.75	$1,851.75
B14	#8 ETHEL'S LOOP TRAIL CULVERT CROSSINGS - COMPLETE, 12" HDPE, 29'	1	EA	$1,865.55	$1,865.55
B15	#9 ETHEL'S LOOP TRAIL CULVERT CROSSINGS - COMPLETE, 12" HDPE, 35'	1	EA	$1,948.81	$1,948.81
B16	#10 ETHEL'S LOOP TRAIL CULVERT CROSSINGS - COMPLETE, 12" HDPE, 29'	1	EA	$1,865.55	$1,865.55
B17	#11 ETHEL'S LOOP TRAIL CULVERT CROSSINGS - COMPLETE, 12" HDPE, 31'	1	EA	$1,874.29	$1,874.29
B18	#12 ETHEL'S LOOP TRAIL CULVERT CROSSINGS - COMPLETE, 12" HDPE, 32'	1	EA	$1,881.19	$1,881.19
B19	#13 ETHEL'S LOOP TRAIL CULVERT CROSSINGS - COMPLETE, 12" HDPE, 29'	1	EA	$1,865.55	$1,865.55
B20	#14 ETHEL'S LOOP TRAIL CULVERT CROSSINGS - COMPLETE, 12" HDPE, 29'	1	EA	$1,865.55	$1,865.55
B21	#15 ETHEL'S LOOP TRAIL CULVERT CROSSINGS - COMPLETE, 12" HDPE, 29'	1	EA	$1,793.13	$1,793.13
B22	#16 PARKING LOT ENTRANCE CULVERT CROSSINGS - COMPLETE, 12" HDPE, 48'	1	EA	$2,199.97	$2,199.97
B23	DRAIN TILES, 4" PVC	12	EA	$1,041.87	$12,502.44
				TOTAL	$314,546.08

	BASE BID ITEMS	NO. OF UNITS	UNIT	UNIT PRICE	EXTENSION PRICE
C. UTILITIES					
C1	UTILITY SLEEVE, 1-1/2"	28	LF	$22,81	$638.68
				TOTAL	$638.68

	BASE BID ITEMS	NO. OF UNITS	UNIT	UNIT PRICE	EXTENSION PRICE
D. PAVEMENTS AND SURFACES					
D1	SUBGRADE PREPARATION	11,793	SY	$2.28	$26,888.04
D2	AGGREGATE BASE COURSE - CA-6, 5"	10,312	SY	$7.86	$81,052.32
D3	TEMPORARY AGGREGATE SURFACE COURSE-CA-6, 3"	170	SY	$2.58	$438.60
D4	AGGREGATE TRAIL SURFACE COURSE, 3"	9,473	SY	$5.22	$49,449.06
D5	AGGREGATE BASE COURSE - CA-6, 9"	1,305	SY	$11.91	$15,542.55
D6	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2 1/2"	1,236	SY	$13.17	$16,278.12
D7	BITUMINOUS MATERIALS PRIME COAT	1,236	SY	$0.51	$630.36
D8	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50, 1-1/2"	1,236	SY	$9.64	$11,915.04
D9	THERMOPLASTIC PAVEMENT MARKING - LINES, 6"	530	LF	$6.04	$3,201.20
D10	THERMOPLASTIC PAVEMENT MARKINGS - LETTERS AND SYMBOLS	1	LS	$603.72	$603.72
D11	CONCRETE PAVEMENT, 5"	1,420	SF	$6.56	$9,315.20
D12	AGGREGATE BASE COURSE (CONCRETE), CA-6, 5"	153	SY	$27.15	$4,153.95
D13	CONCRETE BARRIER CURB	104	LF	$26.65	$2,771.60
D14	CONCRETE DEPRESSED CURB	27	LF	$26.65	$719.55
				TOTAL	$222,959.31

	BASE BID ITEMS	NO. OF UNITS	UNIT	UNIT PRICE	EXTENSION PRICE
E. WALLS AND STAIRS					
E1	BOULDER RETAINING WALLS	800	FSF	$30.75	$24,600.00
				TOTAL	$24,600.00

	BASE BID ITEMS	NO. OF UNITS	UNIT	UNIT PRICE	EXTENSION PRICE
F. STRUCTURES					
F1	EVAPORATOR RESTROOM FACILITY	1	LS	$51,435.93	$51,435.93
				TOTAL	$51,435.93

	BASE BID ITEMS	NO. OF UNITS	UNIT	UNIT PRICE	EXTENSION PRICE
G. SITE AMENITIES					
G1	PERMANENT AND TEMPORARY SIGNAGE	5	EACH	$445.88	$2,229.40
G2	BOULDER SUPPLY AND INDIVIDUAL PLACEMENT	20	TON	$296.22	$5,924.40
				TOTAL	$8,153.80

	BASE BID ITEMS	NO. OF UNITS	UNIT	UNIT PRICE	EXTENSION PRICE
H. LANDSCAPE					
H1	HERBICIDE TREATMENT - GLYPHOSATE (ROUNDUP)	10	A	$346.45	$3,464.50
H2	HERBICIDE TREATMENT - CLOPYRALID (TRANSLINE)	10	A	$346.45	$3,464.50
H3	SEEDING - LCFP LOW MAINTENANCE MIX	10,184	SY	$0.41	$4,175.44
H4	SEEDING - LCFP PARKLAND MIX	1,067	SY	$0.72	$768.24
H5	SEEDING – LCFP COVER CROP MIX	41,375	SY	$0.31	$12,826.25
H6	SEEDING - LCFP BASIC PRAIRIE MIX	41,375	SY	$0.41	$16,963.75
H7	TURF MOWING	2.5	A	$232.68	$581.70
H8	EROSION CONTROL BLANKET	1,000	SY	$2.05	$2,050.00
H9	HYDROMULCH	52,626	SY	$0.82	$43,153.32
H10	FIELD MOWING	1	A	$227.55	$227.55
				TOTAL	$87,675.25

TOTAL BASE BID PRICE (SUM OF A THROUGH H)

Eight Hundred Twenty-Four Thousand Five Hundred Twenty-Two DOLLARS AND Forty-Five CENTS
(in writing)

$ 824,522. DOLLARS AND 45 CENTS
(in figures)

8. Progress Payments

A. General. Owner shall pay to Contractor ninety percent (90%) of the Value of Work determined the manner set forth below, installed and complete in place up to the day before the Pay Request, less the aggregate, of all previous Progress Payments. The total amount of Progress Payments made prior to Final Acceptance by Owner shall not exceed ninety percent (90%) of the Contract Price.

B. Value of Work. The Value of the Work shall be determined as follows:

(1) Unit Price Items. For all Work to be paid on a unit price basis, the value of such Work shall be determined by Owner on the basis of the actual number of acceptable units of Unit Price Items installed and complete in place, multiplied by the applicable Unit Price set forth in the Schedule of Prices. The actual number of acceptable units installed and complete in place shall be measured on the basis described in Attachment B to the Contract or, in the absence of such description, on the basis determined by Owner. The number of units of Unit Price Items stated in the Schedule of Prices are Owner's estimate only and shall not be used in establishing the Progress or Final Payments due Contractor. The Contract Price shall be adjusted to reflect the actual number of acceptable units of Unit Price Items installed and complete in place upon Final Acceptance.

C. Application of Payments. All Progress and Final Payments made by Owner to Contractor shall be applied to the payment or reimbursement of the costs with respect to which they were paid and shall not be applied to or used for any pre-existing or unrelated debt between Contractor and Owner or between Contractor and any third party.

9. Per Diem Administrative Charge

One Thousand Dollars ($ 1,000.00)

ATTACHMENT B
SPECIFICATIONS

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SECTION 01000

GENERAL PROJECT REQUIREMENTS

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. This Section includes:

1.02 Summary of the Work

1.03 Coordination and Meetings

1.04 Permits and Regulations

1.05 Plans and Specifications

1.06 Layout and Staking

1.07 Quality Assurance and Guarantee

1.08 Materials

1.09 Shop Drawings, Product Data and Samples

1.02 SUMMARY OF THE WORK

A. The Work to be performed under this Contract consists of the complete construction of Public Access Improvements in accordance with the Plans, Contract Documents and Specifications. The Work shall also meet the requirements of all permitting agencies. The Work generally includes, but is not limited to all labor, equipment, and materials to construct a 25-car asphalt parking lot with 125' entry drive and concrete sidewalks; approximately 1.4 miles of 10' and 12'-wide crushed stone trail; and installing one (1) prefabricated evaporator toilet building. This includes all associated demolition, grading, drainage, temporary access, erosion control, tree and shrub removal, seeding and other improvements.

B. Furnish all labor, materials, equipment, tools, and transportation which is reasonably and properly inferable and necessary for the proper completion of the Work, whether specifically indicated in this Contract or not.

C. Whenever the performance of work is indicated on the Plans or Contract Documents and no item is included in the Contract for payment, the work shall be considered incidental to the Contract, and additional compensation will not be allowed.

D. In addition, repair, replace, or otherwise settle with the Owner and/or any other affected property owners, any damage to property or existing facilities of any kind due to the actions of the Contractor.

E. The project shall be constructed under a Unit Price Contract.

1.03 COORDINATION AND MEETINGS

A. The Contractor shall be required to attend a pre-construction meeting prior to beginning the Work to review the Plans and Contract Documents, construction scheduling, personnel contacts, quality controls and to inspect the site. The

Contractor shall submit a schedule of construction within one week from the pre-construction meeting for approval by the Owner.

B. The Contractor shall communicate the work progress and upcoming project tasks to the Owner via phone or email at least every 48 hours. The Contractor shall also schedule on-site progress meetings at least once per week to review and coordinate the Work.

C. The Contractor shall become thoroughly familiar with the required Owner and permit agency inspections and promptly notify the respective parties before the required inspection is due. Failure to have the Work inspected as required may result in denial of payment for said Work.

D. The Contractor shall notify the Owner of any interruption or stoppage of work lasting two days or more before the work stoppage. The Contractor shall inform the Owner of all changes in the construction schedule as soon as they become apparent.

E. The Contractor shall be fully responsible for the coordination of its Work and the Work of its employees, subcontractors, and suppliers and to assure compliance with schedules. The Contractor is responsible for any and all coordination required for public and private utility compliance.

F. The Owner may have separate contracts in force at the same time and in the same areas as the Work. The Contractor shall coordinate the Work so as to not cause delays or obstructions or affect the quality of work by others and shall otherwise cooperate with others at the Work Site.

1.04 PERMITS, BONDS AND REGULATIONS

A. The Owner shall obtain, at its' expense, all required governmental permits as described in Attachment A of this Contract. All provisions and requirements contained in any and all required governmental permits associated with the Work are the responsibility of the Contractor and shall be considered to be part of this Contract. The Contractor shall be solely responsible for performing all Work in establishing and maintaining compliance with the same governmental permits.

B. The Contractor shall, at its' sole expense, procure and furnish all bonds and all certificates and policies of insurance required by all applicable permitting agencies. The Contractor shall obtain, at its' expense, all other required licenses, approvals and authorizations.

C. The Contractor shall comply with all state and federal safety regulations, as outlined in the latest revisions of the Federal Construction Safety Standards (Series 1926), and with applicable provisions and regulations of the Occupation Safety and Health Administrative (OSHA) standards of the Williams Stelger Occupational Health State Safety Act of 1970 (revised).

1.05 PLANS AND SPECIFICATIONS

A. Only complete sets of plans approved by the Owner and Engineer and specifically marked "FOR CONSTRUCTION" shall be used to construct the Work. Prior to bidding and commencement of construction, the Contractor shall verify all dimensions and conditions affecting their work with the actual conditions at the job site. If there are any discrepancies from what is shown on the Construction Plans, the Contractor must immediately report same to the Engineer before performing any

work; otherwise, the Contractor assumes full responsibility. In the event of disagreement between the Construction Plans, Specifications, and/or details, the Contractor shall secure written instructions from the Engineer prior to proceeding with any part of the work affected by omissions or discrepancies. Failing to secure such instruction, the Contractor shall be considered to have proceeded at his/her own risk and expense. In the event of any doubt or question arising with respect to the true meaning of the Plans or Specifications, the decision of the Engineer shall be final and conclusive.

B. The Contractor shall keep a set of approved plans and Contract Documents on the job and shall maintain a legible record on said plans of any changes, modifications, or alterations to the Work. Upon completion of the Contractor's work, said plans and information shall be provided to the Owner as the Record Drawings. Final Contract Payment shall not be made until the Record Drawings have been received by the Owner.

C. In the event of a conflict between any provision in any of the following component parts of these Contract Documents, the provision in the component part first listed below shall govern over any other component part which follows it, except as may otherwise specifically stated. Said component parts are the following:

1. Plans
2. Addendum to the Specifications
3. Special Provisions
4. Specifications

D. All work shall conform to the following Standard Specifications:

1. "Standard Specifications for Road and Bridge Construction in Illinois," as prepared by the Illinois Department of Transportation, April 2016 or later, hereinafter referred to as the "IDOT Standard Specifications."
2. "Standard Specifications for Water and Sewer main Construction in Illinois," latest edition, shall govern all water and sewer main construction.
3. "Standard Specifications for Traffic Control Items," latest edition, as published by the Illinois Department of Transportation.
4. "Manual for Uniform Traffic Control Devices" (MUTCD) by the Federal Highways Administration, latest edition.
5. "Illinois Urban Manual," latest edition as prepared for the Illinois Environmental Protection Agency by the NRCS.

E. Any reference to published specifications or standards of any organization or association shall comply with the requirements of the specification or standard which is current on the date of the Advertisement for Bids. In case of a conflict between the referenced specifications or standards, the one having the more stringent requirements shall govern. In case of conflict between the referenced specifications or standards and this Contract, this Contract shall govern.

F. Abbreviations

1. The following are definitions of abbreviations that may be used in this Contract:

a.	AA	-	Aluminum Association
b.	AASHTO	-	American Association of State Highway and Transportation Officials
c.	ACI	-	American Concrete Institute
d.	ANSI	-	American National Standard Institute
e.	ASTM	-	American Society for Testing and Materials
f.	AWS	-	American Welding Society
g.	AWWA	-	American Water Works Association
h.	CRSI	-	Concrete Reinforcing Steel Institute
i.	FS	-	Federal Specifications
j.	NEC	-	National Electrical Code
k.	NECA	-	National Electrical Contractors Association
l.	NEMA	-	National Electrical Manufacturer's Association
m.	NSF	-	National Science Foundation
n.	OSHA	-	U.S. Department of Labor, Occupational Safety and Health Administration
o.	PS	-	United States Products Standards
p.	STD.SPEC.	-	Applicable State Department of Transportation Standard Specifications for Road and Bridge Construction
q.	SSPC	-	Structural Steel Painting Council
r.	UL	-	Underwriter's Laboratories, Inc.

1.06 LAYOUT AND STAKING

A. Only the Owner or Engineer shall provide the approved horizontal and vertical control data for use in constructing the Work. Control data, benchmarks and other data for construction purposes may be provided by the Owner or Engineer in digital format for use by the Contractor. Use of control data and points at the site other than that which has been approved by the Owner or Engineer to construct the Work may result in that Work to be rejected and all related payment denied.

B. The Owner or Engineer may have performed staking for trail alignments or other improvements for pre-construction purposes such as vegetation clearing and / or alignment testing. The Contractor may utilize these points for construction with approval of the Owner or Engineer. Otherwise, the Contractor shall be responsible for providing and maintaining all layout and staking for the improvements specified. All layout shall utilize either traditional electronic survey equipment (total station, etc.) or GPS and shall be accurate in both the horizontal and vertical planes to +/- one tenth (.1) of a foot. Only a qualified Registered Land Surveyor (RLS) or a person trained under a RLS shall be utilized to provide construction staking.

C. The Owner shall retain the right to review and inspect any layout and staking before commencement of the Work if so requested beforehand by the Owner.

1.07 QUALITY ASSURANCE AND GUARANTEE

A. Before acceptance and final payment by the Owner, all work shall be quantified, inspected and approved by the Owner. Final payment shall be made after all of the Work has been approved and accepted, and in accordance with the Contract Documents.

B. After final acceptance by the Owner and all applicable government permitting agencies, all Work performed under this Contract shall be guaranteed against defects in materials and workmanship of any nature for a period of 12 months by the Contractor and his/her surety.

C. Special attention is drawn to Article 105.06 of the IDOT Standard Specifications, which requires the Contractor to have a competent superintendent on the project site at all times, irrespective of the amount of work sublet. The superintendent shall be capable of reading and understanding the plans and specifications, shall have full authority to execute orders to expedite the project, and shall be responsible for scheduling and have control of all work as the agent of the Contractor. Failure to comply with this provision will result in a suspension of work.

D. The work described in this contract requires specialized knowledge, experience, skills and equipment to successfully complete. The Contractor shall possess the full capability to execute the work as specified, including trained, experienced and skilled personnel and possession or access to the required equipment.

E. The Engineer and Owner are not responsible for the construction means, methods, techniques, sequences or procedures, time of performance, programs or for any safety precautions used by Contractor. The Contractor is solely responsible for execution of his/her work, in accordance with the Contract.

F. The Contractor shall indemnify the Engineer, their agents, the Owner and it's agents and all applicable permit agencies (as required) from all liability involved in the construction, installation and testing of the Work and name them as additionally insured.

1.08 MATERIALS

A. General

1. The source of materials to be used shall be in accordance with the Contract Documents and as approved by the Owner before delivery. The approval of the source of any material shall continue as long as the material conforms to the Specifications.

2. All material not conforming to the requirements of the Specifications shall be considered as defective and shall be removed from the Work. If in place, faulty materials shall be removed by Contractor at its expense and replaced with acceptable material unless permitted otherwise by the Owner. No defective materials that have been subsequently corrected shall be reused until approval has been given.

3. Upon failure of Contractor to comply immediately with any order of the Owner to remove and replace defective material, the Owner shall have authority to remove and replace defective materials, and to deduct the cost of removal and replacement from any monies due or to become due to Contractor. Failure to reject any defective materials or Work at the time of installation shall in no way prevent later rejection when such defects are discovered, nor obligate the Owner to issue its final acceptance.

B. Manufactured materials and products shall be delivered to the work site as needed for installation, undamaged, in original packages, containers, or bundles, as packaged by the manufacturer with manufacturer's name, brand, seals, and labels intact.

C. Contractor shall be responsible for protection and preservation of all materials until final payment.

D. Contractor shall provide temporary protection of the Work from damage by the elements and protect finished surfaces to prevent any damage resulting from the Work of any trade.

E. Substitutions and Product Options

1. The intent of these Specifications is to provide the Owner with a high quality project without discouraging competitive bidding. Substitutions may be submitted and will be evaluated as specified herein.

2. For products specified by reference standards only, Contractor may provide a product complying with the specified standard with proof of compliance.

3. For products specified by performance and descriptive methods, without naming manufacturer's products, Contractor may provide the products of any manufacturer complying with the Contract Documents, subject to the review of product data and approval by the Owner as specified herein.

4. For products specified by naming one or more manufacturer's products followed by the words "or approved equal", Contractor may provide any of the named products or may submit a product by another manufacturer as an equal for the review and approval by the Owner as specified herein and subject to conditions specified elsewhere. If requirements are specified in addition to naming manufacturer's products, any product provided must comply with all of the specified requirements.

5. If Contractor wishes to provide a product other than one named in the Specifications, Contractor shall submit sufficient information to the Owner for evaluation and determination of acceptability of the product prior to purchase and delivery of the product. Contractor is responsible for obtaining information required by the Owner for the evaluation of products. The Owner is responsible for determination of the equality of products, and Owner's decision shall be final, except as otherwise provided by Law.

6. The substitution requirements of this Section are in addition to the requirements of the General Conditions and Supplementary Conditions.

1.09 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

A. Descriptions

1. Shop Drawings

a. Shop Drawings are original drawings, prepared by a contractor, subcontractor, supplier, manufacturer or distributor, which illustrates some portion of the Work; showing type, quantity and size, fabrication, layout, setting, and/or erection details.

b. Shop Drawings shall be prepared by a qualified detailer and shall be identified by reference to sheet and detail numbers on the Plans. Reproductions for submittal shall be full size prints.

2. Product Data

a. Product data are manufacturer's standard schematic drawings, catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data.

b. Standard drawings shall be modified to delete information that is not applicable to the Work and supplemented to provide additional information applicable to the Work.

c. Catalog sheets, brochures, etc., shall be clearly marked to identify pertinent materials, products, or models.

3. Samples are physical examples to illustrate materials, equipment, or workmanship and to establish standards by which Work is to be evaluated.

B. Contractor's Responsibilities

1. Prior to submission, the Contractor shall thoroughly check shop drawings, product data, and samples for completeness and for compliance with the Contract Documents and shall verify all quantities, dimensions and field conditions and shall coordinate the shop drawings with the requirements for other related Work.

2. The Contractor's responsibility for errors and omissions in submittals is not relieved by the Engineer/Owner's review of submittals.

3. The Contractor shall notify the Engineer/Owner, in writing at the time of submission, of deviations in submittals from the requirements of the Contract Documents. Contractor's responsibility for deviations in submittals from the requirements of the Contract Documents is not relieved by the Engineer/Owner's review of submittals, unless the Engineer/Owner gives written acceptance of specific deviations.

4. Begin no Work that requires submittals until return of submittals with the Engineer/Owner's stamp and initials or signature indicating the submittal has been reviewed.

5. Prompt delivery and removal of all sample materials to and from the project site shall be the responsibility of the contractor.

C. Submission Requirements and Engineer/Owner's Review

1. The Owner and Engineer will each retain one copy of approved shop drawings and product data. Submit two (2) plus the desired amount of return copies to the Engineer/Owner for review. Submit the number of samples indicated in the individual Specification Sections.

2. Shop drawings, product data, and samples shall be submitted by Contractor to the Engineer/Owner. Submittals shall be properly identified with the name of the Contract, dated, and each lot submitted shall be accompanied by a letter of transmittal referring to the name of the Work and to the Specification page number and/or Contract Drawing number for identification of each item. Submittals for each type of Work shall be numbered consecutively, and the numbering system shall be retained throughout all revisions.

3. Submittals shall bear Contractor's stamp of approval certifying that they have been checked. Submittals without Contractor's initialed or signed certification stamp and submittals which, in the Engineer/Owner's opinion are incomplete contain errors or have not been properly checked, will be returned unchecked by the Engineer/Owner for resubmission.

4. At the time of each submission, Contractor shall give the Engineer/Owner specific written notice of each variation that the shop drawings or samples may have from the requirements of the Contract Documents and shall cause a specific notation to be made on each shop drawing submitted of each such variation.

5. The Engineer/Owner will review submittals with reasonable promptness. The Engineer/Owner's review of submittals shall not be construed as a complete check, and shall not relieve Contractor from responsibility for complete compliance with the Contract requirements. The Engineer/Owner's review will be only for conformance with the design concept of the Work and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction (except where a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review of a separate item as such will not indicate approval of the assembly in which the item functions. No corrections, changes, or deviations indicated on submittals reviewed by the Engineer/Owner shall be considered as a Change Order.

6. Contractor shall make corrections required by the Engineer/Owner and shall return the required number of corrected copies of shop drawings for review. Contractor shall direct specific attention in writing to revisions other than the corrections called for by the Engineer/Owner on previous submittals.

7. In the event a third submittal is required, due to previous submittals of incomplete or incorrect data or not in compliance with the Contract Documents, the Contractor will be charged one-half of the cost incurred by the Owner or Engineer for the review of the third submittal. The Contractor shall bear the total cost incurred by the Engineer for all subsequent reviews.

The costs charged to the Contractor will be at the cost plus rate generally charged by the Engineer and will be deducted by the Owner from payments due to the Contractor.

8. Distribution of copies of acceptable submittals will be as mutually determined by Contractor, Owner, and Engineer on an individual item basis during or following the preconstruction conference.

END OF SECTION 01000

SECTION 01010

MEASUREMENT AND PAYMENT

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. All applications for payment shall be with the Owners approved forms, completed, signed and notarized by the Contractor. The Owner may request additional backing documents, spreadsheets, delivery tickets, or other proof or measurement of the work being billed.

B. Payment for all work done in compliance with the Contract, inclusive of furnishing all manpower, equipment, materials and performance of all operations relative to construction of this Project, will be made under the Payment Items listed in Part 2 of this Section 01010. Incidental work required by the Contract for which there is no specific Payment Item is still required to be performed and no additional compensation will be allowed for such work.

C Quantities necessary to complete the work as shown in Attachment A to the Contract shall govern over those estimated in the Bidder's Proposal. The Contractor shall take no advantage of any apparent error or omission in the Plans or Specifications, and the Owner shall be permitted to make corrections and interpretations as may be deemed necessary for fulfillment of the intent of the Contract.

D. All work shall be completed per the Contract Documents. Where shown, references to specific Sections of the specifications and/or Sheets in the plans should be consulted to determine the full scope of the work.

E. All measurement and payment provisions of the IDOT Standard Specifications are deleted.

F. The Subsections in Part 2 below describe the measurement of and payment for the Work to be completed under the Contract Unit Price Items listed in the Schedule of Prices

2. MEASUREMENT AND PAYMENT

2.01 MOBILIZATION AND TEMPORARY SITE ACCESS

A. Measurement

1. This work shall not be measured for payment but shall be paid for according to the following schedule. The amount which a Contractor shall be paid for mobilization under the schedule below is limited to three percent (3%) of the original contract amount. Should the bid for mobilization exceed three percent, the amount over three percent shall not be paid until the final pay application.

    a. Upon execution of the contract, fifty percent (50%) of the pay item may be paid.

    b. When ten percent (10%) of the original contract amount has been earned, an additional forty percent (40%) may be paid.

c. Upon completion of the contract, the remaining ten percent (10%) of the pay item may be paid, along with any amount in excess of the three percent of the original contract amount. Specifications are included in Section 02100.

B. Payment

1. This work shall be paid for at the contract unit price of Lump Sum for MOBILIZATION AND TEMPORARY SITE ACCESS.

2.02 STABILIZED CONSTRUCTION ENTRANCE

A. Measurement

1. This work shall be measured for payment as counted individually in place, complete per the Contract Documents. Specifications are included in Section 02100. Fifty percent (50%) of the pay item shall be paid out upon installation of the stabilized entry. Final payment shall be made upon Owners' final approval of each restored entrance location.

B. Payment

1. This work shall be paid for at the contract unit price Per Each for STABILIZED CONSTRUCTION ENTRANCE.

2.03 TEMPORARY CULVERTS AND CROSSINGS

A. Measurement

1. This work shall not be measured for payment but will be considered complete upon final approval by the Owner per the Contract Documents. Specifications are included in Section 02100. Fifty percent (50%) of the pay item shall be paid out upon installation of the culvert. Final payment shall be made upon Owners' final approval of each restored culvert location.

B. Payment

1. This work shall be paid for at the contract unit price per Each for TEMPORARY CULVERT.

2.04 TEMPORARY CONSTRUCTION FENCE, 4'

A. Measurement

1. This work shall be measured for payment in place in lineal feet, complete per the Contract Documents. Specifications are included in Section 02300.

B. Payment

1. This work shall be paid for at the contract unit price per Lineal Foot for TEMPORARY CONSTRUCTION FENCE, 4'.

2.05 SILT FENCE

A. Measurement

1. This work shall be measured for payment in place in lineal feet, complete per the Contract Documents. Specifications are included in Section 02400. Seventy percent (70%) of the pay item shall be paid out upon installation of the silt fence. Final payment shall be made upon Owners' final approval of the removed silt fence and restoration of the work areas.

B. Payment

1. This work shall be paid for at the contract unit price per Lineal Feet for SILT FENCE.

2.06 FILTER SOCK

A. Measurement

1. This work shall be measured for payment in place in lineal feet, for the installation, maintenance and removal of the filter sock, complete per the Contract Documents. Specifications are included in Section 02400. Seventy percent (70%) of the pay item shall be paid out upon installation of the filter sock. Final payment shall be made upon Owners' final approval of the removed filter sock.

B. Payment

1. This work shall be paid for at the contract unit price per Lineal Feet for FILTER SOCK.

2.7 TEMPORARY DITCH CHECK

A. Measurement

1. This work shall be measured for payment as counted in place per each location which shall consist of two units at 7' in length each and complete per the Contract Documents. Specifications are included in Section 02400.

B. Payment

1. This work shall be paid for at the contract unit price per Each for TEMPORARY DITCH CHECK.

2.8 PERMEABLE PLASTIC DITCH CHECK

A. Measurement

1. This work shall be measured for payment as counted in place, complete per the Contract Documents. Each location shall consist of five (5) pieces at 3.3' per piece. Specifications are included in Section 02400.

B. Payment

1. This work shall be paid for at the contract unit price per Each for PERMEABLE PLASTIC DITCH CHECK.

2.9 COIR LOG

A. Measurement

1. This work shall be measured for payment in place per each, for the installation, maintenance and removal of the 10' long coir log, complete per the Contract Documents. Specifications are included in Section 02400.

B. Payment

1. This work shall be paid for at the contract unit price per Each for COIR LOG.

2.10 VEGETATION REMOVAL - COMPLETE

A. Measurement

1. This work shall not be measured for payment but will be considered complete upon final approval by the Owner and includes all vegetation cutting, processing and either chipping or burning as described in the Contract Documents. Specifications are included in Section 02500.

B. Payment

1. This work shall be paid for at the contract unit price per Lump Sum for VEGETATION REMOVAL - COMPLETE.

2.11 FIELD MOWING

A. Measurement

1. This work shall be measured for payment in acres or portions of acres complete per the Contract Documents. Specifications are included in Section 09310.

B. Payment

1. This work shall be paid for at the contract unit price per Acres for FIELD MOWING.

2.12 AGGREGATE REMOVAL AND DISPOSAL, 6" DEPTH

A. Measurement

1. This work shall be measured for payment in place in square yards, complete per the Contract Documents. Specifications are included in Section 02600.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yards for AGGREGATE REMOVAL AND DISPOSAL, 6" DEPTH.

2.13 REMOVE AND DISPOSE FENCE

A. Measurement

1. This work shall be measured for payment before removal in lineal feet, complete per the Contract Documents.

B. Payment

1. This work shall be paid for at the contract unit price per Lineal Feet for REMOVE AND DISPOSE FENCE.

2.14 SITE GRADING – COMPLETE

A. Measurement

1. This work shall not be measured for payment, but will be considered to be complete upon the Owners' approval and as indicated in the Contract Documents. Specifications are included in Section 03100.

B. Payment

1. This work shall be paid for at the contract unit price per Lump Sum for SITE GRADING – COMPLETE.

2.15 EXCAVATION OF UNSUITABLE MATERIALS

A. Measurement

1. This work shall be performed only upon the Owners' approval. This work shall be measured for payment in place in their original positions by means of topographic survey or by the method of average end areas and as per the Contract Documents. Specifications are included in Section 03110.

B. Payment

1. This work shall be paid for at the contract unit price per Cubic Yard for EXCAVATION OF UNSUITABLE MATERIALS. Any work performed without the Owners' approval may result in denial of payment.

2.16 GEOTEXTILE GROUND STABILIZATION

A. Measurement

1. This work shall be performed only upon the Owners' approval for areas of unsuitable materials. This work shall be measured for payment in place in square yards, complete per the Contract Documents. Specifications are included in Section 03110.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard for GEOTEXTILE GROUND STABILIZATION. Any work performed without the Owners' approval may result in denial of payment.

2.17 POROUS GRANULAR EMBANKMENT (PGE), CA-1

A. Measurement

1. This work shall be performed only upon the Owners' approval. This work shall be measured for payment in place in cubic yards, complete per the Contract Documents. Measurement shall be performed directly after excavation and before PGE has been installed. Specifications are included in Section 03110.

B. Payment

1. This work shall be paid for at the contract unit price per Cubic Yard for POROUS GRANULAR EMBANKMENT (PGE), CA-1. Any work performed without the Owners' approval may result in denial of payment.

2.18 TOPSOIL FURNISH AND PLACEMENT, (6")

A. Measurement

1. This work shall be measured for payment in place in square yards per the specified depth and as per the Contract Documents. Specifications are included in Section 03120.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard for TOPSOIL FURNISH AND PLACEMENT, (6")

2.19 FINISH GRADING

A. Measurement

1. This work shall be measured for payment in place in square yards, complete per the Contract Documents. Measurements for finish grading shall match total measurements for all seeding. Specifications are included in Section 03120.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard for FINISH GRADING.

2.20 CULVERT CROSSINGS – COMPLETE

A. Measurement

1. This work shall be measured for payment as counted in place, complete per the Contract Documents. Specifications are included in Section 03200.

B. Payment

1. This work shall be paid for at the contract unit price Per Each as listed individually in the Schedule of Prices for CULVERT CROSSING – COMPLETE.

2.21 DRAIN TILES, 4" PVC

A. Measurement

1. This work shall be measured for payment as counted in place for drainage and observation structures, complete per the Contract Documents. Specifications are included in Section 03300.

B. Payment

1. This work shall be paid for at the contract unit price per Each for Drain Tiles, 4" PVC.

2.22 UTILITY SLEEVE (1-1/2")

A. Measurement

1. This work shall be measured for payment in lineal feet, complete per the Contract Documents.

B. Payment

1. This work shall be paid for at the contract unit price per Lineal Feet for UTILITY SLEEVE (1-1/2").

2.23 SUBGRADE PREPARATION

A. Measurement

1. This work shall be measured for payment in place in square yards, complete per the Contract Documents. Measurements for length for trails shall be taken along the centerline of the trail. For trails the standard width measurement shall be one foot (1') greater than the specified finished trail width. For roads and parking areas, the measurements shall include an additional one foot (1') past the finished pavement edges along all perimeters of the pavement. Specifications are included in Section 05100.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard for SUBGRADE PREPARATION.

2.24 AGGREGATE BASE COURSE – CA-6, 5"

A. Measurement

1. This work shall be measured for payment in place in square yards, complete per the Contract Documents. Measurements for length shall be taken along the centerline of the trail. Measurements for width shall be one foot (1') greater than the finished width of the pavement. Specifications are included in Section 05200.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard for AGGREGATE BASE COURSE – CA-6, 5".

2.25 AGGREGATE TRAIL SURFACE COURSE – FA-21, 3"

A. Measurement

1. This work shall be measured for payment in place in square yards, complete per the Contract Documents. Measurements for length shall be taken along the centerline of the trail and the standard width shall not be measured but shall be per the Contract Documents. Specifications are included in Section 05200.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard for AGGREGATE SURFACE COURSE – FA-21, 3".

2.26 AGGREGATE BASE COURSE – CA-6, 9"

A. Measurement

1. This work shall be measured for payment in place in square yards, complete per the Contract Documents. For roads or other linear pavements the measurements for length shall be taken along the centerline and the width shall extend an additional one foot (1') from the finished edge of pavement at each side. At parking areas measurements for length and width shall be one foot (1') greater than the finished dimensions of the pavement. Specifications are included in Section 05300.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard for AGGREGATE BASE COURSE – CA-6, 9"

2.27 HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2 ½"

A. Measurement

1. This work shall be measured for payment in place in square yards, complete per the Contract Documents. Specifications are included in Section 05300.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard for HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50, 2 ½".

2.28 BITUMINOUS MATERIALS PRIME COAT

A. Measurement

1. This work shall be measured for payment in place in square yards, complete per the Contract Documents. Measurements for area shall equal that of the applicable Hot-Mix Asphalt Binder Course. Specifications are included in Section 05300.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard for BITUMINOUS MATERIALS PRIME COAT.

2.29 HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50, 1 ½"

A. Measurement

1. This work shall be measured for payment in place in square yards, complete per the Contract Documents. For trails, measurements for length shall be taken along the centerline of the trail and the standard width shall not be measured but shall be per the Contract Documents. Specifications are included in Section 05200 and 05300.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard for HOT-MIX ASPHALT SURFACE COURSE, 1 ½".

2.30 THERMOPLASTIC PAVEMENT MARKING - LINES, (6")

A. Measurement

1. This work shall be measured for payment in lineal feet per specified line width complete per the Contract Documents. Specifications are included in Section 05310.

B. Payment

1. This work shall be paid for at the contract unit price per Lineal Feet for THERMOPLASTIC PAVEMENT MARKINGS - LINES, (6").

2.31 THERMOPLASTIC PAVEMENT MARKINGS – LETTERS AND SYMBOLS

A. Measurement

1. This work shall not be measured for payment, but will be considered to be complete upon the Owners' approval and as per the Contract Documents. Specifications are included in Section 05310.

B. Payment

1. This work shall be paid for at the contract unit price per Lump Sum for THERMOPLASTIC PAVEMENT MARKINGS – LETTERS AND SYMBOLS.

2.32 CONCRETE PAVEMENT, 5"

A. Measurement

1. This work shall not be measured for payment, but shall be per the dimensions indicated in the Contract Documents. Specifications are included in Section 05400.

B. Payment

1. This work shall be paid for at the contract unit price per Square Feet for CONCRETE PAVEMENT, 5".

2.33 AGGREGATE BASE COURSE (CONCRETE) – CA-6, 5"

A. Measurement

1. This work shall be measured for payment in place in square yards, complete per the Contract Documents. Measurements for length and width shall be six inches (6") greater than the finished length and width of the pavement. Specifications are included in Section 05400.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard for AGGREGATE BASE COURSE (CONCRETE) – CA-6, 5".

2.34 CONCRETE BARRIER CURB AND CONCRETE DEPRESSED CURB

A. Measurement

1. This work shall be measured for payment in place in lineal feet, complete per the Contract Documents. Specifications are included in Section 05420.

B. Payment

1. This work shall be paid for at the contract unit price per Lineal Foot for CONCRETE BARRIER CURB AND CONCRETE DEPRESSED CURB

2.35 BOULDER RETAINING WALLS

A. Measurement

1. This work shall be measured for payment in place in face square feet, complete per the Contract Documents. Measurements for boulder retaining walls shall be actual lengths and corresponding heights as taken from the finished ground surface to the top of the wall. Specifications are included in Section 06100.

B. Payment

1. This work shall be paid for at the contract unit price per Face Square Feet for BOULDER RETAINING WALLS.

2.36 BOULDERS – SUPPLY AND INDIVIDUAL PLACEMENT

A. Measurement

1. This work shall be measured for payment in place in tons based on certified scale supplier load tickets, complete per the Contract Documents. Specifications are included in Section 06100.

B. Payment

1. This work shall be paid for at the contract unit price per Face Square Feet for BOULDER – INDIVIDUAL PLACEMENT.

2.37 EVAPORATOR RESTROOM FACILITY

A. Measurement

1. This work shall not be measured for payment, but will be considered to be complete upon the Owners' approval and as per the Contract Documents. Specifications are included in Section 07510.

B. Payment

1. This work shall be paid for at the contract unit price per Lump Sum for EVAPORATOR RESTROOM FACILITY.

2.38 HERBICIDE TREATMENT - GLYPHOSATE

A. Measurement

1. This work shall be measured for payment in place in acres or partial acres complete per the Contract Documents. Specifications are included in Section 09110.

B. Payment

1. This work shall be paid for at the contract unit price per Acre for HERBICIDE TREATMENT – GLYPHOSATE.

2.39 HERBICIDE TREATMENT – CLOPYRALID

A. Measurement

1. This work shall be measured for payment in place in acres or partial acres complete per the Contract Documents. Specifications are included in Section 09110.

B. Payment

1. This work shall be paid for at the contract unit price per Acre for HERBICIDE TREATMENT – CLOPYRALID.

2.40 SEEDING – LCFPD LOW-MAINTENANCE MIX

A. Measurement

1. This work shall be measured for payment in place in square yards, complete per the Contract Documents. Specifications are included in Section 09300.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard for LCFPD LOW-MAINTENANCE MIX.

2.41 SEEDING - LCFPD PARKLAND MIX

A. Measurement

1. This work shall be measured for payment in place in square yards, complete per the Contract Documents. Specifications are included in Section 09300.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard for LCFPD PARKLAND MIX.

2.42 TURF MOWING

A. Measurement

1. This work shall be measured for payment in place in square yards, complete per the Contract Documents. Specifications are included in Section 09300.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard for TURF MOWING.

2.43 FIELD MOWING

A. Measurement

1. This work shall be measured for payment in acres or portions of acres complete per the Contract Documents. Specifications are included in Section 09310.

B. Payment

1. This work shall be paid for at the contract unit price per Acres for FIELD MOWING.

2.44 SEEDING – LCFPD COVER CROP MIX

A. Measurement

1. This work shall be measured for payment in place in square yard, complete per the Contract Documents. Specifications are included in Section 09310.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard for COVER CROP MIX.

2.45 SEEDING – LCFPD BASIC PRAIRIE MIX

A. Measurement

1. This work shall be measured for payment in place in acres, complete per the Contract Documents. Specifications are included in Section 09310.

B. Payment

1. This work shall be paid for at the contract unit price per Acre for LCFPD BASIC PRAIRIE MIX.

3.46 HYDROMULCH

A. Measurement

1. This work shall be measured for payment in place in square yards, complete per the Contract Documents. Areas which receive erosion control blanket shall not be included in this measurement. Specifications are included in Section 09300.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard for HYDROMULCH.

3.47 EROSION CONTROL BLANKET

A. Measurement

1. This work shall be measured for payment in place in square yards, complete per the Contract Documents. Specifications are included in Section 09300.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard for EROSION CONTROL BLANKET.

END OF SECTION 01010

SECTION 02100

TEMPORARY ACCESS AND FACILITIES

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this Section includes:

1. Mobilization costs, temporary construction and facilities and transportation required to perform the permanent improvements.

B. Other specification sections which directly relate to the work of this section include, but are not limited to, the following:

1. Section 02200 – Temporary Traffic Control
2. Section 02300 – Site Resource Protection

C. The Contractor shall, at its' sole expense, procure and furnish all bonds required by other agencies and jurisdictions in order to access the work site.

2. PRODUCTS

2.01 STABILIZED CONSTRUCTION ENTRANCE

A. Aggregate shall be an angular crushed stone meeting the requirements of IDOT CA-1, also known locally as 3" Stone.

B. Geotextile fabric

1. Geotextile fabric shall be non-woven, needle punched polypropylene staple fiber that is UV stabilized and resistant to chemicals, mildew and insects.

2. The geotextile fabric shall be:

a. Thrace-LINQ GTF-225EX

b. or approved equivalent meeting the following criteria:

Grab Tensile Strength	215 lbs.
Elongation	50%
Puncture	600 lbs.
Permittivity	1.3 sec $^{-1}$

2.02 TEMPORARY CULVERTS AND CROSSINGS (IF REQUIRED)

A. Aggregate surface for temporary crossings shall meet the requirements of IDOT CA-1, locally known as 3" Stone.

B. Geotextile fabric shall be non-woven, needle punched polypropylene staple fiber that is UV stabilized and resistant to chemicals, mildew and insects such as:

1. Thrace-LINQ GTF-225EX

2. or approved equivalent meeting the following criteria:

Grab Tensile Strength	215 lbs.
Elongation	50%
Puncture	600 lbs.
Permittivity	1.3 sec^{-1}

C. Pipe size and type for temporary crossing shall be as indicated on the plans.

3. EXECUTION

3.01 SITE ACCESS AND CONSTRUCTION LIMITS

A. All site access shall be limited to the designated locations either shown on the plans or otherwise designated by the Owner. Under no circumstances shall the Contractor attempt to access the site from an unauthorized public right-of-way without expressed permission or permit from the Owner and the appropriate jurisdiction.

B. The Contractor shall work within construction limits as designated by the Owner. The Owner reserves the right to reduce construction limits to avoid damage to environmentally sensitive areas. Material storage and construction parking may occur only in those areas designated by the Owner. Do not unreasonably encumber the site with materials or equipment. All haul roads which are located outside of the immediate construction zone or shall impact the site in any way shall be approved by the Owner before put in use. All site impacts caused by material storage, access and transportation shall be restored to their original conditions as specified in this Contract.

C. When the project requires a specific construction sequence, the work shall follow construction sequencing as shown on the plans or otherwise indicated by the Owner and the Contractor shall not be allowed to begin work on the next project phase until the previous phase has been fully completed and approved by the Owner. Once a phase has been completed and approved, the Contractor shall completely barricade off the work area with 4-foot high orange construction fence to prevent construction traffic and the general public from entering completed phase. Any changes to the sequencing shown on the construction plans shall be approved in writing by the Owner.

D. This project is being constructed on public lands, and as such, portions of the site outside of the construction limits may remain open to the public. Under no circumstances shall the Contractor utilize any part of the site which is open to the public for any purpose without direct permission from the Owner.

E. All construction facilities and temporary controls shall be maintained in a secure, safe and useful condition until removed from the Work Site. The Contractor shall be solely responsible for any material losses due to vandalism, theft, weather occurrences or Acts of God. The Contractor shall provide a daily inspection of Work Area and shall take whatever measures are necessary to protect the safety of the public, workmen, and materials, and provide for the security of the Work Site, both day and night. Any and all security or construction fencing will be the responsibility of the Contractor. If present, the Contractor shall be responsible for locking and unlocking gates of the Owner.

3.02 UTILITIES

A. The Owner will not provide any utility services unless specifically authorized by the Owner. The Contractor shall provide and pay all costs for necessary temporary electrical, heat, and water. The Contractor shall provide water for all construction and testing purposes. The Contractor shall provide all temporary piping, hoses, etc., required to transport water to the point of usage.

3.03 MOBILIZATION AND TEMPORARY SITE ACCESS

A. When included in the Schedule of Prices, the Contractor shall be paid for indirect costs necessary to initiate and complete the Work. These costs may include mobilizing equipment and materials, temporary sanitary facilities, permit boxes, surveying, construction layout, temporary utilities, water sources, signage and other temporary indirect costs associated with the Work.

3.04 STABILIZED CONSTRUCTION ENTRANCE

A. Install stabilized construction entrance at the location indicated on the plans.

B. If the Contractor utilizes any other location(s) for construction access, a stabilized construction entrance must be installed where the construction entrance(s) access public right-of-ways, streets, or any paved surfaces. Any such additional construction entrances must be approved by the Owner, the jurisdictional authority and Designated Erosion Control Inspector (DECI). The cost of any additional construction entrances shall be based on the unit price established in the Schedule of Prices.

C. Aggregate must be underlain by the specified geotextile fabric in all areas; using full width rolls with end seams overlapped a minimum of 4 feet.

D. Any sediment reaching paved surfaces shall be removed immediately.

E. The Contractor shall maintain the stabilized construction entrance in good working condition, including but not limited to replacement of rock and removal of accumulated sediment, throughout the duration of the project until removal.

F. Stabilized construction entrance shall be removed by the Contractor at the end of the project or as otherwise directed by the DECI. Ground beneath stabilized construction entrance and any incidental disturbed areas shall be restored as per sections 03130 – Finish Grading and Topsoil and 09300 – Seeding.

3.05 TEMPORARY CULVERTS AND CROSSINGS (IF REQUIRED)

A. Install temporary culverts and crossings at the location(s) indicated on the plans.

B. Unless specifically detailed in the plans, the means and methods used to create temporary crossings shall be determined by the Contractor and approved by the Owner. The method chosen should provide a stable crossing with a minimum level of disturbance to the site. Timbers, temporary road mats or other methods which do not require filling may be used outside of drainage flows.

C. The contractor shall maintain temporary crossings in good working condition, including but not limited to the addition or replacement of aggregate, throughout the duration of the project until removal.

D. Temporary crossings shall be removed by the Contractor at the end of the project or as otherwise directed by the Owner.

3.06 TEMPORARY SANITARY FACILITIES

A. Provide temporary toilet facilities as required. Maintain these during the entire period of construction under this Contract for the use of all construction personnel on the job. Enough chemical toilets shall be provided to conveniently serve the needs of all personnel. Chemical toilets and their maintenance shall meet the requirements of State and Local Health Regulations and Ordinances.

3.07 PERMIT BOX

A. Provide permit box to safely store and protect required permit paperwork on site throughout the duration of construction. Permit paperwork to include Stormwater Pollution Prevention Plan (SWPPP), LCSMC Permit, and any other papers required by permitting agencies.

3.08 SITE RESTORATION

A. Areas disturbed during construction due to required stabilized entries, haul roads, staging areas, temporary crossings or other site access areas approved by the Owner shall be restored as directed by the Owner. This work shall be performed as per Sections 03120 – Finish Grading and Topsoil and 09300 – Seeding and measured for payment.

END OF SECTION 02100

SECTION 02300

SITE RESOURCE PROTECTION

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this Section includes:

1. Requirements for the preservation and protection of natural resources and man-made facilities at the work site and restrictions on construction impacts.

B. Other specification sections which directly relate to the work of this section include, but are not limited to, the following:

1. Section 02400 - Soil Erosion and Sediment Control
2. Section 02500 - Vegetation Removal
3. Section 03100 - Earthwork and Grading

2. PRODUCTS

2.01 TEMPORARY CONSTRUCTION FENCE

A. Fencing shall be heavy duty orange polyethylene or fabric fence, 48" in height. Steel posts shall be heavy duty "T" posts, 5' minimum in length. Wood posts shall be a minimum of 2" x 2" x 5' minimum in length.

2.02 TEMPORARY CHAIN LINK FENCE AND GATES

A. Chain link fence and gates shall consist of metal fabric with 0.148 diameter wire and woven on 2" spacing and meeting AASHTO M 181. Fence fabric shall be adequately supported and attached to metal rails and supports with steel or aluminum hog rings. Chain link fence shall be 6' in height. Chain link gates shall be 6' in height and 12' in length with hinge post bracing and support wheel. All fence and gates shall be supplied in excellent condition and free from torn, distorted or otherwise damaged fabric.

B. Metal posts, rail, braces and gate frames shall meet the requirements of AASTO M 181 and shall be provided as driven posts for open ground and / or with base supports for paved areas. Metal posts and support members shall be straight and free from defects.

3. EXECUTION

3.01 EXISTING FACILITIES

A. The Contractor shall be responsible for the care and protection of all existing buildings, structures, pavements, roadways, trails, fences, utilities and any other existing facilities or improvements on the work site, whether under the direct jurisdiction of the Owner or not.

B. With the exception of approved site access disturbances as described in Section 02100 – Temporary Site Access and Facilities, any damage to existing facilities shall be repaired or replaced to the satisfaction of the Owner or appropriate agency at no additional cost to the Owner. No additional compensation will be allowed under this Contract for the repair, replacement, or restoration of existing site elements as identified herein.

C. Upon completion of the Contract, any and all debris, construction materials, equipment or other items associated with the project shall be removed from the site. Any disturbed areas shall be fine graded to ensure positive drainage and seeded according to these specifications.

3.02. UTILITIES

A. Easements for existing utilities, both public and private, and utilities within public rights-of-way may be shown on the plans, according to available records. The Contractor shall be responsible for determining the exact location in the field of these utility lines and their protection from damage due to construction operations. If existing utility lines of any nature are encountered and found to conflict in location with new construction, the Contractor shall notify the Owner and utility company immediately so that the conflict may be resolved.

B. Electric, telephone, natural gas, and other utility companies may have underground and/or overhead service facilities in the vicinity of the proposed work. The Contractor shall be solely responsible for having the utility companies locate their facilities in the field prior to construction, and shall also be responsible for maintenance and preservation of these facilities. The Contractor shall call J.U.L.I.E. at (800) 892-0123 for utility locations at least 48 hours prior to start of construction. The Contractor shall coordinate construction operations and schedules with the utility companies to avoid potential conflicts and damages. No relocation of utility lines and/or structures may proceed unless specific written permission has been granted by the Owner and utility company.

C. Should any damages occur due to any action by the Contractor, repairs shall be made by the Contractor, at its expense, in a manner acceptable to the Owner and utility company.

3.03. DUST AND MUD CONTROL

A. Take all necessary precautions to control dust and mud associated with the Work of this Contract, subject to the approval of the Owner. In dry weather, spray dusty areas daily with water in order to control dust. Take necessary steps to prevent the tracking of mud onto adjacent streets and highways. If indicated on the plans or deemed necessary by the Owner, the Contractor shall provide and operate a wash station to clean equipment and vehicles before they access any pavement.

B. At a minimum, all streets and highways impacted by the construction shall be cleaned at the end of each working day using mechanical street sweeping equipment. If adequate precautions to control dust and mud are not taken by the Contractor, additional street sweeping shall be performed at the direction of the Owner and at no additional cost to the Owner.

C. If the Contractor does not take sufficient precautions in the opinion of the Owner to control dust and mud associated with the Work of this Contract, the Owner reserves the right to stop Contractor's Work without extension to the Contract until Contractor provides acceptable dust and mud control.

3.04 CONSTRUCTION NOISE

A. All engines and engine-driven equipment used for hauling or construction shall be equipped with an adequate muffler in constant operation and properly maintained to prevent excessive or unusual noise.

B. Any machine or device which is regulated by federal or State of Illinois noise standards shall conform to those standards.

C. When equipment noise is generated in a work area located near other jurisdictions or residential areas, the Contractor shall abide by the appropriate municipal ordinances regulating work hours for purposes of limiting construction noise

3.05 CONTAMINATION

A. The Contractor shall be solely responsible for the use, storage and transportation of any potential contaminants during the execution of the Contract. Fuels, oils, pesticides, chemicals or any other material that may cause harm to the site shall be cleaned, removed and disposed of according to local, state and federal guidelines. All equipment and vehicles shall be properly maintained to prevent contamination and shall be promptly removed from the site upon first evidence of leakage or spills. Under no circumstances shall fuels of any type be stored on the site.

B. If the Contractor does not take sufficient precautions in the opinion of the Owner to safeguard the site from contamination or adequately mitigate contaminant damage, the Owner reserves the right to stop the Contractor's work without extension to the Contract and remedy the contamination by other means, with the cost of any such work deducted from the Contract.

3.06 TEMPORARY CONSTRUCTION AND CHAIN LINK FENCE AND GATES

A. The Contractor shall erect the temporary fencing and / or gates at locations shown on the plans or as directed by the Owner. The Owner reserves the right to specify additional fencing installation locations not shown on the plans and/or to eliminate fence installation locations.

B. Steel fence posts shall be firmly driven into the ground and spaced to adequately support the fencing. The fencing shall be drawn tight to the posts and secured such that no sagging of the fencing may occur.

C. Temporary construction fencing shall remain in place and be properly maintained until final seeding and restoration is complete, unless directed otherwise by the Owner. Upon removal, all fencing materials shall be removed from the site.

3.07 NATURAL AND CULTURAL RESOURCE PROTECTION ZONES

A. Areas outside of the primary construction zone which are separated by temporary construction fence may be designated as Natural and/or Cultural Resource

Protection Zones. These areas contain trees, vegetation, soils and/or other sensitive resources. Access to these areas by foot, vehicle or other equipment for any purpose is strictly prohibited.

B. If at any time the Contractor believes that access to the Natural and Cultural Resource Protection Zone is necessary to accomplish the work, the Contractor shall immediately request a site inspection and meeting with the Owner to determine the course of action. The Contractor shall not initiate any work within the Natural Resource Protection Zone until receiving approval by the Owner and a determination of procedure and possible mitigation requirements.

3.08 TREE PRESERVATION

A. Prior to the start of construction, the Contractor shall meet with the Owner at the site to inspect the existing trees which are to remain and determine potential impacts that may be caused by construction activities. Overhanging branches and tree root zones shall be noted and if required, the method of pruning or other procedure shall be determined and approved by the Owner.

B. The Contractor shall not damage, cut, prune, transplant or remove any tree; attach any rope, wire, nail or other object to any tree; allow any gaseous, liquid or solid substance or equipment to contact any tree or the soil located within the drip line of any tree; impair normal surface drainage around any tree; allow any fire to burn which will injure any tree or act in any way to affect the vigor or appearance of any tree, except as such action is specifically authorized by the drawings for individually designated trees or groups of trees. Any necessary action by the Contractor that would affect trees, which have not been specifically designated, must be approved in advance by the Owner.

C. If during grading or other construction it becomes necessary to expose or sever tree roots, the Contractor shall cleanly cut such roots with a sharp saw, pruner, or power trencher so that ripping or tearing is avoided.

3.09 NATURAL AND CULTURAL RESOURCE DAMAGE OR LOSS AND OWNERS' COMPENSATION

A. The Contractor shall be liable for any damage or loss of any natural or cultural resource, including, but not limited to, trees, shrubs, herbaceous plants, soils, wetlands, streams, rivers, lakes, ponds, archeological sites or other natural habitat which is caused by the Contractor due to negligence or violation of any provision in these specifications. The Owner reserves the right to receive just compensation for any such damage or loss in a form acceptable to the Owner, including repair, restoration to original conditions, replacement of comparable kind and quantity or monetary restitution by contract amount adjustment or direct payment.

B. In the event that trees, shrubs or other plants are irreparably damaged or destroyed by actions of the Contractor as outlined above, the plant material shall be replaced by the Contractor with like kind, size and quantity at no cost to the Owner or shall reimburse the Owner by direct payment. In the event that a plant species is unavailable, the Owner shall determine a replacement species. In the event that a damaged or destroyed plant is large and/or irreplaceable in size, the plant shall be replaced by an equivalent quantity of smaller plants, i.e., a tree measuring 24" in

trunk diameter may be replaced with twelve (12) trees measuring 2" in trunk diameter. Replacement of all plant materials shall include the furnishing and planting of the materials with a one-year guarantee for subsequent replacement should the plant material fail to survive.

END OF SECTION 02300

SECTION 02400

SOIL EROSION AND SEDIMENT CONTROL

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this Section includes:

1. Provide all temporary soil erosion and sediment control measures as shown on the plans and as required by the project permits and applicable agencies during the life of the Contract.

B. Other specification sections which may directly relate to the work of this section include, but are not limited to, the following:

1. Section 02100 – Temporary Access and Facilities
2. Section 02300 – Site Resource Protection
3. Section 02500 – Vegetation Removal
4. Section 03100 – Earthwork and Grading
5. Section 03220 – Finish Grading and Topsoil
6. Section 09410 – Seeding

1.02 REGULATIONS, REQUIREMENTS AND INSPECTIONS

A. The Contractor shall comply with all project permits, regulations and applicable federal, state and local statutes relating to the prevention and abatement of soil erosion, sediment control and water pollution. The local permit authority is the Lake County Stormwater Management Commission, 500 West Winchester Road, Suite 201, Libertyville, IL 60048, (847) 337-7700.

B. In the event of conflict between the requirements of these specification and the pollution control laws, rules or regulations for federal, state or local agencies, the more restrictive laws, rules or regulations shall govern.

C. The Contractor must employ a Designated Erosion Control Inspector (DECI) as approved by the Lake County Stormwater Management Commission (LCSMC) for this project.

D. The Contractor/DECI shall be responsible for the oversight of all required soil erosion and sediment control regulations and measures as required by LCSMC, including inspections, recording and distribution of Field Observation Reports, and maintenance of the Storm Water Pollution Prevention Plan (SWPPP). Any fines or other penalties imposed by the governing agencies upon the Owner as a result of the Contractor's actions or inactions shall be the responsibility of the Contractor.

E. The DECI shall distribute all Field Observation Reports to the Contractor and the Owner within 48 hours of the report date, unless a violation is noted, upon which the LCSMC, Contractor and Owner shall be notified with 24 hours. Upon satisfactory completion of the construction and site stabilization, the DECI shall provide the Owner with a complete project history including reports.

1.03 COORDINATION WITH PERMANENT CONTROL FEATURES

A. The temporary control provisions contained herein shall be coordinated with permanent erosion control features to the extent practical to assure economical, effective and continuous soil erosion and sediment control throughout the construction and post construction period.

1.04 QUALITY ASSURANCE

A. Soil erosion and sediment control measures shall at all times meet the requirements of the applicable permits and regulations. Should the Contractor fail to meet these requirements or, in the opinion of the Owner, performs the requirements in an unsatisfactory manner, the Owner may suspend the performance of any or all construction until the unsatisfactory condition has been corrected. Such suspension shall not be the basis of any claim by the Contractor for additional compensations from the Owner nor for an extension of time to complete the Work.

1.05 REFERENCE DOCUMENTS

Utilize the latest versions of the following:

A. Guidance Manual – "Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices" (EPA 832-R-005).

B. Summary of Guidance Manual – "Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices" (EPA)

C. Lake County Stormwater Management Commission. Watershed Development Ordinance.

D. Illinois Urban Manual. USDA Natural Resources Conservation Service, Illinois Environmental Protection Agency

E. Standard Specification for Geotextile Specification for Highway Applications. AASHTO Designation: M 288-00.

2. PRODUCTS

Products which may be specified for this Contract include:

2.01 SILT FENCE

A. Silt fence shall be non-wire backed and meet the requirements of the Lake County Watershed Development Ordinance (AASHTO M288-00 specifications).

2.02 FILTER SOCK

A. Filter sock shall meet the requirements established by AASHTO, the US Army Corps of Engineers, the Natural Resource Conservation Service and / or the USEPA National Pollutant Discharge Elimination System.

2.03 TEMPORARY DITCH CHECKS

A. Temporary Ditch checks shall be Triangular Silt Dikes by the Triangular Silt Dike Company, www.tri-siltdike.com

B. or approved equal

2.04 PERMEABLE PLASTIC DITCH CHECKS

A. Permeable plastic ditch checks shall be GeoRidge® permeable plastic berms as manufactured by Nilex (www.nilex.com).

B. or approved equal

2.05 DRAIN INLET PROTECTION

A. Silt fence or filter sock meeting the material specifications of Section 2.01 or 2.02 above shall be installed and maintained at each culvert as specified.

B. or approved equal

2.06 DRAIN INLET FILTER

A. Drain inlet protection shall be Flexstorm Inlet Filter with standard zinc-plated framing and Type FX filter bag, as manufactured by Inlet and Pipe Protection, Inc., Naperville, IL, (866) 287-8655, flexstorminletfilters .com.

B. or approved equal

2.07 TEMPORARY SEED

A. Seed for temporary vegetative stabilization of stockpiles and other ungraded areas shall be 200 pounds per acre of Annual Rye Grass.

B. Hydromulch shall be

1. ProMatrix Engineered Fiber Matrix (EFM)

Profile Products
750 Lake-Cook Road, Suite 440
Buffalo Grove, IL 60089
www.profileproducts.com

2. or approved equal.

2.08 OTHER MATERIALS

A. All other materials necessary for soil erosion and sediment control requirements shall meet typical accepted industry standards and are subject to approval by the Owner.

3. EXECUTION

3.01 PRIOR TO CONSTRUCTION

A. Prior to the start of construction and installation of erosion and sediment control measures, an on-site preconstruction meeting must be held with the Contractor, DECI, Owner and LCSMC Enforcement Officer.

B. No soil disturbance shall be started until the LCSMC Enforcement Officer has inspected and accepted the soil erosion and sediment control measures.

C. Soil erosion and sediment control features shall be constructed prior to the commencement of site grading and/or hydrologic disturbance of upland areas.

3.02 GENERAL

A. Soil disturbance shall be conducted in such a manner as to minimize erosion. Soil stabilization measures shall consider the time of year, site conditions and the use of temporary or permanent measures.

B. Except as provided below, stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.

1. Where the initiation of stabilization measures by the 7th day after construction activity temporarily or permanently cease is precluded by snow cover, stabilization measures shall be initiated as soon as practicable.

2. When construction activity will resume on a portion of the site within 14 days from when activities ceased, (e.g. the total time period that construction activity is temporarily ceased is less than 14 days) then stabilization measures do not have to be initiated on that portion of the site by the 7th day after construction activity temporarily ceased.

C. Areas or embankments having slopes greater than or equal to 3:1 shall be stabilized with sod, turf reinforcement mat or erosion control blanket in combination with seeding.

D. Erosion control blanket shall be required on all interior detention basin side slopes between the normal water level and high water level.

E. All storm sewers that are, or will be, functioning during construction shall be protected by an appropriate sediment control measure.

F. All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization is achieved or after the temporary measures are no longer needed.

G. All temporary and permanent erosion control measures must be maintained and repaired as needed. The Contractor shall be ultimately responsible for maintenance and repair.

H. Soil stockpiles shall not be located in a flood-prone area or a designated wetland buffer.

I. If dewatering services are used, adjoining properties and discharge locations shall be protected from erosion. Discharges shall be routed through an effective sediment control measure (e.g. sediment trap, sediment basin, or other appropriate measure)

J. The erosion controls measures indicated on the plans are the minimum requirements. Additional measures may be required as directed by the DECI or Owner.

K. The methods and sequencing of vegetation removal shall be such as to minimize erosion.

L. Fills shall be placed and compacted in such a manner that soil sliding and erosion is minimized.

M. Excavation and earth fill shall be conducted in such a manner as not to divert water outside of the project limits, including onto adjoining property, without prior written permission from the Owner.

3.03 TEMPORARY SITE DRAINAGE

A. During construction operations, the Contractor shall ensure positive site drainage at the conclusion of each day. Site drainage may be achieved by ditching, pumping or other acceptable method. Contractor's failure to provide the above will preclude any possible added compensation requested due to delays or unsuitable materials created as a result thereof.

B. Whenever, during construction operations, any loose materials are deposited in the flow line of gutters, drainage structures, ditches, culverts, etc., such that the natural flow line of water is obstructed, this loose material shall be removed at the close of each working day by the responsible party. At the conclusion of construction operations, all drainage structures and flow lines shall be free from dirt and debris. This work shall be considered incidental to the Contract.

C. All field tile encountered during construction operations shall be connected to the proposed storm sewer or extended to outlet into a proposed drainage way. If this cannot be accomplished, then it shall be repaired with new pipe of similar size and material to the original line and put in acceptable operating condition. A record of the location of all field tile or on-site drain pipe encountered shall be kept by Contractor and turned over to the Owner upon completion of the project. The cost of this work shall be considered as incidental to the Contract and no additional compensation will be allowed.

3.04 SILT FENCE

A. Install silt fence at the locations shown on the plans and as directed by the DECI, governing agency or Owner.

B. Silt fence shall be installed as per AASHTO M288-00 and as shown on the plans. Silt fence shall be static sliced or trenched in, backfilled and compacted.

C. Silt fence j-hooks shall be installed at locations where required. The ends of silt fence j-hooks shall have the ends at a higher elevation than the middle of the silt fence line to help prevent the "ending around" of stormwater.

D. Silt fence shall be inspected within 24 hours after rainfall events equal to or greater than 0.5" in 24 hours. Silt fence shall be maintained in an upright and good condition at all times. If the fabric or stakes become ineffective at any time, they shall be replaced immediately. Sediment shall be removed from silt fence when accumulation reaches one-half the height of the silt fence.

E. All silt fences shall be removed and properly disposed of after upslope areas have been stabilized unless directed otherwise by the DECI. All accumulated silt shall be removed and all remaining trenches shall be filled with either the excess silt or new pulverized topsoil. Areas disturbed by the removal of silt fence shall be graded, seeded and stabilized per Sections 03120 – Finish Grading and Topsoil and 09300 – Seeding.

3.05 FILTER SOCK

A. Install filter sock at the locations shown on the plans and as directed by the DECI, governing agency or Owner.

B. Filter sock shall be secured using 2" x 2" wood stakes driven into the ground a minimum 8" deep and located every ten feet of length. A single stake through the middle of the filter sock or two crossed stakes on either side of the filter sock may be used.

3.06 PERMEABLE PLASTIC DITCH CHECKS

A. Install permeable plastic ditch checks in conjunction with permanent stabilization and seeding and where indicated on the plans. Each ditch check location shall consist of five (5) units joined together for a total length of 16.5 feet unless physical restrictions are present, in which case the maximum number of units possible shall be installed.

B. The Contractor shall provide maintenance of the ditch checks including removal and disposal of any materials caught by the ditch checks. After final stabilization and removal of the ditch check, all accumulated silt shall be removed or respread, without interrupting drainage, and graded, seeded and stabilized.

C. The ditch checks shall remain in place until all contributing upslope areas and swales have been stabilized, at which time the ditch checks shall be removed by the Contractor.

3.07 DRAIN INLET PROTECTION

A. Install silt fence at proposed culvert locations according to the design plan details and manufacturer's recommendations and maintain all culvert protection through adequate cleaning.

3.08 DRAIN INLET FILTER

A. Install drain inlet filter according to the manufacturer's recommendations and maintain all inlet protection through adequate cleaning.

3.09 TEMPORARY SEEDING

A. Perform temporary seeding according to the time and schedule requirements above.

B. Sow seed at a rate of 200 lb. per acre, using a broadcast or hydroseeding method.

C. Apply hydromulch according to the requirements in Section 09300 – Turf Seeding.

END OF SECTION 02400

SECTION 02500

VEGETATION REMOVAL

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this section includes:

1. Removal of targeted trees, shrubs and other vegetation required for site development and / or site restoration.

2. Mowing of herbaceous and small woody plants.

B. Other specification sections which directly relate to the work of this section include, but are not limited to, the following:

1. Section 02100 Temporary Site Access

2. Section 02300 Site Resource Protection

3. Section 09110 – Herbicide Treatment

1.02 REFERENCE STANDARDS

A. Plant size designation and measurement shall be based on the latest edition of the American Standard for Nursery Stock. Tree sizing is stated in inches Diameter at Breast Height (DBH) unless otherwise indicated.

1.03 PREBID REVIEW

A. General information regarding the location and extent of vegetation removal requirements is shown on the plans. However, it is required that the Contractor, Subcontractor and / or clearing personnel conduct a thorough site inspection to determine the exact scope, location, timber density, species composition, site access limitations and preferred removal techniques for purposes of costing and planning the Work.

1.04 QUALITY ASSURANCE

A. The work described in this section requires specialized knowledge, experience, skills and equipment to perform successfully. The proposed work site is a forest preserve and may contain flora, fauna and / or soils which are highly sensitive to disturbance. Therefore, the contractor directly performing the work described in this Section shall possess the following qualifications:

1. The ability to identify all species of trees, shrubs and herbaceous plants typically found in Lake County. The ability to identify undesirable or weedy target species is of particular value.

2. The ability to safely and effectively cut, remove and process the target vegetation, including large trees measuring over 24" in diameter, using both

mechanical and hand techniques without damage to other desirable plants or the site in general.

3. Possession of, or the ability to acquire the specific types of equipment required to perform the work, including low-impact equipment.

4. The ability to safely manage vegetation burning, perform chipping operations and dispose of vegetation off site when required.

1.05 SUBMITTALS

A. The Owner reserves the right to approve the Contractor or Subcontractor who will be directly involved in performing the required work. This approval shall be dependent on the submittal to the Owner, at least fourteen (14) days prior to the start of work, of the following:

1. A list of five (5) projects similar in scope and size which have been satisfactorily completed in the past five (5) years that clearly demonstrate the ability to complete the work as specified. This submittal shall include the project name, project location, completion date, owners' name and contact information, size in acres and a detailed description of the work performed, including forest or landscape composition, removal techniques, equipment and herbicides used and any follow up work. In addition all projects listed must involve selective species removal and tree preservation. Clear cut projects shall not be acceptable as reference projects.

2. A list of all equipment proposed for use on the project, including type, make, model, year and Ground Pressure Rating (GPR) where applicable.

3. EXECUTION

3.01 GENERAL

A. Specific project requirements for vegetation removal are indicated on the plans. This information may include access routes, staging, storage and burn areas, restricted access areas, specific trees to be removed, tree protection fencing, required removal methods, equipment requirements, target species for removal, target species for preservation, herbicide applications, disposal methods, mowing instructions and other pertinent information.

B. A partial or complete tree survey indicating individual trees over six inches (6") in diameter DBH may or may not be shown on the plans, but no species list or tree size range is provided by the Owner. Unless noted otherwise, it is not the intent of the plans to locate and identify every tree or shrub on the site relative to the work described in this section. The Contractor shall determine the extent of work during the site inspection described above.

C. No mobilization or other work shall commence until a meeting with the Owner, Contractor and designated foreman is conducted on site. At this time the scope of work shall be reviewed and any specific field markings will be identified. The Contractor shall notify the Owner at least 24 hours before the start or restart of work.

D. All work must be conducted under the direct supervision of the original designated clearing foreman.

E. Additional information and instructions regarding the work may be conveyed by the Owner through markings in the field. This may include staking or flagging for removal limits, individual plants to be removed, individual plants to be girdled, root pruning lines, trees to be pruned, individual plants to be preserved, fencing layout, restricted access areas, haul routes and other specific requirements. Any damage or disturbance to construction staking shall be replaced by the Contractor.

F. The Contractor shall be responsible for positively identifying all woody species before they are cut, removed or treated with herbicide.

G. During the performance of the vegetation removal work, should any uncertainty arise regarding the removal of specific trees or other plants, the Contractor or clearing foreman shall immediately inform the Owner for a determination in the field.

H. Sites which contain areas sensitive to disturbance such as wetlands, rare plant species, sensitive root zones and / or sensitive soils may be off-limits to machine access. No clearing equipment shall enter these areas. Removals shall be performed by hand or by equipment that can be located outside of the protected area and reached via a boom.

I. The Contractor shall be solely responsible for the repair of any and all other damage to the Owner's property, including roads, trails, bridges, signs and other features.

J. Protection of public utilities in the performance of the work is the sole responsibility of the Contractor, and any damage shall be promptly reported to the appropriate local office. The Owner shall bear no responsibility in the costs of such repair.

K. After the site clearing and vegetation removal has been complete according to the conditions determined at the preconstruction site meeting, the Owner and Contractor shall meet for a final review of the work area. If the original contract terms have been satisfied and additional clearing or tree removal is requested by the Owner, the work shall be measured for additional payment.

3.02 SAFETY

A. It is the responsibility of the Contractor to perform the work according to the highest industry safety standards, the guidelines and requirements of the Occupational Safety and Health Administration (OSHA) and all other applicable local, state and federal requirements.

B. The work described herein is being performed on a public forest preserve and as such portions of the site may be either open to or generally accessible to the public. Extreme caution must be exercised when operating machinery or performing any tasks where there is the potential for personal injury. Special attention is called to operations which cause cut materials to be propelled into adjacent areas. When any cutting of material occurs within 300 feet of roads, trails or adjacent properties, the Contractor shall post signs at those areas to warn the public. When flying debris is likely to contact these areas, the Contractor shall post personnel to assure that access to the work zone is secured.

3.03 DAMAGE TO OR REMOVAL OF SPECIES TO BE PRESERVED

A. It is of utmost importance during selective removal operations that no individual plants of species to be preserved or otherwise identified as desirable to the Owner be damaged or destroyed. Should any such significant damage or unauthorized removal occur which causes a loss of property to the Owner, the Contractor shall be required to perform the following remediation:

1. Removal and disposal of significantly damaged plants at no additional cost to the Owner.

2. Replacement of lost plant material, in the form of new plant material at a replacement ratio of two inches (2") of replacement for each one inch (1") of plant material damaged or lost. The Owner shall determine or approve the species, source, size, quantity and planting locations of the replacement material before any replacement work is started. The Contractor shall obtain, plant, mulch, water and guarantee the planting for one year with no additional cost to the Owner.

3.04 SEASONAL RESTRICTIONS

A. Specific commencement and completion dates are stated in Attachment A of the Contract. Vegetation removal for development such as trails shall be scheduled to precede construction activities.

B. When sensitive soil conditions or root protection zones are identified, the Owner may restrict clearing equipment access until suitable frost conditions and / or snow cover is present. Restrictions may also be imposed when soil moisture levels are such that any equipment use may cause substantial ground disturbance. Other required work schedules may be indicated on the plans.

3.05 ROOT PROTECTION AND RESTRICTED ACCESS ZONES

A. The Owner may establish boundaries for areas that require a high level of protection from disturbance due to the presence of sensitive flora, fauna or cultural resources. Some of these areas may be restricted to foot traffic only and will require hand removal of vegetation. Other areas may be off-limits to all types of access. The Owner may fence these areas or otherwise indicate to the Contractor any such limitations.

3.06 VEGETATION REMOVAL AREAS

A. Vegetation Removal Areas may be identified in the plans for each project and each individual portion of the work zone when required. These areas shall be graphically indicated by line, symbol, shading or other method and represent the actual limits of vegetation removals. When individual trees or other plants are shown on the plans, they are shown to assist the contractor in evaluating the composition of the vegetation in the removal area and not as individual items for measurement and payment.

B. The Owner may further define the Vegetation Removal Areas by marking areas or individual plants in the field. These markings may include flagging, staking, painted markings or other indications to describe the work.

C. Access and haul routes, staging, chipping and loading areas and burn areas may be identified on the plans or in the field by the Owner.

D. Each Vegetation Removal Area shall include specific information and instructions that further define the required work. The information and instructions may include:

1. Approximate size of Vegetation Removal Area in acres
2. Removal of all woody vegetation
3. Removal of targeted species only
4. Removal of targeted species of specific sizes only
5. Removal of field marked trees
6. Removal of all non-native trees and shrubs
7. Removal of select native species
8. Girdle targeted or marked trees
9. Trees or species to be preserved ('Do Not Cut')
10. Stump grind all tree removals 6" DBH and larger
11. Removal of all existing fallen branches and logs
12. Hand or machine raking of all debris
13. Chip and remove all material from site
14. Chip and spread all material on site
15. Burn all cut material on site

3.07 VEGETATION REMOVAL PAY ITEMS DEFINED

A. Vegetation Removal – Complete

This pay item is defined as the cutting, gathering, hauling, processing and removal of trees, shrubs and other vegetation and other related specific requirements within a Vegetation Removal Area according to the plans. Payment for Vegetation Removal – Complete shall be as Lump Sum.

B. Tree Removal / Stump Grinding (6-15", 16-24", 25"+)

This pay item is used for measurement and payment of individual trees for removal and includes all hauling, disposal and stump grinding. This pay item shall not be used within Vegetation Removal Areas. When used as a Contingency Item, it shall only be payable when the work is requested by the Owner. Payment for this item shall be per Each.

C. Tree Root Pruning

This pay item shall include the mechanical and hand pruning of tree roots as marked in the field by the Owner. Payment for this item shall be per Lineal Feet.

D. Tree Branch Pruning (6-12", 13-24")

This pay item shall include the cutting and removal of individual branches in the branch sizing listed above as directed by the Owner. Any branches cut or trees pruned by the Contractor for purposes of access to work areas shall not be counted. Payment for this item shall be per each branch cut, including disposal, and shall be approved and counted before cutting.

E. Field Mowing

This pay item shall include the mowing of herbaceous and minor woody plant material in a single pass. Additional passes for the purpose of reducing debris volume shall be paid as an additional mowing. Payment for this item shall be per acre or parts of acres.

3.08 HAND CUTTING AND REMOVAL

A. Hand removal is defined as those removals performed without any wheeled or tracked ground equipment and performed with chainsaws, hand saws and pruning tools. Hand removal shall be indicated in the plans for areas sensitive to ground disturbance by heavy equipment.

3.09 MACHINE TREE MOWING

A. Machine mowing is defined as the removal of woody plant material with a trunk diameter generally of six inches (6") or less DBH and similar sized shrubs using a forestry mower attachment of varying types, including rotating drum, tree shear, deck mowers and brush mulchers.

3.10 MACHINE TREE REMOVAL

A. Machine tree removal is defined as the removal of any trees with various machinery larger than forestry mowers. This work may be performed with a feller buncher or similar boom or arm mounted cutter / grapple which allows minimum ground movement to reach, cut and remove individual trees. The primary operating equipment shall be an excavator or similar machine with rubber tracks and a ground pressure rating of 9.0 PSI or less. Access routes and movement around desirable trees with large equipment shall be carefully planned to avoid unnecessary ground disturbance.

3.11 CUT TREE HANDLING

A. Cut tree handling is defined as the movement of cut materials from the point of origin to staging, loading, chipping or burn areas. Equipment such as skidders and forwarders shall be utilized in designated haul routes and not in root protection zones, areas contained by temporary tree protection fencing or other sensitive areas.

3.12 GIRDLING

A. Girdling is defined as the cutting and complete removal of a tree's bark including cork cambium, phloem and cambium around the entire circumference of the trunk such that the tree is caused to die. Some trees larger than 12" DBH may be girdled if not adjacent to property boundaries, roadways, trails, or other assets and only if marked by the Owner. All trees designated for girdling shall be double cut. Cuts shall be made approximately 8-10 inches apart, parallel to each other and horizontal to the ground surface. Girdling cuts shall not be made higher than 3 feet above the ground surface.

3.13 STUMP GRINDING

A. When required, machine stump grinding shall be performed on trees 6" DBH and larger. Stump grinding shall not be performed in areas contained by temporary tree protection fencing or other sensitive areas designated by the Owner. The Contractor shall be aware of the presence of roads, trails or other public areas where stump grinding operations may pose a hazard. Appropriate warning signs or additional personnel shall be posted in areas subject to pedestrian traffic. Should the chipping operations pose a risk to any persons nearby, the operation shall be halted until safe conditions resume.

3.14 DEBRIS RAKING AND REMOVAL

A. Debris raking is defined as the removal of all small loose vegetative matter such as leaves, twigs, bark, and small branches for purposes of exposing the soil surface for seeding purposes.

B. Unless included in Vegetation Removal – Complete, Debris Raking and Removal may be separately specified on the plans or requested by the Owner. The pay item for this work shall be paid per acre.

3.15 ROOT PRUNING

A. Root pruning shall be performed at the locations shown on the plans or as marked in the field. Root pruning shall be performed with a mechanical trenching machine to a depth of 24". After trenching, any torn roots or those over 1' in diameter shall be hand pruned to a smooth cut.

3.16 HERBACEOUS FIELD MOWING

A. Field mowing is defined as the mechanical cutting of primarily herbaceous material in open fields or lightly wooded areas. Areas designated for field mowing shall be cut to 6" or less in height with a tractor-mounted mowing deck. When mowed debris is excessive, the Owner may request additional mowings to reduce the size of the debris.

B. All mowing equipment (tractors, mowers, etc.) used in the work shall be thoroughly cleaned after the completion of mowing work at a particular site, and prior to beginning the work on the next site in order to prevent the transfer of weed seeds and invasive plants from one site to another.

3.17 PROCESSING, REMOVAL AND DISPOSAL OF CUT MATERIAL

A. BRUSH CHIPPING AND GRINDING

1. Brush chipping locations shall be approved by the Owner prior to the start of work. The locations shall allow the hauling of brush to the chipper without creating excessive ground damage to the site and shall be accessible by haul trucks should removal from the site be required. Chipping operations shall be located such that there is no risk to the public from flying debris or other safety concerns.

2. Unless designated otherwise by the Owner, all chipped material shall be loaded and hauled off site. The loading and hauling operations shall be performed such that no excessive ground damage occurs to the site. When chipped material is

approved by the Owner to remain on site, it shall be spread in layers of no more than 2" deep and only at locations identified by the Owner.

3. When brush chipping is required, larger logs or other material not suitable for chipping shall be loaded and hauled from the site.

B. BURNING

1. Burning cut vegetation is only allowed if specifically stated in the plans.

2. Brush piles and burning locations shall be constructed within the project boundaries in areas designated by the Owner. Brush piles will be constructed in areas where low ground fuel levels exist, soil is bare or there is sparse leaf litter and at least 200 feet from adjacent properties, trails, parking areas, roads, sensitive ecological features and any other area where safety is a concern. Brush piles will be constructed at least 50' from any standing dead trees or snags and shall not be located under existing live trees.

3. Brush piles shall be of a size and density to effectively accomplish ignition and consumption of the burn material. Cut branches shall generally be less than 15' in length. Piles should be no more than 10' high, 30' in diameter and stacked in a parallel manner with smaller material placed at the bottom of the pile and larger material placed at the top so that so compression occurs as the pile is built.

4. The Contractor shall have on site at all times appropriate protective and fire control equipment such as water tanks, back pack pumpers and hand tools to manage the brush piles during ignition, burning, and clean up. During all burning operations, the Contractor shall have a first aid kit, portable eye wash station, chemical spill kit and a working cell phone on site for communication with the Owner and local fire departments.

5. Brush piles shall be ignited only when prevailing winds are between 5 and 25 mph and Relative Humidity is greater than 35% unless otherwise approved by the Owner. Ignition and burning may commence only upon the approval of the Owner.

6. The Contractor shall continually monitor the burn piles to assure that fire and smoke hazards, loss of property or ecological habitat does not occur and that the safety of the public is protected at all times. Material which has been adequately burned should be raked inward as the burn pile decreases in size. The burn piles shall be monitored by the Contractor until the all brush fuel is consumed and the remaining ashes are cool to the touch. Ash piles shall be raked out evenly. In the event that the fire or associated smoke creates a safety hazard, the Contractor shall immediately reduce or extinguish the burn pile to eliminate the hazard. Should loss of control of the fire occur, the Contractor shall immediately contact the appropriate fire department or 911 and the Owner.

7. The Owner shall secure an Illinois Environmental Protection Agency Open Burning Permit and a list of the appropriate contact agencies and phone numbers for the site. The Contractor shall notify the required agencies by telephone on a daily basis prior to ignition. The authority of the local fire

departments supersedes that of the Owner and Contractor in regards to ignition and burning of all brush piles.

END OF SECTION 02500

SECTION 02600

DEMOLITION AND REMOVALS

Revised / reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this section includes:

1. Removal of pavement, structures and other items as indicated on the plans.

B. Other specification sections which directly relate to the work of this section include, but are not limited to, the following:

1. Section 02300 – Site Resource Protection
2. Section 02400 – Soil Erosion and Sediment Control
3. Section 02500 – Vegetation Removal
4. Section 03110 – Ground Stabilization
5. Section 03120 – Finish Grading and Topsoil
6. Section 09300 – Seeding

C. Laws and Regulations

1. The Contractor shall conform to applicable laws and regulations that pertain to the work of this section.
2. The Contractor shall obtain required permits and licenses from authorities, and pay associated fees including disposal charges, if applicable.
3. The Contractor shall notify all affected utility companies before starting work and comply with their requirements. Utility notifications are through JULIE Illinois One Call at (800) 892-0123 at least 48 hours before the start of work.
4. The Contractor shall not close or obstruct roadways, sidewalks or hydrants without permits.

D. Job Conditions

1. Conditions existing during bidding shall be maintained by Owner insofar as practical.
2. Variations to conditions or discrepancies in actual conditions as they apply to site preparation operations shall be brought to the attention of the Owner prior to the commencement of any site work.
3. The use of explosives shall not be permitted.
4. The Contractor shall field verify the full extent of the Work included in this section and make their own estimate of the quantities, labor, materials, equipment, hauling and disposal required to complete the Work. The contractor's price shall be based upon their own estimate and shall include all work necessary to complete the work whether or not specifically called for in the Contract Documents.

2. PRODUCTS – Not Used

3. EXECUTION

3.01 GENERAL

A. Before any demolition or removal begins, the Contractor shall protect trees, sensitive natural resources, private property and any other site elements which are designated to remain as indicated on the plans or in the field by the Owner. In such locations, all individual trees, tree masses, and other areas shall be protected with temporary construction fence as described in Section 02300 – Site Resource Protection.

B. The Contractor shall conduct operations with a minimum of interference to public or private access and facilities. Maintain access and egress at all times.

C. The Contractor shall protect benchmarks, property corners and all other survey monuments from damage or displacement. If a marker needs to be removed, it shall by referenced by a licensed land surveyor and replaced, as necessary, by the same.

3.02 SAW CUTS, FULL DEPTH

A. The Contractor shall saw cut pavements and structures to their full depth prior to removal or as directed on the plans. Optional saw cuts performed to aid contractor's removal operation will not be measured for payment.

3.03 REMOVAL OF PAVEMENTS, CURBS AND AGGREGATES, FULL DEPTH

A. The removal of asphalt, concrete or aggregate pavements and concrete curb and gutters shall include all breaking or separating materials, excavation, loading, hauling and disposal of the pavement to its' full depth. Unless otherwise noted on the plans, all removed materials shall be disposed of legally off site.

B. If so noted on the plans, the removal of asphalt and concrete pavements and concrete curb and gutters shall include all aggregate base material and disposed of legally off site.

C. If so noted on the plans, aggregate pavements may be removed to a specific depth.

D. If so noted on the plans, the Contractor shall create a butt joint to accept replacement or adjacent paving.

E. Replacement of pavement depth shall be paid for as separate items in the Contract.

3.04 HOT-MIX ASPHALT SURFACE REMOVAL (1 ½")

A. The removal of hot-mix asphalt surface for subsequent resurfacing shall include any associated saw cutting at the work limits. The surface shall be removed to the specified depth with a self-propelled milling machine.

B. The remaining milled surface shall not be gouged, broken or otherwise damaged by the milling operation. Sufficient cutting passes shall be made so that all irregularities or high spots which may affect resurfacing are eliminated.

C. All adjacent structures such as curbs, gutters, other pavements to remain, drainage structures or other elements to remain shall be protected from damage by the milling operation.

D. Resurfacing shall be paid for as separate items in the Contract.

3.05 REMOVAL AND DISPOSAL OF EXISTING SITE ELEMENTS

A. When indicated on the plans, the Contractor shall remove existing site elements such as fences, utility poles, culverts, drainage structures, signs, gates, debris and other items designated for removal. Unless otherwise indicated, if such items are partially buried, then all above and below ground portions shall be removed. All existing site elements to be removed shall be disposed of legally off site.

3.06 STRUCTURE DEMOLITION

A. The Contractor shall raze and remove all buildings, bridges, abutments and other designated structures and their associated appurtenances as indicated on the plans. This work shall include all razing, breaking, loading, hauling and legal off- site disposal.

B. When indicated on the plans, any depressions or voids created by the demolition shall be filled to the existing adjacent grades with material approved by the Owner.

3.07 OFF-SITE DISPOSAL

A. When a designated demolition or removal specifically does not include hauling and disposal or when debris is discovered after the start of work that the Owner desires to be removed, the Contractor shall be paid for such work as requested by the Owner.

3.04 RESTORATION

A. In all areas disturbed as a result of demolition activities, the Contractor shall backfill said areas to a depth of 4" below finished (existing) grade unless otherwise noted on plans, with clean on-site fill material, place topsoil to a minimum depth of four (4) inches unless otherwise noted on plans, fine grade, seed with LCFPD Class 2 or 3 seed mix (as shown on plans) and install erosion control blanket unless otherwise noted on the plans. All restoration work shall be in compliance with sections 03120 – Finish Grading and Topsoil and 09300 – Seeding.

END OF SECTION 02600

SECTION 03100

EARTHWORK AND GRADING

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this Section includes:

1. All mass earthwork, excavation, placement and rough grading of soils for pavements, landscape areas and other site improvements.

B. Other specification sections which may directly relate to the work in this section include, but are not limited to, include the following:

1. Section 02300 – Site Resource Protection
2. Section 02400 – Soil Erosion and Sediment Control
3. Section 02500 – Vegetation Removal
4. Section 02600 – Demolition and Removals
5. Section 05100 – Subgrade Preparation
6. Section 03110 – Ground Stabilization

2. PRODUCTS

2.01 ON-SITE FURNISHED EXCAVATION

A. On-site excavated soils and borrow materials to be used for fills shall meet the requirements of Article 204.02 of the IDOT Standard Specifications and shall be subject to approval by the Owner or Engineer prior to harvesting, hauling and placement.

2.02 IMPORTED FURNISHED EXCAVATION

A. Off-site furnished material shall be suitable for fills meeting the requirements of Article 204.02 of the IDOT Standard Specifications and shall be subject to approval by the Owner or designated Engineer prior to delivery to the work site.

3. EXECUTION

3.01 GENERAL

A. The Contractor shall inspect the site, review any provided geotechnical data and become familiar with the site conditions prior to bidding and start of work. Any geotechnical investigations provided by the Owner apply only to those locations where the data was collected and may not be indicative of conditions elsewhere on the site.

B. Unless specifically noted, all elevations and contours shown on Construction Drawings are finished grades. Grades at points between elevations or contours are to be determined by uniform slopes between given grades or elevations, or between

such figures and existing grades. Perform all rough and finish grading required to attain the elevations indicated on the drawings. Grading tolerances shall be plus or minus one-tenth of a foot (0.1') for all rough and finish work.

C. The Contractor shall be solely responsible for determining all earthwork quantities based on the existing and proposed elevations provided on the plans. The Contractor shall be responsible for performing any additional survey work that the Contractor deems necessary to complete an accurate estimate of earthwork quantities.

E. Excavation and embankment work shall conform to the applicable requirements of Sections 202, 203, 204, 205, 207, and 502 of the IDOT Standard Specifications except that excavated materials that are suitable for structural fill material shall be used in the construction of the embankments to raise trails, pavements and structures to the proposed subgrade. Suitable material from excavation that is used as embankment or other structural fills shall be free from rocks, roots, sticks, and other foreign bodies that could affect compaction.

F. Unless otherwise indicated, material for fills shall be suitable on-site excavated soil and borrow material and shall be subject to approval by the Owner. Fill material and the surface to be filled shall be free of any frozen material. Material previously compacted that has been flooded and no longer meets the density specified shall be removed and replaced.

G When there is excess on-site topsoil, the Contractor shall spread and grade the topsoil in thicknesses greater than the minimum where possible. The contractor shall also respread and grade excess on-site topsoil in other areas as directed by the Owner.

H. No site grading shall begin until all required soil erosion and sediment control measures are in place and a pre-construction meeting has been held with the Owner and representatives from the Lake County Stormwater Management Commission to identify any other permitting requirements.

I. Small shrubs, seedlings and herbaceous plant materials shall be removed or mowed at least once to reduce the volume of raw organic matter to levels suitable for reuse of the topsoil layer. The on-site disposal of minor amounts of trash, debris, rock and other undesirable materials shall be considered incidental to the Work. All concrete, clay tiles, tree stumps, and boulders encountered in excavation shall be disposed of as directed by the Owner.

J. Where the Contractor's equipment is operated on any portion of pavement or other structure used by traffic on or adjacent to the section under construction, the Contractor shall clean the pavement of all dirt and debris at the end of each day's operations and at other times as directed by the Owner.

K. The Contractor shall use all means necessary to protect the Work before, during, and after construction and to protect all objects designated to remain. In the event of damage, Contractor shall immediately make all repairs and replacements necessary to the approval of the Owner and at no additional cost to the Owner.

L. During construction operations the Contractor shall insure positive site drainage at the conclusion of each day. Provide berms or channels to prevent flooding of subgrades. Promptly remove all water collecting in depressions. Site drainage may be achieved by ditching, pumping or any other acceptable method. The Contractor's

failure to provide the above will preclude any possible added compensation requested due to delays or unsuitable materials created as a result thereof.

M. Earthwork shall not take place when soil moisture is excessive. Do not place, spread, fill or roll during unfavorable weather conditions. Do not resume operations until the soil moisture content is such that the specifications can be achieved. The Contractor may scarify the surface to accelerate drying to required moisture content but no additional compensation shall be allowed without the approval of the Owner.

3.02 BALANCE OF CUT AND FILL

A. Unless otherwise indicated, it is the Owner's intent that the site grading will result in a balance between soil cuts and soil fills. The Contractor shall be solely responsible for balancing site materials according to the plans and existing and proposed finish grades. On-site topsoil stripping and stockpiling, excavation, hauling, placement and re-spreading of materials beyond the specified work areas shall be incidental to the Work when required to balance cuts and fills. If material overages are indicated, the excess soils shall be excavated, harvested, hauled or otherwise moved to new locations and deposited and spread as directed by the Owner. Topsoil at new fill areas shall be stripped, stockpiled and then re-spread after filling. When material deficits occur, borrow areas may be indicated on the plans or identified in the field by the Owner. When required to utilize borrow areas, the Contractor shall strip, stockpile and re-spread any existing topsoil as part of the borrow operations. If on-site excavation and borrow operations do not provide enough suitable material for fill areas, the Contractor shall be responsible for providing off-site fill material as part of the Site Grading pay item. The Owner shall determine whether additional borrow areas shall be utilized or if new material will be brought in from off site. Contingency quantities for on-site structural fill shall be for replacement of unsuitable soils only.

3.03 SITE GRADING – OPEN AREAS

A. This work shall consist of furnishing all materials, equipment and labor to create the proposed grades, subgrades, elevations, contours and land shapes as indicated in the plans. This work shall include all required topsoil stripping and stockpiling, mass earthwork, rough grading, excavation, filling, hauling, soil placement, shaping and spreading of stockpiled topsoil. Site grading shall provide for any required subgrade elevations for proposed aggregate bases, pavement, surfacing, structures, topsoil or other improvements.

B. All topsoil or soils to be utilized for planting, seeding or re-vegetation shall be carefully stripped, harvested and segregated from the soils below. Soils which are not suitable for planting shall not be mixed or harvested with topsoil. After stripping, the topsoil shall be deposited in the identified location for stockpile materials for re-spreading at a later time. For trail development, topsoil shall be deposited in rows along the length of the trail. Topsoil stockpiles shall not be overly compacted. Protect all topsoil stockpiles from contamination by other materials or harmful substances.

C. During the process of creating the required cuts and fills, should the Contractor encounter unsuitable material in areas that require structural fill, the Contractor shall immediately notify the Owner prior to proceeding with the work. Upon inspection of the work area by the, the Owner and / or Engineer shall determine a prescribed remedy. If it is determined that excessive soil moisture is present, the Contractor shall aerate, disc or otherwise dry the material to make it suitable for use. If the Owner

determines that removal is warranted, the unsuitable materials shall be removed and replaced as specified in Section 03110 – Unsuitable Materials. The material used for replacement shall be approved by the Owner.

D. Areas proposed for trails and pavement shall be compacted to a minimum ninety-five percent (95%) of maximum density based on a Standard Proctor (ASTM D-698).

E. Areas proposed for structural fills for building pads shall be compacted to a minimum of 95 percent (95%) based on a Modified Proctor (ASTM D-1557).

F. Where proposed improvements or grades require cuts or excavation, the excavated material shall be utilized in achieving specified grades at other areas of the site. If the excavated material meets the requirements, it may be used as structural fill. No material shall be hauled from the site or placed in an unauthorized location without the Owner's approval, and no compensation shall be allowed for such hauling and disposal unless specifically listed in the Schedule of Prices.

G. Site grading shall include the creation of all ditches, swales and other drainage landforms shown in the plans. Ditches and swales shall be shaped with smooth transitions to adjacent grades. Ditches shall be sloped to drain in the direction shown on the Construction Drawings. The Contractor shall be solely responsible for assuring positive drainage upon the completion of site grading.

H. Areas proposed for landscaping, planting, seeding or re-vegetation shall receive a minimum of 4 inches of topsoil from on-site stockpiles unless otherwise specified. Before placement of topsoil, the Contractor shall assure that the existing soil surface is not overly compacted or glazed and free from debris. If such conditions exist, the Contractor shall clean, scarify and/or till the surface to a minimum depth of 8 inches before the placement of topsoil. The topsoil shall be spread evenly and graded in preparation for Finish Grading. Any branches, roots, rocks or other debris shall be removed and disposed. Place and spread the topsoil to the minimum thickness as specified and in a uniform layer. Do not excessively compact the topsoil after placement.

3.04 SITE GRADING – SENSITIVE WOODED AREAS

A. This work shall consist of furnishing all materials, equipment and labor to create the proposed grades and subgrades required for trail construction and other improvements in sensitive wooded areas. Sensitive wooded areas differ from open areas in that they contain valuable trees and vegetation that may potentially be harmed by soil disturbance. It also differs in that no additional Subgrade Preparation is required. It is the intent of the Owner to minimize any potential harm to tree root systems by limiting the amount of grading and soil disturbance.

B. Site grading in sensitive wooded areas shall include herbaceous vegetation mowing when needed, removal of surface litter and, placement of cut soils, formation of ditching by minor filling rather than cutting, shaping shoulder areas and testing of soil materials to attain the subgrade elevations required for trail construction. The Contractor shall limit the width of the graded area to only that which is necessary to construct the actual trail width and avoid performing the work during excessively wet conditions. A typical cross section is shown in the plans; however, the Contractor shall be required to adjust the final profile depending on adjacent trees and site conditions. These variances in design may include eliminating, redirecting or shortening the ditches, adjusting the final trail location and adjusting the finish grade of the trail.

C. Before the start of surface grading, the Owner shall inspect the soil conditions and vegetation and determine the extent and depth of surface removal required to provide an adequate subgrade condition with minimal root damage. This depth shall generally be between 1 to 4 inches. This depth may vary across different parts of the site. Any material which is removed from the trail bed subgrade shall be deposited adjacent to the trail edges for re-spreading after trail surface construction. The final subgrade surface shall be smooth, uniform and reflective of the original surface profile.

D. Upon completion of the surface soil removal, the Owner and Contractor shall review the surface conditions together prior to any other work to reveal any unsuitable soils or areas. No rolling or compaction shall be performed on the subgrade unless directed by the Owner.

E. Ditching shall be constructed at the locations specified on the plans and at locations directed by the Owner by adjustment of the finished elevations in conjunction with filling adjacent to the edge of pavement. Ditches shall be sloped to drain in the direction shown on the plans. Field modifications from the typical detail shown on the construction drawings may be required in an effort to preserve desirable trees. This may include relocation of ditching, deleting ditches adjacent to trees, creating shorter ditches perpendicular to the trail and adjusting the built dimensions. The contractor shall review drainage issues with the Owner onsite before commencement of work in sensitive wooded areas.

3.05 ON-SITE AND IMPORTED FURNISHED EXCAVATION

B. On-Site Furnished Excavation and Imported Furnished Excavation are contingent items and shall only be used with the Owner's opinion when there is insufficient suitable structural fill material generated from earthwork and site grading (excavation, ditching, embankment construction, borrow areas) in the general work area to achieve the proposed grades shown on the construction plans.

C. All provided Furnished Excavation shall be in accordance with Section 205 of the IDOT Standard Specifications. Samples of Imported Furnished Excavation material shall be submitted to the Owner for approval prior to delivery and installation.

D. On-Site Furnished Excavation shall include all labor and equipment to strip and segregate topsoil, excavate, load, haul, dump, place, compact, re-spread topsoil and otherwise transfer suitable material from a borrow area to the designated fill area.

E. Imported Furnished Excavation shall include all labor and equipment to locate, test, acquire, excavate, load, haul, dump, place, compact, re-spread topsoil and otherwise transfer suitable material from an off-site source to the designated fill area.

D. Furnished Excavation used in trail and road embankment construction as well as other pavement areas shall be compacted to a minimum of 95 percent based on a Standard Proctor (ASTM D-698).

E. Furnished Excavation used in structural fills for building pads shall be compacted to a minimum of 95 percent based on a Modified Proctor (ASTM D-1557).

3.06 STRUCTURE EXCAVATION

A. Structure Excavation is defined as excavation directly related to the construction of specific structural elements such as footings, vaults, buildings, abutments, underpasses and other related improvements which require excavation that is typically deeper and requiring more precise dimensions, depths and side slopes than typically required for general earth excavation.

B. Quantities for Structure Excavation shall be defined either by excavation dimensions shown on the plans or by the dimensional requirements of the structure itself, bedding and backfill requirements and safety considerations for sloped or benched sides greater than five feet in height.

C. Structure Excavation shall be measured separately from any other unrelated earthwork and grading.

3.07 DITCHING – CONTINGENT

A. Additional ditching may be required to achieve adequate drainage conditions and may be temporary or permanent. Any additional ditching shall be approved by the Owner prior to construction and shall match the typical dimensions shown on the plans.

END OF SECTION 03100

SECTION 03110

GROUND STABILIZATION

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this section includes:

1. Removal of unsuitable soils and placement of geotextile fabrics and suitable replacement materials.

B. Other specification sections which may directly relate to the work in this section include, but are not limited to, include the following:

1. Section 03100 – Earthwork and Grading
2. Section 05100 – Subgrade Preparation

2. PRODUCTS

2.01 ON-SITE FURNISHED EXCAVATION

A. Excavated soil and borrow material to be used for undercuts shall meet the requirements of Article 204.02 of the IDOT Standard Specifications and shall be subject to approval by the Owner and Engineer.

2.02 IMPORTED FURNISHED EXCAVATION

A. Offsite furnished material shall be suitable for fills meeting the requirements of Article 204.02 of the IDOT Standard Specifications and shall be subject to approval by the Owner and Engineer.

2.03 GEOTEXTILE FABRIC

A. Geotextile fabric shall be non-woven; needle punched polypropylene staple fiber that is UV stabilized and resistant to chemicals, mildew and insects.

B. The geotextile fabric shall be:

1. Thrace-LINQ GTF-225EX
2. or approved equivalent meeting the following minimum criteria:

Grab Tensile Strength	215 lbs.
Elongation	50%
Puncture (CBR)	600 lbs.
Permittivity	1.3 sec^{-1}

2.04. POROUS GRANULAR EMBANKMENT (PGE), CA-1

A. Aggregate materials for use as PGE shall be CA-1, in conformance with Article 1004.01 of the IDOT Standard Specifications. Sources and/or samples of the proposed material shall be submitted to the Owner prior to delivery and installation.

3. EXECUTION

3.01 GENERAL

A. If at any time the Contractor discovers unsuitable or unstable material in areas that require structural fill for trails, pavements or structures, work shall be stopped and the Owner shall be contacted immediately. The Contractor shall excavate test pits at select locations to allow examination of the subsoils by the Owner and Engineer. A determination shall be made by the Owner and Engineer as to the most appropriate remedy and the Contractor shall be directed to perform the additional work. This work may include removal and replacement of soils, placement of geotextile fabrics or other remedies and shall be paid for as per the Schedule of Prices.

3.02 TEST ROLLING EQUIPMENT AND PROCEDURES

A. Test rolling of subgrades shall be performed in the presence of the Owner or Engineer. When test rolling reveals unsuitable or unstable soils, the Owner and Engineer shall determine the most appropriate remedy and direct the Contractor accordingly as described above.

B. Test rolling equipment shall conform to following description:

1. Tandem axle, dual wheel dump truck.
2. Tire pressure shall be no less than ninety percent (90%) of manufacturer's recommended maximum inflation.
3. Minimum gross weight of loaded truck shall be 60,000 pounds.
4. Provide weigh slip to the Engineer.

C. Perform test rolling procedure as follows:

1. Operate equipment at a rate not to exceed three (3) mph to five (5) mph or a comfortable walking pace.
2. Adjust speed to allow the Engineer to measure any deflections and areas of rutting.
3. Operate test rolling equipment in a pattern so that affected areas are loaded with at least one (1) pass.
4. After test rolling, check subgrade for conformance to drawings, and correct any surface irregularities. Re-shape subgrade within tolerances specified.

D. Test Rolling Evaluation

1. Rutting up to one inch (1") is acceptable.
2. Rutting in excess of one inch (1") but not more than six inches (6"), shall be considered a failure and requires reworking soil and compaction to required density.
3. Deflection, (pumping) up to one inch (1") is acceptable.
4. Deflection in excess of one inch (1") but not more than two inches (2") shall be acceptable if there is not substantial cracking or lateral movement of soil.
5. Deflection in excess of two inches (2") but not more than six inches (6") shall be considered a failure, and requires reworking soil and compaction to required density.
6. Rutting and deflection in excess of six inches (6") will require review and recommendation for corrective action by the Engineer.
7. After remedial work is performed, a final test roll shall be performed upon completion of work.

8. If remedial work is performed as directed, second test roll may be waived at discretion of the Engineer.

E. When performing Subgrade Preparation, if it is determined that the material composition is acceptable and that excessive moisture has rendered the material unstable, the Contractor shall perform air drying techniques as per Article 301.04 of the IDOT Standard Specifications before consideration of removal of the material.

3.03 EXCAVATION AND ON-SITE DISPOSAL OF UNSUITABLE MATERIAL

A. Work contained under this pay item shall include the excavation, removal, loading hauling and on-site spreading of material deemed unsuitable by the Owner and Engineer.

B. Prior to the commencement of this work, the Owner and Engineer shall determine the exact dimensions, depths and quantities to be removed. Failure of the Contractor to have the work area properly inspected, approved and quantified by the Owner and Engineer will result in the denial of payment for such work.

C. All excess excavated soils and spoil materials shall be relocated to an on-site area and spread as directed by the Owner. This work shall include any stripping, stockpiling and respreading of topsoil at the deposition area. Should the Owner require that material be removed from the site, it shall be paid for under a separate pay item if so included in the Schedule of Prices.

3.04 PLACEMENT OF FURNISHED EXCAVATION

A. Work contained under this item shall include placement, compaction and testing of suitable onsite or imported furnished excavation in areas of undercut as directed by the Owner and Engineer. This work shall be done in accordance with Section 205 of the IDOT Standard Specifications.

B. Compaction shall be to a minimum ninety-five percent (95%) of maximum density based on a Standard Proctor (ASTM D-698). Where compaction of the subgrade is required, any areas that are inaccessible to a roller shall be compacted either by other mechanical means or using a hand tamper meeting the approval of the Owner and Engineer.

C. After final filling and compacting, undercut areas shall be proof rolled in the presence of the Owner.

3.05 GEOTEXTILE GROUND STABILIZATION

A. This work shall consist of furnishing all materials, equipment and labor for the installation of geotechnical fabric over soils which will have trails, pavements or structures. Geotechnical Fabric is to be installed in locations as directed and approved by the Owner or Engineer.

B. Geotechnical fabric is to be installed as a full width continuous sheet whenever possible and roll ends shall be overlapped a minimum of 4 feet.

3.06 PLACEMENT OF POROUS GRANULAR EMBANKMENT (PGE), CA-1

A. This work shall consist of furnishing all materials, equipment, and labor for the installation of Porous Granular Embankment (PGE). PGE shall be placed at the locations, dimensions and depths as directed by the Owner and Engineer.

B. This item shall be used as replacement for unstable and unsuitable material that has been removed. PGE shall be furnished, placed and consolidated or compacted to the satisfaction of the Owner and in accordance with Section 207 of the IDOT Standard Specifications.

END OF SECTION 03110

SECTION 03120

FINISH GRADING AND TOPSOIL

Revised / Reviewed February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this Section includes:

1. Furnished topsoil placement and finish grading for revegetation of select areas of the work site.

B. Other specification sections which may directly relate to the work in this section include, but are not limited to, include the following:

1. Section 03100 – Earthwork and Grading
2. Section 05200 – Trail Construction
3. Section – 09200 – Woody and Herbaceous Plants
4. Section 09300 – Turf Seeding
5. Section 09310 – Native Seeding

2. PRODUCTS

2.01 FURNISHED TOPSOIL

A. After existing on-site topsoil has been respread, the Owner will determine if additional furnished topsoil is required. That decision will be based on quality and quantity of existing topsoil.

B. Topsoil shall consist of natural loam, sandy loam, silty loam, silty clay loam, or clay loam humus-bearing soils which are fertile and friable, adapted to the sustenance of plant life and originating from the A soil horizon of prairie and / or agricultural lands. Topsoil shall be free of stones, roots, trash, debris, contaminants, residual herbicides and other materials deleterious to plant growth. A sample and a soil analysis test by an independent lab shall be submitted along with the source location of the material. Topsoil testing shall indicate a pH between 6.0 and 8.0 and an organic content of not less than 4%. For Pulverized Topsoil, the following particle gradation is required:

Sieve Designation	Percent Passing
1" screen	100
¼" screen	97 – 100
No. 10 US Sieve Series	95 – 100
No. 140 US Sieve Series	60 – 90

2.02 COMPOST

A. Compost for use as soil amendments, planting mixes and for topdressing shall be 100% organic decomposed plant materials derived from grass clippings, leaves, small brush, silage, hay or other appropriate feedstock. The compost shall originate from a facility approved by the Illinois Environmental Protection Agency. The

component proportions and processing methods shall be strictly managed to produce a product that meets or exceeds the EPA Performance Standards for General Use Compost and for End-Product Compost Derived from Landscape Waste and the U.S. Composting Council Seal of Testing Assurance Program. The compost shall be entirely free of inorganic materials, fuels, poisons or other contaminants. The end product shall be mature, stable, weed free and produced by aerobic decomposition through temperature management and appropriate remixing schedules. It shall be screened to result in a maximum 1/2" particle size. The compost shall have a pH of between 6.0 and 8.0 and an organic content of between 30-60%, dry weight basis.

Provide full laboratory test results and a product sample for approval.

3. EXECUTION

3.01 GENERAL

A. Provide all filling, spreading, cleaning and finish grading to achieve the lines, grades and minimum thickness indicated in the Contract Documents. Placement of onsite topsoil and furnished topsoil (if required) shall conform to Section 211 of the IDOT Standard Specifications. All finish grading shall be done in a manner that provides positive drainage.

B. A significant amount of handwork is required to ensure a clean and smooth horizontal trail edge and a smooth transition between the edge of the trail and the adjacent grassed areas. Areas immediately adjacent to the trail shall be of the same or a lesser elevation than the edge of trail in order to allow water to flow off the trail surface as quickly and efficiently as possible.

C. Unless specifically noted, all grades shown are finished grades. Elevations at points between elevations or contours are to be determined by uniform slopes between given grades or elevations, or between such figures and existing grades. Perform all finish grading required to attain the elevations indicated on the plans. Grading tolerance shall be plus or minus one tenth (0.1) of a foot for all finish grading.

3.02 EXCESSIVE COMPACTION

A. Topsoil spreading and finish grading shall not commence on excessively compacted soils. Soils which have been compacted by construction activities, especially haul routes, shall be relieved of the excessive compaction by mechanical means such as use of a chisel plow, disc and rake which can physically break up the soil to the full depth of compaction. This work shall not be paid for separately but shall be considered incidental to the earthwork and grading operations.

3.03 FINISH GRADING

A. Finish grading shall include all soil fracturing, blending and shaping to create a smooth and uniform surface for planting. Depressions from settlement shall be filled as needed. Transitions in grade shall be gradual and rounded. All surfaces shall be finished to provide adequate drainage. Create grades which drain away from structures at a minimum of 1/4-inch per foot for 10 feet.

B. The respreading of topsoil which has been stripped and stockpiled from graded areas is not included in this section. All respreading of stockpiled topsoil shall be paid for

under the pay item Site Grading. Only the final finish grading of on-site topsoil is included in this section.

C. All areas of the work site indicated for planting, seeding or revegetation, and additionally all previously vegetated areas that have been disturbed, construction access, staging, stockpile and storage areas, borrow sites, disposal areas and any other bare soil areas requiring restoration shall be finish graded.

D. No soil shall be placed or worked while muddy or frozen.

E. When complete, the surface of the topsoil shall be free from rocks and soil clods greater than 1 inch in diameter. If surface debris cannot be adequately cleaned manually, the Contractor shall utilize a dedicated mechanical rock and debris collection attachment for motorized equipment.

F. New finish graded areas shall be protected from traffic and erosion. All settlement or washing away that may occur from any cause prior to or after seeding and soil stabilization shall be repaired and finish graded again to the required elevations, shapes and slopes at no additional cost to the Owner.

3.04 FURNISHED TOPSOIL

A. This work shall include all materials, equipment, and labor to provide, place, spread and fine grade furnished topsoil to the minimum thickness as specified in the Contract Documents.

B. Before placement of topsoil, the Contractor shall assure that the existing soil surface is not overly compacted or glazed and free from debris. If such conditions exist, the Contractor shall clean, scarify and/or till the surface to a minimum depth of 8 inches before the placement of topsoil. Place and spread the topsoil to the minimum thickness as specified and in a uniform layer. Do not excessively compact the topsoil after placement.

C. If required, furnished topsoil shall be fine graded as described above.

3.05 COMPOST SOIL AMENDMENT (DEPTH)

A. Compost shall be spread evenly at the required depth and tilled into the existing soil to a minimum depth of (8) eight inches used a powered mechanical tiller or tiller attachment. The surface shall then be raked and graded to a smooth surface profile.

END OF SECTION 03120

SECTION 03200

CULVERT CROSSINGS

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this section includes:

1. Installation of culverts (complete), including: pipe, bedding, backfill, inlets, end sections and rock outlet protection for trail and parking lot construction.

B. Other specification sections which may directly relate to the work in this section include, but are not limited to, include the following:

1. Section 03100 – Earthwork and Grading
2. Section 05100 – Subgrade Preparation
3. Section 03110 – Ground Stabilization
4. Section 03120 – Finish Grading and Topsoil
5. Section 05200 - Trails
6. Section 05300 – Roads and Parking

2. PRODUCTS

2.01 CORRUGATED HIGH DENSITY POLYETHYLENE PIPE

A. Corrugated High Density Polyethylene (HDPE) pipe shall be constructed in accordance with AASHTO Specification M252 and M294, as applicable, or ASTM F2306. HDPE pipe shall be black, corrugated on the exterior with smooth walled interior. Pipe diameters and lengths shall be as specified on the Construction Drawings, and appropriately sized flared end sections shall be installed at each end of the pipe. HDPE pipe shall be Advanced Drainage Systems (ADS) N-12, or approved equal.

B. Joints for Corrugated HDPE shall be elastomeric joints in conformance with ASTM F477 and Manufacturer's Specifications.

2.02 REINFORCED CONCRETE PIPE (RCP)

A. Reinforced concrete pipe shall conform to AASHTO M 170 or ASTM C76. Pipe class shall be Class II unless otherwise indicated. Pipe diameters and lengths shall be as specified on the Construction Drawings.

B. Joints shall include a trowel applied bituminous mastic compound in accordance with Section 1055 of the IDOT Standard Specifications.

2.03 PRECAST RCP FLARED END SECTIONS (FES)

A. Precast RCP FES shall conform to the applicable requirements of AASHTO M 170 or ASTM C76. FES sizes shall be as specified on the contract drawings.

2.04 CORRUGATED STEEL PIPE (CSP)

A. CSP shall be constructed in accordance with AASHTO Specifications M 218 and M 36. Pipe diameters and lengths shall be as specified on the Construction Drawings, and appropriately sized flared end sections shall be installed at each end of the pipe.

B. Pipe diameters will be one size larger than HDPE pipe when a connection between the two dissimilar pipes is to be made. Joints for the connection of HDPE to CSP shall be a double wide marmac coupler per the manufacturer's specifications.

C. Pipe joint coupling bands shall be provided meeting the pipe manufacturer's recommendations. Coupling bands shall be installed to provide straight alignment of the connecting pipe ends. The bands shall be positioned to overlap adjacent pipes equally. The coupling bands shall be corrugated to match the corrugations of the pipe section ends being connected.

2.05 STEEL END SECTIONS

A. This specification covers steel end sections used on the inlet and outlet ends of corrugated steel pipe and HDPE pipe. The galvanized material used in the fabrication of the end sections shall conform to the applicable material requirements of AASHTO M 218 or ASTM A 929. All fabrication of the product shall occur within the United States of America. The end sections shall be manufactured to show careful finished workmanship. There shall be no loosely formed seams or ragged shear edges. The markings on the sheets as received from the steel supplier shall be legible. The metallic coating on the end section shall not be bruised, broken or otherwise damaged. If there is damage to the coating it shall be repaired in accordance with ASTM A 780.

B. Metal end sections will match the diameter of the CSP extension when being used with HDPE pipe. Where metal end sections are connected directly to HDPE pipe, the metal end section will typically be one diameter larger.

2.06 RIPRAP

A. Riprap shall be in accordance with Article 281.04a of the IDOT Standard Specifications for Stone Riprap with the following exceptions. The riprap shall be natural field stone cobbles and boulders reasonably graded from a minimum of five (5) to a maximum of twelve (12) inches in diameter or the gradation specified in the drawings, whichever is the greater size. The cobbles shall be of mixed geologic origin primarily granite, as is typically found in the Fox River basin of northern Illinois and southern Wisconsin. Crushed limestone riprap is not acceptable and will not be approved. Samples of the specified material shall be submitted for approval to the Owner prior to delivery and placement. Riprap shall include appropriate bedding and geotextile fabric when specified on the construction plans. The furnished field stone cobbles and boulders shall be from:

1. Super Aggregates
   5435 Bull Valley Rd. Suite 330
   McHenry, IL 60050
   (815) 385-8000

2. or approved equal.

2.07 BACKFILL AND BEDDING, CA-6, TYPE B

A. Backfill material shall be CA-6, Type B, in conformance with Article 1004.01 of the IDOT Standard Specifications except as noted below. The source of the material shall be approved by the Owner prior to delivery. Samples of the proposed material shall be submitted to the Owner for approval prior to delivery and installation.

B. Backfill beneath and within 2 feet of aggregate trail or paved surfaces shall consist of trench backfill meeting the requirements Section 208 of the Standard Specifications.

3. EXECUTION

3.01 GENERAL

A. Culvert crossing material shall be as designated on the Construction Drawings.

B. Contractor shall install and maintain erosion control measures including the installation of ditch checks and silt fence at culvert crossing locations as shown on the plans prior to the commencement of any construction activities at that culvert crossing location. Ditch checks and silt fence shall be in accordance with the Construction Drawings.

C. Contractor shall submit shop drawings and provide details for all items required to complete the work at each culvert crossing for review and approval by the Owner prior to the commencement of any construction activities.

3.02 SUBGRADE PREPARATION

A. Existing topsoil within culvert crossing area shall be stripped and stockpiled, subgrade shall be excavated to the required lines and grades as shown on the Construction Drawings and to match the existing ditch bottom slope. The subgrade shall be compacted to a minimum of 95% density based on a Standard Proctor (ASTM D-698). If the required compaction density cannot be achieved due to the presence of unsuitable material, the material shall be excavated and replaced with either compacted suitable on-site fill, Porous Granular Embankment (PGE) or Trail Embankment and Geotechnical Fabric as approved by the Owner (See Section 03110 Unsuitable Materials).

3.03 CULVERT INSTALLATION

A. Culvert installation shall conform to Article 542.04 of the IDOT Standard Specifications, applicable manufacturer's recommended installation procedures and the contract drawings.

B. Backfill material shall be placed and compacted in uniform lifts of a maximum loose thickness of six (6) inches.

C. Bedding and haunching shall be in accordance with Manufacturers' requirements.

3.04 RIPRAP

A. Riprap shall be installed at the locations and in the dimensions shown on the Construction Drawings. The riprap shall be placed to a depth shown on the plans and placed on an approved Geotextile Filter Fabric.

B. Riprap shall be placed in accordance with Section 281 of the IDOT Standard Specifications.

3.05 CULVERT DITCHING

A. Ditching shall be provided upstream and downstream of each culvert to provide adequate drainage along flow path of culvert. Ditching shall match existing drainage way in slope and dimension. All flow obstruction shall be removed to provide a clear flow path.

3.06 END TREATMENTS

A. Installation of end treatments shall conform to Articles 502.10 and 540.07 of the IDOT Standard Specifications, applicable manufacturer's recommended installation procedures and shall be the size, type and at the locations as shown on the plans.

END OF SECTION 03200

SECTION 03300

DRAINAGE STRUCTURES

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this Section includes:

1. Installation of storm sewer structures (sewers, pipes, inlets, manholes and catch basins, etc.) and associated frames and grates.

B. Other specification sections which may directly relate to the work in this section include, but are not limited to, include the following:

1. Section 02400 – Soil Erosion and Sediment Control
2. Section 03100 – Earthwork and Grading
3. Section 035100 – Subgrade Preparation
4. Section 03110 – Ground Stabilization

2. PRODUCTS

2.01 PRECAST CONCRETE MANHOLES, OUTLET CONTROL STRUCTURES, CATCH BASINS AND INLETS

A. Precast manholes and structures shall conform to ASTM C478 and Article 1042.10 of the IDOT Standard Specifications. Design dimensions shall be as shown on the plans.

2.02 CAST IRON FRAMES AND GRATES

A. Castings shall conform to the requirements of gray iron castings as specified in ASTM A 48 or ductile iron castings as specified in ASTM A 536 of the type and size shown on the plans.

2.03 CONCRETE SEWER PIPE

A. Reinforced Concrete Sewer Pipe

1. Reinforced Concrete Sewer Pipe shall conform to Article 1042.06 of the IDOT Standard Specifications and ASTM C76, and shall be of the nominal diameter and class indicated on the Drawings.

B. Joints for Concrete Sewer Pipe

1. Joints for concrete sewer pipe shall be rubber ring joints conforming to ASTM C443 or cold applied asphaltic compound joints.
2. Rubber gaskets shall consist of a special rubber designed to resist hardening and disintegration from contact with sewage and water over long periods of time. The ring shall fit snugly over the spigot end of the pipe. Provide rubber cement and bituminous or other coating as required to insure a proper joint.

3. Material for cold applied asphaltic compound joints shall be Ram-Nek as manufactured by K. T. Snyder Company, Houston, Texas; Ropax Packing and Kalktite Sewer Joint Compound as manufactured by Prestite Engineering Company; or equal.

4. Other joints for concrete sewer pipe; such as mortar or die-cast bituminous joints, may be used only if specifically approved by the E/A.

2.04 POLYVINYL CHLORIDE PIPE STORM SEWER/FIELD TILE/DRAIN LINE

A. Polyvinyl Chloride (PVC) pipe and fittings shall conform to ASTM D2241 and have a Standard Dimension Ratio (SDR) of 26. Pipe diameters and lengths shall be as specified on the Construction Drawings.

B. Joints for PVC pipe and fittings shall be furnished with elastomeric gasket joints conforming to ASTM F477.

C. Cleanouts/Observation structures shall be constructed with fittings of the same materials and diameter as the mainline sewer.

D. Connection to existing sewers shall be made with manufactured fittings where possible. Stainless steel non-shear couplings shall be utilized at locations where connection is made to a non-standard pipe size/material after approval from the E/A.

2.05 POLYVINYL CHLORIDE PIPE UNDERDRAIN

E. Polyvinyl Chloride (PVC) underdrain pipe and fittings shall conform to ASTM D3034 and have a Standard Dimension Ratio (SDR) of 35. Pipe diameters and lengths shall be as specified on the Construction Drawings.

F. Joints for PVC pipe and fittings shall be furnished with elastomeric gasket joints conforming to ASTM F477.

G. PVC underdrain pipe shall be perforated with two (2) 5/8" diameter holes spaced at 6 inches on center longitudinally along the pipe. Holes shall be spaced at an angle of approximately 120 degrees when viewed in section view.

2.06 PERFORATED CORRUGATED HIGH DENSITY POLYETHYLENE PIPE UNDERDRAIN

A. Corrugated High Density Polyethylene (HDPE) pipe shall be constructed in accordance with AASHTO Specification M252 and M294, as applicable, or ASTM F2306. Underdrain shall conform to Article 6.01.02(b)(4) of the IDOT Standard Specifications. Pipe diameters and lengths shall be as specified on the Construction Drawings.

2.07 PREFABRICATED TRENCH DRAINS

A. Prefabricated trench drains shall be manufactured with SMC/GRP (sheet molding compound/glass reinforced polyester) material or polymer reinforced concrete. Each section of trench drain shall be 39.4" in length and manufactured with a sloped invert.

B. All metal components shall be stainless steel.

C. Grates shall be stainless steel with perforated openings rated for Load Class C (light trucks) or greater, comply with ADA requirements, and lock into place.

D. Transition to different pipe materials shall be made with fittings manufactured by the same company the manufactures the selected trench drain.

E. Trench drains shall be Mea-Josam Pro-Plus 100C series or ACO KlassikDrain K100 series. Grates shall be Mea-Josam Pro-Plus Series Part No. 152781 or ACO Type 465Q

F. or Approved Equal

2.08 BACKFILL AND BEDDING, CA-6, TYPE B

A. Backfill material shall be CA-6, Type B, in conformance with Article 1004.01 of the IDOT Standard Specifications except as noted below and on the details. The source of the material shall be approved by the Owner prior to delivery. Samples of the proposed material shall be submitted to the Owner for approval prior to delivery and installation.

B. Backfill beneath and within 2 feet of aggregate trail or paved surfaces shall consist of trench backfill meeting the requirements Section 208 of the Standard Specifications.

3. EXECUTION

3.01 STORM DRAINAGE STRUCTURES (MANHOLES, OUTLET CONTROL STRUCTURES)

A. This work shall consist of furnishing all materials, equipment, and labor and performance of all required operations of the installation of the storm drainage structures as specified and shown on the drawings.

B. The work shall meet the applicable sections of Division V of the Standard Specifications for Water and Sewer Construction in Illinois, latest edition.

C. Contractor to install specified sediment control protection device or measures upon completion of installation of storm drainage structure.

3.02 STORM SEWER / FIELD TILE / DRAIN LINE

A. This work shall consist of furnishing all materials, equipment, and labor and performance of all required operations of the installation of the Storm Sewer of the diameter, material, and length as specified and shown on the drawings, including fittings for changes in directions or materials, and cleanouts.

B. The work shall meet the applicable sections of Division V of the Standard Specifications for Water and Sewer Construction in Illinois, latest edition and Article 550.06-08 of the IDOT Standard Specifications.

C. All lengths of pipe shall be dimensioned accurately to measurements established at the site, and shall be worked into place without springing or forcing.

D. The Contractor shall cut all pipe and drill all holes that may be necessary. Cut sections of pipe shall be reamed or filed to remove all burrs. The pipe interior and joints shall be thoroughly cleaned before being installed and kept clean during construction.

E. All changes in direction shall be made with fittings or approved joint deflection. Bending of pipe is prohibited.

H. Any transition from one pipe size to another shall be made with a reducing fitting. Reducing bushings are prohibited except where specifically indicated on the Drawings or approved by the E/A.

I. Contractor to install specified sediment control protection device or measures upon completion of installation of storm drainage structure.

J. Pipe shall be installed true to the lines and grades from reference stakes set by the Contractor by the use of an adjustable pipe laser.

K. Pipe shall be laid progressively up grade, with bell upstream, in a manner to form close, concentric joints with smooth bottom inverts.

3.03 UNDERDRAIN

A. This work shall consist of furnishing all materials, equipment, and labor and performance of all required operations of the installation of the underdrain of the diameter, material, and length as specified and shown on the drawings.

B. The work shall meet the applicable sections of Division V of the Standard Specifications for Water and Sewer Construction in Illinois, latest edition and Article 601.01-05 of the IDOT Standard Specifications.

C. All lengths of pipe shall be dimensioned accurately to measurements established at the site, and shall be worked into place without springing or forcing.

D. The Contractor shall cut all pipe and drill all holes that may be necessary. Cut sections of pipe shall be reamed or filed to remove all burrs. The pipe interior and joints shall be thoroughly cleaned before being installed and kept clean during construction.

E. All changes in direction shall be made with fittings or approved joint deflection. Bending of pipe is prohibited.

F. Any transition from one pipe size to another shall be made with a reducing fitting. Reducing bushings are prohibited except where specifically indicated on the Drawings or approved by the E/A.

3.04 SEPARATION OF NON-POTABLE AND POTABLE WATER LINES

A. Horizontal Separation

1. Whenever possible, existing and proposed potable watermains shall be separated at least 10 feet horizontally from any existing or proposed sewer or drain line.

2. Should local conditions prevail which would prevent a lateral separation of 10 feet, a watermain may be laid closer than 10 feet to, or in the same trench as, a storm or sanitary sewer provided the main is laid in a separate trench or on an undisturbed earth shelf located to one side of the sewer and at such an elevation that the bottom of the watermain is at least 18-inches above the top of the sewer.

B. Vertical Separation

1. Whenever potable watermains and non-potable lines cross or run parallel within 10 feet, the watermain should be laid at such an elevation that the bottom of the watermain is 18-inches above the top of the drain or sewer. This vertical separation should be maintained for that portion of the watermain located within 10 feet, horizontally, of any sewer or drain crossed, said 10 feet to be measured as the normal distance from the watermain to the drain or sewer.

2. Where it is necessary for the watermain to pass under a sewer or drain line, the top of the watermain shall be 18-inches below the bottom of the sewer or drain line, and the watermain installed inside a casing pipe. This casing pipe

shall extend each side of the crossing until the horizontal distance from the end of the casing to the sewer or drain line is at least 10-feet.

3. In making such crossings, it is preferable to center a length of watermain pipe over the sewer to be crossed so that the joints will be equal distance from the sewer and as remote therefrom as possible. Means to support the non-potable lines to prevent their settling and breaking the watermain shall also be provided.

C. Exceptions

1. If it is impossible to obtain proper horizontal and/or vertical separation as stipulated in A.1. or B.1., both the watermain and sewer shall be constructed of watermain grade **[ductile iron]** pressure pipe for a distance of at least 10 feet on each side of the crossing. Both pipes shall be pressure tested to assure watertightness before backfilling.

D. Water Service Lines

1. The horizontal and vertical separation between water service lines and all sanitary sewers, storm sewers and any drain should be the same as for watermains, as detailed in Paragraphs A and B, except when minimum horizontal and vertical separation cannot be maintained. Copper is to be used for water service lines.

3.05 PREFABRICATED TRENCH DRAINS

A. Trench drains shall be installed at locations shown and to the orientation and grades specified on the Construction Drawings and/or at additional locations as specified by the OWNER.

B. Trench drains shall be wet-set in a concrete envelope with at least 6-inches on concrete on all sides.

C. Trench drain shall be installed in accordance with the selected manufacturer's recommendations and details.

3.06 FIELD TILE REPLACEMENT

A.. Pipe shall be installed in accordance with 3.02 – STORM SEWER from this section.

B. Where connection is made to an existing filed tile that flows off-site or conveys flow from off-site, an observation structure shall be installed.

C. Replacement shall follow the same general alignment of the existing tile such that the existing tile is removed along the length of replacement.

END OF SECTION 03300

SECTION 05100

SUBGRADE PREPARATION

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this Section includes:

1. Final preparation of the subgrade for trails, pavements and structures.

B. Other specification sections which may directly relate to the work in this section include, but are not limited to, include the following:

1. Section 03100 – Earthwork and Grading
2. Section 03110 – Ground Stabilization
3. Section 05200 –Trails
4. Section 05300 – Roads and Parking

2. PRODUCTS

2.01 GEOTEXTILE FOR GROUND STABILIZATION

A. Geotextile fabric shall be non-woven, needle punched polypropylene staple fiber that is UV stabilized and resistant to chemicals, mildew and insects.

B. The geotextile fabric shall be:

1. Thrace-LINQ GTF-225EX

2. or approved equivalent meeting the following minimum criteria:

Grab Tensile Strength	215 lbs.
Elongation	50%
Puncture (CBR)	600 lbs.
Permittivity	1.3 sec^{-1}

3. EXECUTION

3.01 GENERAL

A. Subgrade preparation shall be performed after the completion of Site Grading at all locations which will receive trails, pavement or structural improvements in preparation for the placement of aggregate base material.

B. When proof rolling reveals additional unstable areas, undercut excavation shall be undertaken only as approved and directed by the Owner and Engineer.

C. All excess excavated and spoil materials shall be spread or relocated on-site or removed from the site as directed by the Owner.

3.02 SUBGRADE PREPARATION – OPEN AREAS

A. This work shall consist of furnishing all materials, equipment and labor for the final preparation of the subgrade for open areas. Subgrade preparation for open areas shall include final grading to within 0.1-foot of specified subgrade elevations, shaping, disking, aerating, sheepsfoot rolling, vibratory rolling, compacting, proof rolling and testing as required.

B. Areas proposed for trails and pavement shall be compacted to a minimum ninety-five percent (95%) of maximum density based on a Standard Proctor (ASTM D-698). Any areas that are inaccessible to a roller shall be compacted either by other mechanical means or using a hand tamper meeting the approval of the Owner and Engineer. The Contractor shall proof roll the finished subgrade with the Owner or Engineer present.

C. Areas proposed for structural fills for building pads shall be compacted to a minimum of 95 percent (95%) based on a Modified Proctor (ASTM D-1557).

D. When proof rolling reveals additional unstable soil areas, the Owner shall be notified immediately. If soil moisture is excessive, the material shall be aerated and compacted again and retested. If, in the opinion of the Owner and Engineer a more significant remedy is required, the Contractor shall be directed to perform additional work such as removal of unsuitable materials, placement of geotextile fabrics and/or soil replacement with an approved suitable material. These more significant tasks shall be paid for under separate pay items.

E. When soil moisture is excessive or inadequate, the surfaces shall be disked, wetted or dried as required, and re-compacted. Where soil has been softened or eroded by flooding or placement during unfavorable weather, remove all affected areas and re-compact as specified.

3.03 TEST ROLLING EQUIPMENT AND PROCEDURES

A. Test rolling of subgrades shall be performed in the presence of the Owner or Engineer. When test rolling reveals unsuitable or unstable soils, the Owner and Engineer shall determine the most appropriate remedy and direct the Contractor accordingly as described above.

B. Test rolling equipment shall conform to following description:

1. Tandem axle, dual wheel dump truck.
2. Tire pressure shall be no less than ninety percent (90%) of manufacturer's recommended maximum inflation.
3. Minimum gross weight of loaded truck shall be 60,000 pounds.
4. Provide weigh slip to the Engineer.

C. Perform test rolling procedure as follows:

1. Operate equipment at a rate not to exceed three (3) mph to five (5) mph or a comfortable walking pace.
2. Adjust speed to allow the Engineer to measure any deflections and areas of rutting.
3. Operate test rolling equipment in a pattern so that affected areas are loaded with at least one (1) pass.
4. After test rolling, check subgrade for conformance to drawings, and correct any surface irregularities. Re-shape subgrade within tolerances specified.

D. Test Rolling Evaluation:
1. Rutting up to one inch (1") is acceptable.
2. Rutting in excess of one inch (1") but not more than six inches (6"), shall be considered a failure and requires reworking soil and compaction to required density.
3. Deflection, (pumping) up to one inch (1") is acceptable.
4. Deflection in excess of one inch (1") but not more than two inches (2") shall be acceptable if there is not substantial cracking or lateral movement of soil.
5. Deflection in excess of two inches (2") but not more than six inches (6") shall be considered a failure, and requires reworking soil and compaction to required density.
6. Rutting and deflection in excess of six inches (6") will require review and recommendation for corrective action by the Engineer.
7. After remedial work is performed, a final test roll shall be performed upon completion of work.
8. If remedial work is performed as directed, second test roll may be waived at discretion of the Engineer.

E. When performing Subgrade Preparation, if it is determined that the material composition is acceptable and that excessive moisture has rendered the material unstable, the Contractor shall perform air drying techniques as per Article 301.04 of the IDOT Standard Specifications before consideration of removal of the material.

3.04 SUBGRADE PREPARATION – SENSITIVE WOODED AREAS

A. Machine subgrade preparation for the trail sections in sensitive wooded areas is not required. Work required prior to installation of geotextile fabric and placement of aggregate base for sensitive wooded areas is described in the subsection "Site Grading - Sensitive Wooded Areas" contained in Section 03100 – Earthwork and Grading.

B. After final surface preparation, the Contractor shall install the specified geotextile fabric at trail sections identified as sensitive wooded areas on the plans. The geotextile shall extend one foot past the finished edge of the trail. Full rolls shall be cut to the appropriate width as needed. Roll ends shall be overlapped a minimum of 4 feet. All wrinkles shall be removed from the fabric before covering with stone. No Aggregate Base Course shall be placed until the subgrade and geotextile fabric has been approved by the Owner or Engineer.

3.05 SUBGRADE PREPARATION – TRAILS OVER EXISTING GRAVEL

A. This work shall consist of furnishing all materials, equipment and labor for the final preparation of the trail subgrade over existing gravel surfaces. Subgrade preparation shall include grading of existing gravel surfaces, leveling, profiling, filling low areas and pot holes with CA-6, cutting ridges and high points, compacting, proof rolling and testing as required.

B. Compaction shall be to a minimum ninety-five percent (95%) of maximum density based on a Standard Proctor (ASTM D-698).

END OF SECTION 05100

SECTION 05200

TRAILS

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this Section includes:

1. Trails and other pedestrian pavements with surfaces consisting of fine aggregates or hot-mix asphalt.

B. Other specification sections which may directly relate to the work in this section include, but are not limited to, include the following:

1. Section 03100 – Earthwork and Grading
2. Section 05100 – Subgrade Preparation
3. Section 03110 – Ground Stabilization
4. Section 03120 – Finish Grading and Topsoil
5. Section 03200 – Culvert Crossings

1.02 SUBMITTALS

A. Prior to placing bituminous mixtures, the Contractor shall submit to the Owner for approval the HMA mix design and name of the supplying plant with IDOT certifications.

B. Contractor shall submit source information and samples of aggregate surface materials to the Owner for approval prior to delivery and placement.

C. Contractor shall submit source information and samples of aggregate base materials to the Owner for approval prior to delivery and placement.

D. For grass trails, the Contractor shall submit seed mix composition and sources for approval by the Owner.

1.03 TESTING

A. The Owner shall employ a professional testing service to perform density and / or other tests for the base and surface courses. The Contractor shall follow the instructions of the testing technician when a specific course of action is deemed necessary.

2. PRODUCTS

2.01 AGGREGATE SURFACE COURSE – FA-21

A. Aggregate surfaces for trail construction shall be crushed aggregate material complying with IDOT Standard Specification Article 1003.01 gradation FA-21.

Aggregate shall consist of 100% crushed native material and buff in color as typically found in the Fox River valley of Northern Illinois and Southern Wisconsin. Limestone screenings are not acceptable. Furnished material shall be obtained from one of the following locations:

1. Meyer Material Company
   Dyer Lake, Wisconsin Quarry
   815-385-4920

2. Thelen Sand and Gravel
   Route 173 (North Pit)
   Antioch, Illinois
   Prime Bike Path Mix
   847-395-3313

3. Payne & Dolan, Inc.
   28327 W. Route 173
   Antioch, IL 60002
   Prime Bike Path Mix
   847-838-3700

4. or approved equal.

2.02 AGGREGATE BASE COURSE – CA-6, TYPE B

A. Aggregate materials for use as aggregate base course shall be CA-6, Type B, in conformance with IDOT Standard Specification Article 1004.01.

2.03 HOT-MIX ASPHALT MATERIALS

A. All hot-mix asphalt materials shall comply with the applicable provisions of the IDOT Standard Specifications.

B. Trail HMA Mix Design shall be Mix "D", N50 (IL 9.5 mm) as per the IDOT Standard Specifications.

2.04 AGGREGATE SUBBASE COURSE – CA-7/11, 10"

A. Aggregate materials for use as aggregate subbase course in sensitive woodland areas shall be CA-7/11, in conformance with IDOT Standard Specification Article 1004.01.

3. EXECUTION

3.01 AGGREGATE BASE COURSE – CA-6

A. This work shall consist of furnishing all materials, equipment, and labor and performance of all required operations for the installation of the aggregate base course for construction of the proposed trail and as specified in the Contract Documents. No aggregate base course shall be placed until the subgrade has been proof rolled or otherwise tested for stability and approved by the Owner or Engineer.

B. The work shall meet the applicable portions of Section 301 and 351 of the IDOT Standard Specifications except as herein noted.

C. The Contractor shall establish all grades to achieve the minimum thickness indicated in the Contract Documents prior to ordering delivery of granular base material. Owner shall not be responsible for any costs associated with the delivery of surplus granular material.

D. Aggregate base course shall be placed with a paver box or other method approved by Owner to ensure uniform width, depth, crown, and final surface smoothness. Placement of the aggregate base shall closely follow the horizontal alignment as staked in the field. The paver box operator shall possess sufficient skills and experience to perform the work.

E. Aggregate base course shall be compacted half the trail width at a time to preserve the specified crown. Compaction shall be to a minimum of ninety-five percent (95%) Standard Proctor in accordance with the IDOT Standard Specifications. Any portion of the proposed trail without the required crown after compaction will not be accepted by the Owner and the contractor will be required to take whatever steps necessary to provide the required crown. All irregularities in the trail base course shall be smoothed out. Depressions shall be filled, high points cut down and the entire aggregate base course edge shall be trimmed and finished uniformly.

F. The Contractor shall perform a proof roll of the aggregate base course with the Owner or Engineer present for approval. Any failures of the base course, as determined by Owner or Engineer, that occur during the proof rolling shall be immediately repaired and subjected to retesting until all areas have passed the testing or proof rolling.

3.02 AGGREGATE BASE COURSE – SENSITIVE WOODED AREAS

A. Aggregate base courses for trails constructed in sensitive wooded areas may require variable depths across the width of the trail to achieve the desired finish elevations due to the minimal modification of the underlying sub-base. The Contractor shall maintain the minimum base depths as shown in the plans and increase the base depth as needed to achieve the desired finish elevations and cross section. Additional base course depths required to achieve the specified surface profile shall not be measured for payment but shall be paid for separately as a variable depth aggregate base course.

3.03 AGGREGATE SURFACE COURSE – FA 21

A. This work shall consist of furnishing all materials, equipment, and labor and performance of all required operations for the installation of the aggregate surface course for construction of the proposed trail.

B. The work shall meet the applicable portions of Section 402 of the IDOT Standard Specifications except as herein noted. No surface course shall be placed until the base course has been approved by the Owner or Engineer.

C. Aggregate surface course shall be placed with a paver box or other method approved by Owner to ensure uniform width, depth, crown, and final surface smoothness.

D. The paver box operator shall possess sufficient skills and experience to perform the work.

E. Trail surface course shall be compacted half the trail width at a time, to preserve the crown, except where plans indicate a trail cross slope. Compaction shall be to a minimum of ninety-five percent (95%) Standard Proctor in accordance with the IDOT Standard Specifications. Any portion of the proposed trail without the required crown after compaction will not be accepted by the Owner and the contractor will be required to take whatever steps necessary to provide the required crown. All irregularities in the trail surface shall be smoothed out. Depressions shall be filled and the entire trail surface shall be trimmed and finished uniformly.

3.04 HOT-MIX ASPHALT SURFACE

A. The work shall meet the applicable portions of the IDOT Standard Specifications except as herein noted.

B. HMA surface course shall be placed with a paver box or other method approved by Owner to ensure uniform width, depth, crown, and final surface smoothness. Finished work which results in measurable deviations in the specified lines, dimensions or surface conditions and / or which may create unsafe conditions, inadequate drainage, segregation of materials or substantial aesthetic deficiencies shall be removed and replaced to the satisfaction of the Owner.

3.05 AGGREGATE SUBBASE COURSE – CA 7/11

A. Aggregate subbase course shall be constructed for trails constructed only in some wet sensitive wooded areas as shown on the plans. The depth of the aggregate subbase course may vary across the width of the trail to achieve the desired finish elevations due to the minimal modification of the underlying sub-base (3-4") but shall average approximately 10". The Contractor shall maintain the minimum subbase depths as shown in the plans and increase the base depth as needed to achieve the desired finish elevations and cross section. Additional base course depths required to achieve the specified surface profile shall not be measured separately for payment but shall be considered incidental to the pay item.

3.06 AGGREGATE TRAIL REPAIR

A. Any aggregate trail, in part or in whole, which is damaged by the Contractor in the course of performing the contract, shall restore all damaged areas to pre-existing condition using only the approved materials indicated in this specification. Any rutting or displacement or distortion of the original trail profile shall require that the damaged areas be removed and reconstructed per the owner's standard details, sections and specifications.

END OF SECTION 05200

SECTION 05300

ROADS AND PARKING

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this Section includes:

1. Hot-mix asphalt roads and parking areas

B. Other specification sections which may directly relate to the work in this section include, but are not limited to, include the following:

2. Section 03100 – Earthwork and Grading

3. Section 05100 – Subgrade Preparation

4. Section 03110 – Ground Stabilization

5. Section 03120 – Finish Grading and Topsoil

C. All work under this section shall meet the requirements of the latest edition of the Illinois Department of Transportation Standard Specifications for Road and Bridge Construction.

1.02 SUBMITTALS

A. Prior to placing bituminous mixtures, submit to the Owner for approval the name of the plant proposed for use and the names of approving agencies.

B. Submit certifications from plant producing bituminous mixtures that binder course and surface course meet specified standards.

1.03 TESTING

A. The Owner shall employ a professional testing service to perform density and / or other tests for the base and surface courses. The Contractor shall follow the instructions of the testing technician when a specific course of action is deemed necessary.

2. PRODUCTS

2.01 AGGREGATES

A. Coarse aggregates for Hot Mix Asphalt (HMA) base, binder and surface courses shall comply with the applicable provisions of IDOT Standard Specifications Article 1004.

B. Aggregate materials for use in an aggregate base course shall be CA-6, Type B, in conformance with IDOT Standard Specifications Article 1004.01. The source of the material shall be approved by the Owner prior to delivery. Samples of the proposed material shall be submitted to the Owner prior to delivery and installation.

2.02 BITUMINOUS PRIME COAT

A. The bituminous prime coat shall comply with Grade SS-1, Article 406.02 of the IDOT Standard Specifications.

2.03 HOT MIX ASPHALT MATERIALS

A. Bituminous materials shall comply with the applicable provisions of the IDOT Standard Specifications.

B. Binder course mixture shall be graded and mixed to comply with Mix IL 19.0 of the IDOT Standard Specifications.

C. Surface course mixture shall be graded and mixed to comply with Mixture D of the IDOT Standard Specifications.

3. EXECUTION

3.01 AGGREGATE BASE – CA-6

A. This work shall consist of furnishing all materials, equipment, and labor and performance of all required operations of the installation of the aggregate base course for construction of the proposed road and parking areas as specified and shown on the drawings. No Aggregate Base Course shall be placed until the Subgrade has been approved by the Owner or Engineer.

B. The work shall meet the applicable portions of Section 301 and 351 of the IDOT Standard Specifications except as herein noted. Compaction shall be to a minimum of ninety-five (95) percent Standard Proctor.

C. The Contractor shall establish all grades to achieve the minimum thickness indicated on the Contract Drawings prior to ordering delivery of granular base material. Owner shall not be responsible for any costs associated with the delivery of surplus granular material.

D. The Contractor may be required to perform a proof roll of the aggregate base course. Any failures of the base course, as determined by Owner or Engineer, that occur during the proof rolling shall be immediately repaired and subjected to proof rolling until all areas have passed. Owner or Engineer to approve the base course.

3.02 HOT-MIX ASPHALT PAVING

A. Binder Course

1. This work shall consist of furnishing all materials, equipment, and labor and performance of all required operations for the installation of the HMA binder course for construction of the proposed roads and parking areas.

2. HMA binder course construction shall be of the thickness indicated on the drawings and shall comply with applicable provisions of Section 406 of the IDOT Standard Specifications except as herein noted. No HMA binder course shall be placed until the base course has been approved by the Owner or Engineer.

3. Do not place HMA binder course when temperatures in the shade are below 40 degrees Fahrenheit.

B. Bituminous Prime Coat

1. Apply primer over binder course at the rate of 0.10 gallon per square yard in compliance with Article 406.05 (b) of the IDOT Standard Specifications.

C. Surface Course

1. This work shall consist of furnishing all materials, equipment, and labor and performance of all required operations for the installation of the HMA surface course for construction of the proposed roads and parking areas.

2. HMA surface course construction shall be of the thickness indicated on the drawings and shall comply with applicable provisions of Section 406 of the IDOT Standard Specifications except as herein noted. No HMA surface course shall be placed until the binder course has been approved by the Owner or Engineer.

3. Do not place HMA surface course when temperatures in the shade are below 45 degrees Fahrenheit.

D. Protection for HMA Surfacing

1. Contractor shall protect all completed sections of HMA paving until the Owner has approved the pavement for traffic.

END OF SECTION 05300

SECTION 05310

PAVEMENT MARKINGS

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this Section includes:

1. Furnishing and applying pavement markings.

B. Other specification sections which may directly relate to the work in this section include, but are not limited to, include the following:

1. Section 05300 – Roads and Parking

2. PRODUCTS

2.01 Pavement Markings shall be in accordance with Section 780 of the IDOT Standard Specifications. Materials shall be in accordance with Section 1095 of the IDOT Standard Specifications (a) Article 1095.01, Thermoplastic Pavement Markings (b) Article 1095.02, Painted Pavement Markings.

3. EXECUTION

3.01 GENERAL

A. Pavement markings shall be installed at locations shown on the plans at the dimensions indicated.

3.02 PAVEMENT MARKINGS

A. Pavement Markings shall be installed in accordance with the Construction Documents and in accordance with all applicable Federal, State, County and Local Ordinances and Standards.

END OF SECTION 05310

SECTION 05400

CONCRETE PAVEMENT

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this Section includes:

1. Poured-in-place pavement composed of Portland cement concrete with or without reinforcement, constructed on a prepared subgrade and aggregate base, with or without forms.

B. Other specification sections which may directly relate to the work in this section include, but are not limited to, include the following:

1. Section 05100 – Subgrade Preparation
2. Section 03120 – Finish Grading and Topsoil
3. Section 07300 – Cast-in-Place Concrete Structures

1.02 SUBMITTALS

A. Prior to placing Portland cement concrete mixtures, submit to the Owner for approval the name of the plant proposed for use and the names of approving agencies.

B. Submit certifications from plant producing Portland cement concrete mixtures that mixtures meet specified standards.

1.03 TESTING

A. The Owner shall employ a professional testing service to perform testing of the Portland cement concrete. The Contractor shall follow the instructions of the testing technician when a specific course of action is deemed necessary.

B. Testing shall be in accordance with applicable sections of the IDOT Standard Specifications.

2. PRODUCTS

2.01 PORTLAND CEMENT CONCRETE PAVEMENT

A. Materials and equipment shall comply with Articles 420.02 and 420.03 of the IDOT Standard Specifications.

AGGREGATE BASE COURSE – CA-6

B. Aggregate materials for use as aggregate base course shall be CA-6, in conformance with IDOT Standard Specification Article 1004.01.

3. EXECUTION

3.01 AGGREGATE BASE COURSE – CA-6

A. This work shall consist of furnishing all materials, equipment, and labor and performance of all required operations for the installation of the aggregate base course for construction of the proposed concrete pavement and as specified in the Contract Documents. No aggregate base course shall be placed until the subgrade has been proof rolled or otherwise tested for stability and approved by the Owner or Engineer.

B. The work shall meet the applicable portions of Section 301 and 351 of the IDOT Standard Specifications except as herein noted.

C. The Contractor shall establish all grades to achieve the minimum thickness indicated in the Contract Documents prior to ordering delivery of granular base material. Owner shall not be responsible for any costs associated with the delivery of surplus granular material.

3.02 PORTLAND CEMENT CONCRETE PAVEMENT

A. This work shall consist of furnishing all materials, equipment, labor and transportation and performance of all required operations of the installation, finishing, protection and curing of the Portland cement concrete pavement. No pavement shall be placed until the Subgrade has been approved by the Owner or Engineer.

B. The work shall meet the applicable portions of Section 420 of the IDOT Standard Specifications.

C. The Contractor shall establish all grades to achieve the minimum thickness indicated on the Contract Drawings prior to ordering delivery of the Portland cement concrete. Owner shall not be responsible for any costs associated with the delivery of surplus Portland cement concrete material.

D. Joints shall be in conformance with the plans and Article 420.05 of the standard specifications.

E. Contractor shall protect all completed sections of Portland cement concrete pavement until the Owner has approved the pavement for traffic.

END OF SECTION 05400

SECTION 05420

CONCRETE CURBS

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this Section includes:

1. Portland cement concrete curbs and combination curbs and gutters.

B. Other specification sections which may directly relate to the work in this section include, but are not limited to, include the following:

1. Section 03100 – Earthwork and Grading
2. Section 05100 – Subgrade Preparation
3. Section 05300 – Roads and Parking
4. Section 07300 – Cast-in-Place Concrete Structures

1.02 SUBMITTALS

A. Prior to placing Portland cement concrete mixtures, submit to the Owner for approval the name of the supplying and design mix certifications.

B. Submit certifications from plant producing Portland cement concrete mixtures that mixtures meet specified standards.

1.03 TESTING

A. The Owner may employ a professional testing service to perform testing of the Portland cement concrete. The Contractor shall follow the instructions of the testing technician when a specific course of action is deemed necessary.

B. Testing shall be in accordance with applicable sections of the IDOT Standard Specifications.

2. PRODUCTS

2.01 GENERAL

A. Work shall be in accordance with Section 606 for Concrete Gutter, Curb, Median and Paved Ditch of the IDOT Standard Specifications.

2.02 AGGREGATE BASE

A. Aggregate materials for use as aggregate base course shall be CA-6, Type B, in conformance with IDOT Standard Specification Article 1004.01. The source of the material shall be approved by the Owner prior to delivery.

2.03 PORTLAND CEMENT

A. Portland cement concrete shall meet the requirements of IDOT Class "SI" and Section 1020 of the IDOT Standard Specifications.

3. EXECUTION

3.01 PORTLAND CEMENT CONCRETE CURBS AND GUTTERS

A. Work shall be in accordance with Section 606 for Concrete Gutter, Curb, Median and Paved Ditch of the IDOT Standard Specifications.

B. All work shall be in protected from damage until completion of the project and replaced should damage occur.

END OF SECTION 05410

SECTION 06100

BOULDER RETAINING WALLS

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. This section includes:

1. Construction of boulder retaining walls and slope treatments.

2. Installation of geotextile fabric, aggregate base, aggregate backfill and drain pipe where required.

B. RELATED SECTIONS

1. Other specification sections which may directly relate to the work in this section include, but are not limited to, the following:

a. Section 03100 – Earthwork and Grading

b. Section 03120 – Finish Grading and Topsoil

2. PRODUCTS

2.01 BOULDERS

A. Boulders shall be naturally occurring field stones which have been rounded by glaciation. The boulders shall be of mixed geologic origin, primarily granite, as typically found in the Fox River basin of northern Illinois and southern Wisconsin. Boulder colors shall generally range from buff to various shades of brown and gray. The boulders shall be provided in evenly graded size ranges and proportions as specified in the Plans. Refer to the appropriate detail(s) for specific size requirements. The boulders shall be from:

1. Super Aggregates
5435 Bull Valley Rd. Suite 330
McHenry, IL 60050
(815) 385-8000

2. or approved equal.

2.02 GEOTEXTILE FABRIC

A. Geotextile fabric shall be non-woven; needle punched polypropylene staple fiber that is UV stabilized and resistant to chemicals, mildew and insects.

B. The geotextile fabric shall be:

1. Thrace-LINQ GTF-225EX, as distributed by:

2. or approved equivalent meeting the following criteria:

Grab Tensile Strength	215 lbs.
Elongation	50%
Puncture	600 lbs.

Permittivity	1.3 sec^{-1}

2.03 AGGREGATE BASE AND BACKFILL (WHEN REQUIRED)

A. Aggregate backfill and bedding material shall be CA-7 (3/4" chips) or CA-7/11 (1" +/- chips) in conformance with IDOT Standard Specifications Article 1004.01.

2.04 DRAIN PIPE (WHEN REQUIRED)

A. Drain pipe shall be corrugated, perforated, single-wall high density polyethylene drain pipe, 4 inches in diameter. The pipe shall be provided with a geotextile filter fabric sock.

2.05 SUBMITTALS

A. For sources of boulders from any supplier other than that specified herein, the Contractor shall submit samples of the material for approval by the Owner prior to delivery and placement. For geotextile fabrics, the Contractor shall submit a product tag or other proof of product compliance to the Owner before installation. Use of any product other that specified requires the submittal of samples and complete manufacturers specifications to the Owner for approval.

3. EXECUTION

3.01 SITE PREPARATION

A. All existing topsoil in the work area which is subject to grading and construction of the boulder retaining wall shall be stripped and stockpiled. The subgrade at the work area shall be cut, filled and otherwise shaped to create the required lines, grades and wall batter angle as shown on the Plans. The subgrade at the base of the wall shall be excavated to form a trench to assure the proper burial depth of the first course of boulders. The trench shall be of adequate depth to accommodate any required aggregate base. The subgrade at the wall base trench shall be undisturbed clay soil or compacted to a minimum of 95% density based on a Standard Proctor (ASTM D-698). If the required compaction density cannot be achieved due to the presence of unsuitable material or conditions the Contractor shall immediately inform the Owner or Engineer to determine the appropriate method to achieve the required subgrade conditions.

3.02 GEOTEXTILE FABRIC AND AGGREGATE BASE (WHEN REQUIRED)

A. Place and secure the geotextile fabric where indicated in the Plans. Aggregate backfill shall be placed and compacted in the subgrade trench to the depths and dimensions shown on the Plans. Compact the material in uniform lifts of a maximum loose thickness of six (6) inches. Elevations at the top of the finished aggregate base shall be such that proper burial depths of the first boulder course are achieved.

3.03 AGGREGATE BACKFILL AND DRAIN PIPE (WHEN REQUIRED)

A. Place the drain pipe as shown on the Plans, assuring that no part of the pipe is crushed, deformed or disconnected. Assure that the pipe outfall is properly located, functional and free of debris. Aggregate backfill shall be placed as shown on the Plans and in proper relationship to the geotextile fabric.

3.04 BOULDER PLACEMENT

A. The Contractor and Owner shall meet at the work site prior to the start of construction to verify the type of boulder retaining wall and the finished appearance desired by the Owner. The Contractor shall place the boulders to accurately reflect the dimensions, grades and batter angle as shown on the Plans. One of two types of boulder retaining walls will be indicated on the Plans for each wall location:

1. STANDARD TYPE

Boulders shall be fitted and placed individually to achieve minimal gaps between stones and with no geotextile fabric or backfill materials visible. To achieve minimal gaps, portions of the wall may require the placement of multiple layers of stones. The finished top of wall shall be uniform in elevation or slope, depending on the desired intent. Boulder sizes shall be evenly distributed throughout the wall face.

2. SLOPE TREATMENT TYPE

Boulders may be placed individually or dumped in place and adjusted by hand or machine. To achieve complete coverage with no ground or geotextile fabric visible, the wall shall require the placement of multiple layers of stone and increased depth except where the largest stones are located. The depth of the wall may be indicated on the Plans. Boulder sizes shall be uniformly distributed throughout the face of the wall.

3.05 BOULDERS – INDIVIDUAL PLACEMENT

A. This work includes the setting of individual boulders for largely aesthetic purposes. The Contractor and Owner shall meet at the work site prior to the start of construction to determine the selection and location of individual boulders and the finished appearance desired by the Owner. The Contractor shall place the selected boulders as marked in the field by the Owner.

END OF SECTION 06100

SECTION 07300

CAST-IN-PLACE CONCRETE

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this section includes:
   1. All poured in place Portland Cement Concrete for pavements, walls, footings, structures, vaults, curbs and other improvements.

1.01 RELATED WORK

A. Section 05400 – Concrete Pavement

B. Section 05410 – Exposed Aggregate Concrete Pavement

C. Section 05420 – Concrete Curbs

D. Section 07510 – Evaporator Restroom Facility

1.02 QUALITY ASSURANCE

A. Cast-in place concrete work shall be performed in accordance with ACI 318, unless specified otherwise. Concrete materials and operations will be tested and inspected as the work progresses. Failure to detect any defective work or materials shall not in any way prevent later rejection when such defect is discovered nor shall it obligate the Owner for final acceptance.

B. The Owner may employ a professional testing service to perform testing of the Portland cement concrete. The Contractor shall follow the instructions of the testing technician when a specific course of action is deemed necessary.

C. Testing shall be in accordance with applicable sections of the IDOT Standard Specifications.

D. Testing Services

   1. The following testing services shall be performed by the designated Testing Agency:

      a. Review and/or check-test the Contractor's proposed materials for compliance with the specifications.

      b. Review and check-test the Contractor's proposed mixture design when required by the E/A.

      c. Secure production samples of materials at plants or stockpiles during the course of the work and test for compliance with the specifications.

Tests of cement and aggregates shall be performed to ensure conformance with Specification requirements. Manufacturer's certification that cement materials meet Specification requirements and results of manufacturer's own material tests will be acceptable in lieu of tests by inspection and testing firm. Aggregates testing shall be performed by independent inspection and testing firm, for compliance with ASTM C33, including limits for deleterious substances, grading and physical property requirements.

d. Conduct strength tests of the concrete during construction in accordance with the following procedures:

1. Secure composite samples in accordance with ASTM C172. Each sample shall be obtained on a random basis, avoiding any selection of the test batch other than by a number selected at random before commencement of concrete placement.

2. Mold and cure four specimens from each sample in accordance with ASTM C31. Any deviations from the requirements of this Standard shall be recorded in the test report.

3. Test specimens in accordance with ASTM C39. Two specimens shall be tested at 28 days for acceptance and one shall be tested at 7 days for information. One specimen shall be held should additional testing be required and ordered. The acceptance test results shall be the average of the two specimens tested at 28 days. If one specimen in a test manifests evidence of improper sampling, molding or testing, it shall be discarded and the strength of the remaining cylinder shall be considered the test result. Should both specimens show any of the above defects, the entire test shall be discarded.

4. Make at least one strength test for each 50 cubic yards or fraction thereof, of each mixture design of concrete placed in any one day.

5. When the total quantity of concrete with a given mixture design is less than 50 cubic yards, the strength tests may be waived by the E/A if, in his judgment, adequate evidence of satisfactory strength is provided, such as strength test results for the same kind of concrete supplied on the same day and under comparable conditions to other work or other projects.

e. Determine slump of the concrete sample for each strength test and whenever consistency of concrete appears to vary, using ASTM C143.

f. Determine air content of normal weight concrete sample for each strength test in accordance with either ASTM C231, ASTM C173 or ASTM C138.

g. Determine temperature of concrete sample for each strength test.

E. Duties and Authorities of Designated Test Agency

1. Representatives of the agency shall inspect, sample and test the materials and the production of concrete as required by the E/A. When it appears that any material furnished or work performed by the Contractor fails to fulfill specification requirements, the testing agency shall report any such deficiency to the E/A and the Contractor.

2. The testing agency shall report all test and inspection results to the E/A and Contractor immediately after they are performed. All test reports shall include the exact location in the work at which the batch representing a test was deposited. Reports of strength test shall include detailed information on storage and curing of specimens prior to testing.

3. The testing agency and its representatives are not authorized to revoke, alter, relax, enlarge or release any requirements of the contract documents, nor to approve or accept any portion of the work.

F. Responsibilities and Duties of Contractor

1. The Contractor shall provide the necessary testing services for the following:

a. Qualification of proposed materials and the establishment of mixture designs.

b. Other testing services needed or required by the Contractor.

c. The use of testing services shall in no way relieve the Contractor of the responsibility to furnish materials and construction in full compliance with the contract documents.

d. The Contractor shall submit to the E/A the concrete materials and the concrete mix designs from the redi-mix supplier proposed for use for each class of concrete with a written request for acceptance. This submittal shall include the results of all testing performed to qualify the materials and to establish the mix designs. No concrete shall be placed in the work until the Contractor has received such acceptance in writing.

e. To facilitate testing and inspection, the Contractor shall:

1. Furnish any necessary labor to assist the designated testing agency in obtaining and handling samples at the project or other sources for materials.

2. Advise the E/A and the testing agency sufficiently in advance of operations to allow for completion of quality tests and for the assignment of personnel.

3. Provide and maintain for the sole use of the testing agency adequate facilities for safe storage and proper curing of concrete test specimens on the project site for the first 24 hours as required by ASTM C31.

4. Submit copies of mill test reports for shipments of cement and reinforcing steel to the E/A when required.

1.03 REFERENCE STANDARDS

A. ACI 301 - Specifications for Structural Concrete for Buildings.

B. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.

C. ACI 305 - Recommended Practice for Hot Weather Concreting.

D. ACI 306 - Recommended Practice for Cold Weather Concreting.

E. ACI 318 - Building Code Requirements for Reinforced Concrete.

F. ASTM C33 - Concrete Aggregates.

G. ASTM C94 - Ready-Mixed Concrete.

H. ASTM C150 - Portland Cement.

I. ASTM C171 - Sheet Materials for Curing Concrete.

J. ASTM C260 - Air Entraining Admixtures for Concrete.

K. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.

L. ASTM C494 - Chemical Admixtures for Concrete.

2. PRODUCTS

2.01 CONCRETE MATERIALS

A. Cement: Portland Cement, ASTM C150, Type I.

B. Fine and Coarse Aggregates: ASTM C33.

C. Water: Clean and free from injurious amounts of oil, alkali, organic matter, or other deleterious material.

2.02 ADMIXTURES

A. Air Entrainment: ASTM C260.

B. Chemical: ASTM C494, Type A - Water reducing. Type B - retarding. Type C - accelerating. Type D - water reducing and retarding. Type E - water reducing and accelerating.

2.03 CURING MATERIALS

A. Curing Compound: Resin based, type; ASTM C309, Type 2 - white pigmented, Class B.

B. Polyethylene Film: 4 mil. thick, white opaque color, ASTM C171.

2.04 ACCESSORIES

A. Bonding Agent: Two component modified epoxy resin.

B. Vapor Barrier: 4 mil. unless otherwise shown on the Drawings. Clear polyethelene film, type recommended for below grade application.

C. Non-Shrink Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 2,400 psi in 2 days and 7,000 psi in 28 days.

2.05 CONCRETE MIXES

A. Mix concrete in accordance with ASTM C94.

B. Provide concrete of the following strength:

1. Compressive strength (28 day): 4,000 psi.
2. Entrained Air Content: As indicated in ACI 301, Table 3.4.1.
3. Cement Content: Minimum 564 pounds per cubic yard.
4. Water Cement Ratio: Maximum 0.45.
5. Slump: 1-inch minimum, 3-inch maximum for footings and substructure walls; 4-inch maximum for slabs, pavement, beams, reinforced walls and columns. Loss of slump in pumping shall not exceed 1-1/2-inch.

C. Select proportions for normal weight concrete in accordance with ACI 301, 3.8, Method 1.

D. Use water reducing admixtures only when accepted by Engineer.

E. Use accelerating admixtures only in cold weather and only when accepted by Engineer. If accepted, use of admixture will not relax cold weather placement requirements. Calcium chloride shall not be used.

F. Use retarding admixtures only in hot weather and only when accepted by Engineer.

G. Use air entrained concrete for all concrete exposed to the exterior.

3. EXECUTION

3.01 PLACING CONCRETE

A. Place concrete in accordance with ACI 304.

B. Notify Engineer minimum 24 hours prior to commencement of concreting operations.

C. Ensure anchors, seats, plates and other items to be cast into concrete are placed, held securely and will not cause hardship in placing concrete. Rectify same and proceed with Work.

D. Maintain records of poured concrete items. Record date, location for pour, quantity, air temperature, and test samples taken.

E. Ensure reinforcement, inserts, embedded parts, and formed expansion and contraction joints are not disturbed during concrete placement.

F. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent. Apply bonding agent in accordance with manufacturer's recommendations.

G. Pour concrete continuously between predetermined construction and control joints. Do not break or interrupt successive pours such that cold joints occur.

H. Pour floor slabs in checkerboard or saw cut pattern indicated on Contract Drawings. Saw cut control joints within 24 hours after finishing. Use 3/16-inch thick blade, cutting l/4-inch into depth of slab thickness.

I. In locations where new concrete is dowelled to existing Work, drill holes in existing concrete, insert steel dowels, and pack solidly with non-shrink grout.

J. Honeycomb or embedded debris in concrete is not acceptable. Notify Engineer upon discovery.

K. Conform to ACI 305 when concreting during hot weather.

L. Conform to ACI 306 when concreting during cold weather.

M. Maintain concrete cover around reinforcing in accordance with ACI 3l87 or as otherwise indicated on Contract Drawings.

N. Install vapor barrier under interior slabs on grade. Lap joints minimum 1 foot and seal. Do not disturb or damage vapor barrier while placing concrete reinforcing. If damage does occur, repair areas before placing concrete. Use vapor barrier materials, lapped over damaged areas minimum 6-inches in all directions and sealed.

O. Separate slabs-on-grade from vertical surfaces where shown with l/2-inch thick joint filler. Extend joint filler from bottom of slab to within l/2-inch of finished slab surface. Refer to Section 03250 for joint filler requirements.

3.02 CURING AND PROTECTION

A. Beginning immediately after placement, protect concrete from premature drying, excessive hot or cold temperatures, and mechanical injury. Maintain concrete with minimal water loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

B. One additional test cylinder shall be taken during cold weather concreting, and cured on the Work Site under same conditions as concrete it represents.

C. One slump test and one air test shall be taken for each set of test cylinders taken.

D. Follow sampling and testing procedures referred in ASTM C94.

END OF SECTION 07300

SECTION 07510

EVAPORATOR RESTROOM FACILITY

Revised / Reviewed: September 28, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this Section includes:

1. Furnishing, delivering and installation of a plant-fabricated evaporator restroom and foundation / vault.

1.02 QUALITY ASSURANCE

A. Contractor Qualifications: The work described in this section requires specialized knowledge, experience, skills and equipment to successfully complete. The Contractor shall possess the full capability to execute the work as specified, including trained, experienced and skilled personnel and possession or access to the required equipment.

B. Shop Drawings:

1. The Contractor shall supply three (3) copies of plant-fabricated evaporator restroom building shop drawings which shall be prepared by a structural engineer licensed in the State of Illinois. All drawings, calculations and other submittals shall bear the Structural Engineer's signed licensure seal.

2. Shop drawing shall be original drawings, specifications and calculations prepared specifically for this project and not generic 'boiler plate' documents from other unrelated projects. They shall include the project name, owner's project number, location and date.

3. Shop drawings shall include all plans, elevations, sections, details, labels and notes to fully describe material type, quantity, quality and size; layout, orientation, location, fabrication, erection and setting of assemblies; and references and industry standards to govern the construction.

4. The Contractor shall carefully review the shop drawings for discrepancies, omissions, material availability, and construction conflicts. The Contractor shall clearly stamp and sign the shop drawings with any suggested changes, deviations and / or approval based on this review before submittal to the Owner.

5. Shop drawings, submittal requirements, procedures and schedules for plant-fabricated building shall meet the requirements contained in Subsection 1.09 of Section 01000, General Project Requirements.

C. Approved Equals: In order to be approved as an equal for this project, the following list of submittals must be presented one week prior to bid date in order to provide the Owner's representative with sufficient time to review said alternative request.

1. Manufacturer's literature: Submit complete manufacturer's literature and technical data; in particular a description of the vault evaporator and stand-alone photovoltaic systems that are used.

2. Certifications: Submit, via transmittal, properly identified with project name, location and date, certification of manufacturers compliance with the requirement specified herein signed and sealed by a Structural Engineer registered in the State of Illinois.

3. Submit (2) two, twelve inch samples and specification sheets on the following items: basement materials, roof decking, laminated beams, fascia, interior finish, and exterior siding. Note: materials must meet specifications.

4. Provide (3) three locations and contacts of similar buildings of this nature, built within the last six months.

D. All approved equals shall be notified with written statements of their approval. Manufacturers shall not bid this project without this written notification.

2. PRODUCTS

2.01 EVAPORATOR RESTROOM FACILITY

A. GENERAL

1. The structure shall be National Value Engineered Structures Model OUTBACK W/URINAL, WITH ROCK & DC POWER, as specified and as manufactured by:

   a. Biological Mediation Systems, LLC.
   P.O. Box 650
   Fort Collins, CO 80522-0650
   800-524-1097

   b. Or approved equal

2. The structure shall consist of two factory constructed units, the building and the vault.

   a. The vault shall be a certified water tight vault with a factory installed spray in two part 100% solid polyurethane chemical resistant liner. The vault shall be built by a precast company that is currently certified by the National Precast Concrete Association.

   b. The restroom module shall be factory constructed complete with trusses, decking and roofing materials.

3. The system shall include the Model WRS Vault Evaporator (patent #5,573,661). The WRS system shall include the evaporator unit, vent pipe, roof mounted ventilator and factory installed spray in 2 part 100% solid polyurethane chemical resistant liner.

4. Provide a stand-alone photovoltaic package to operate the BMS WRS system (patent #5,573,661). The photovoltaic package shall be BMS Model 1224 with battery backup for 24 hours operation. The photovoltaic package shall be

factory installed and tested prior to deliver. The ventilator fan to operate the WRS system shall operate at a voltage range of 12-28 volts.

B. PRECAST CONCRETE FLOOR SYSTEM AND FOUNDATION/VAULT

1. Restroom floor: The floor shall be a one piece structural monolithic precast concrete slab manufacture in a closed environmentally controlled plant. Concrete to develop 5,000 psi in 28 days. The floor slab shall be designed and engineered with pick-up points for possible future relocation. The slab shall be 6" thick concrete with a 6" steel angle at the lift points, the floor finish shall have a non-skid broom finish. After the slab is cured it will be sealed with a two part epoxy coating. The structural rebar shall be welded to the perimeter angle, the minimum rebar size shall be #4 at 12" on center each way. Anchor bolts shall be 5/8" with 2x2x3/16 plate washers. The anchor bolts will be embedded in a minimum 4" of concrete, the walls will be installed directly on concrete. Installation of walls on ferrous (steel) surfaces will not be permitted. Floor drains will be precast into the slab.

2. Foundation shall be manufactured in a closed environmentally controlled plant. Construction shall be 6" thick concrete floor with 4" concrete walls. Concrete to develop 5,000 psi in 28 days. The floor slab shall be designed and engineered with pick-up points for possible future relocation.

3. Bidders must have a minimum of 3 years of experience in building these floor systems. The floor system shall be built by a precast company that is currently certified by the National Precast Concrete Association.

C. WOOD

1. Structural wood members shall be S.Y.P., S.P.F., or Hem Fir.

2. Wall Framing: Dried, nominal 2 x 4 and 2 x 6 at nominal 16" on center. Walls shall be built in single piece sections. All nails for structural framing shall be mechanically galvanized.

3. Roof Framing: Engineered trusses.

4. Roof Sheathing: 15/32 "CDX" plywood.

D. THERMAL AND MOISTURE PROTECTION

1. Roofing Material: Shall be 26 ga. metal roofing, factory installed with matching trim. Roof color to be #49 Burnished Slate (26 GA/Colorfast 45 finish). It shall be installed over 30# roof underlayment per Manufacturer's recommendations.

2. Soffit/Fascia shall be 26 ga. metal "J" trim to match roof color.

3. Drip Edge: 3" x 3" 26 Ga. metal to match roof color.

4. Sealants: 100% silicone sealant and latex paintable caulk.

5. Moisture Barrier: 30# felt.

E. FINISHES

1. Restroom Interior: Vandal resistant seamless sanitary system. Product shall be Kemlite with Surfaseal. Fiberglass reinforced plastic wall system, floor to ceiling, corner to corner void of molding and drive rivet fasteners. Will not mildew, rot or rust. Easy to clean, resistant to high moisture and corrosive environment, can be scrubbed or steam cleaned. Graffiti and scratch resistant, color white, 3/32: thick, class A, pebble grain finish, fiberglass reinforced plastic (FRP) laminated to ACX Plywood.

2. Restroom Ceiling: Ceiling shall be fiberglass reinforced plastic (FRP). Color white.

3. Interior Wall Corner: 1 ½" x 1 ½". 93" stainless steel, fastened to wall with stainless steel vandal resistant screws.

4. Base: 4" x 1/8" extruded aluminum 6063-T6, clear anodized finish, with eased top edge, fastened to wall with stainless steel vandal resistant screws.

5. Exterior Siding: Unstained Rough Sawn Cedar plywood with battens and 3' wainscoting of rock. Rock style to be Lakeshore River Rock (CSY-2004).

6. Corner, Window and Door Trim: 1 X Unstained Cedar.

7. Painting and/or staining: The door shall be painted by supplier to match the metal roof. All cedar trim and siding shall be painted and/or stained by Owner.

F. DOORS AND WINDOWS

1. Material:

   a. Doors shall be 18 gauge steel.
   b. Frames shall be 16 gauge steel. Frames shall have a wrap-around design to cover the exterior and interior wall.

2. Hardware: All hardware shall meet ADA.

   a. Closure: LCN 146128
   b. Deadbolts: Schlage B663, with #23-030 Conventional Full Size Interchangeable Core (FSIC). Owner shall rekey core to its desired keying.
   c. Door Lever: Schlage Athens ND40S-626
   d. Hager Hinges: ECBB1100
   e. Door Sweep MM1480A

3. Windows: 12" x 48" 6" Acrylic block, 1½" thick, Glacier Wave, White vinyl frame.

4. Wall Vents: 16 gauge metal with ¼" bird and bug screen.

G. ELECTRICAL shall be BMS Model 1224 factory installed photovoltaic system designed for 24 hour operation to include:

1. 2 40-watt panels
2. 1 Sunsaver 6 w/LVD controller
3. 1 Deka 98AH Battery
4. 30 amp disconnect
5. 2 30 amp fuses
6. 70' wire
7. 1 6 circuit fuse block
8. 1 Ground rod kit (field installed by contractor)
9. 1 DC Fan

H. SPECIALTIES: All specialties to meet ADA per material and installation.

1. 18" Grab Bar: 1 ½" diameter stainless steel with concealed fasteners.
2. 36" Grab Bar: 1 ½" diameter stainless steel with concealed fasteners.
3. 42" Grab Bar: 1 ½" diameter stainless steel with concealed fasteners.
4. Fixtures: H18 fiberglass toilet.
5. Urinal: BMS model 101.
6. Toilet Paper Holders: Furnished and installed by Owner
7. Hand Sanitizers: Furnished and installed by Owner
8. Toilet Partition (Where required): 1" thick high density POLY, mounted on continuous brackets at walls and pilasters. System shall be floor mounted. Door hinges, slide bolts, and hardware shall be chrome plated zamac and or aluminum. Product shall be recyclable and new materials shall contain 100% Post Consumer HDPE with a Class A fire rating.

3. EXECUTION

3.01 SITE PREPARATION AND ACCESS

A. Plant-fabricated building shall be installed at the location and elevation shown on the Drawings. They shall be accurately located and staked using the approved control points.

B. Contractor shall provide a clear and safe access to the building site for the delivery truck. If access cannot be provided via delivery truck, the contractor shall take delivery at an alternate site and will be responsible for final transportation to the job site at no additional charge to the Owner.

C. Manufacturer's representative will be onsite during delivery for questions but will not provide labor for installation.

D. The crane for off-loading and setting the structure on site shall be the responsibility of the Contractor. A spreader bar assembly will be required. The dimensions for the lifting points shall be outlined on the shop drawings. The shop drawings must be

reviewed by the crane company for clarification as to the requirements of the spreader bar assembly.

3.02 EXCAVATION

A. Blade off organic matter and stockpile for later use.

B. Dispose of trash or rubble.

C. Excavate for all footings, piers, tanks and all work included in this contract. Footings shall extend to the required bearing of 3000 lbs/sf regardless of dimensions. Protect the completed excavation against freezing.

D. Excavation required shall be as specified by the Manufacturer.

3.04 BACKFILL

A. Backfill walls, footings, foundations 4" below finish grades outside buildings. Dispose of all excess material off-site. Provide additional fill to meet grades as shown.

B. Sand, clay, gravel, crushed stone or other non-organic or imperishable materials may be used as backfill. Deposit material in 6" layers and compact to 95%. Mixing of dissimilar materials is unacceptable.

3.05 UTILITY HOOKUPS

A. Contractor shall install additional vent pipe and roof curb after the building has been delivered.

B. Contractor shall install the roof vent fan and final electrical connection to the fan.

3.06 ANCHORING OF THE RESTROOM

A. Anchor the restroom to the foundation per Manufacturer's drawings and specifications. This includes weld plates between the floor slab and vault to be supplied by supplier and field installed by the Contractor.

3.07 START UP

A. Contractor shall be responsible for start-up to ensure toilet building is functioning properly.

B. Add one (1) to two (2) inches of fresh water to the vault before opening the facility.

C. Toilet building shall not be used as a toilet facility during construction by the Contractor. Contractor is responsible to provide Owner a clean and sanitary facility at the end of construction. Vault shall be free of waste or construction debris.

END OF SECTION 07510

SECTION 08300

SIGNAGE

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this Section includes:

1. Furnishing and installing permanent signs.

2. PRODUCTS

2.01 Signs shall be in accordance with the Manual on Uniform Traffic Control Devices for Streets and Highways, 2009 Edition and as indicated in the plans.

3. EXECUTION

3.01 GENERAL

A. Signs shall be installed at locations shown on the plans.

3.02 SIGNS

A. Signs shall be installed in accordance with the Manual on Uniform Traffic Control Devices for Streets and Highways, 2009 Edition and applicable Federal, State, County and Local Ordinances and Standards.

END OF SECTION

SECTION 09110

HERBACIDE TREATMENT

Revised / Reviewed: February10, 2017

1. GENERAL

1.01 DESCRIPTION

A. Work under this section includes:

1. Preparation of and application of herbicides for eliminating undesirable plants in the process of landscape establishment and restoration.

B. Other specification sections which directly relate to the work of this section include, but are not limited to, the following:

1. Section 02100 Temporary Access and Facilities
2. Section 02300 Site Resource Protection
3. Section 02500 Vegetation Removal

1.02 QUALITY ASSURANCE

A. The work described in this section requires specialized knowledge, experience, skills and equipment to perform successfully. The proposed work site is a forest preserve and may contain flora, fauna and / or soils which are highly sensitive to disturbance, herbicide drift and overspray.

B. This Contract includes work tasks and site inspections which require the identification of native, introduced and / or invasive plants that may exist on the site at any time. The Contractor shall employ an experienced biologist, botanist, ecologist, or equivalent to oversee the work, oversee all herbicide use and recommend best management practices to assure that the herbicide applications are effective and that desirable species are not impacted.

C. The work in this section includes the use of herbicides for control of undesirable plant species. The Contractor shall employ persons trained in the prescription, preparation and application of such herbicides that are typically used in native landscape management and are licensed by the State of Illinois as Pesticide Operators or Applicators. The Contractor must submit a valid copy of these licenses for all personnel performing herbicide application on the project.

D. All pay items for herbicide application shall include a guaranty for effectiveness in eliminating the target species. Should the initial application fail to eliminate the target species, the Contractor shall re-apply the herbicide until those target species are eliminated at no additional charge to the Owner. The manufacturer's Product Data Sheet list of species controlled shall be used to determine effectiveness.

E. The Owner shall inspect the treated areas approximately 2 to 4 weeks after application to determine the effectiveness of the treatment. If the initial treatment is

judged to be less than 100% effective, additional spot treatments may be ordered by the Owner until the target species are adequately eliminated.

1.03 SUBMITTALS

A. The Owner reserves the right to approve the Contractor or Subcontractor who will be directly involved in performing the required work. This approval shall be dependent on the submittal to the Owner, at least fourteen (14) days prior to the start of work, of the following:

1. A list of ten (10) projects similar in scope and size which have been satisfactorily completed in the past five (5) years that clearly demonstrate the ability to complete the work as specified. This submittal shall include the project name, project location, completion date, owners' name and contact information, size in acres and a detailed description of the work performed, landscape composition, equipment and herbicides used and any follow up work. In addition all projects listed must involve selective species removal, tree preservation and herbicide applications.

2. A list of every person who is proposed to perform work with herbicides on the project, their years of licensed experience working with herbicides and proof of their possession of a current Illinois Pesticide Applicators or Operators License.

3. A list of all equipment proposed for use on the project, including type, make, model, year and Ground Pressure Rating (GPR) where applicable.

B. The Contractor shall submit a Product Data Sheet (PDS) and Material Safety Data Sheet (MSDS) for each herbicide to be utilized for the work before the start of work.

1.04 SAFETY

A. It is the responsibility of the Contractor to perform the work according to the highest industry safety standards, the guidelines and requirements of the Occupational Safety and Health Administration (OSHA) and all other applicable local, state and federal requirements.

B. The work described herein is being performed on a public forest preserve and as such portions of the site may be either open to or generally accessible to the public. Extreme caution must be exercised when operating machinery or performing any tasks where there is the potential for personal injury.

2. PRODUCTS

2.01 HERBICIDES

A. Glyphosate 41.00% (e.g. Roundup Pro)

B. Glyphosate 53.80% (e.g. Aquamaster)

C. Broadleaf Weed Control (post-emergence) shall be a three (3) component ("3-way") mixture containing 2,4-D, MCPP-p (mecoprop) and dicamba.

D. Clopyralid 40.90% (e.g. Transline)

E. Trichlopyr 44.40% (e.g. Garlon 3A)

F. Trichlopyr 61.60% (e.g. Garlon 4)

2.02 ADDITIVES

A. Non-Ionic Surfactant for Herbicides

B. Basal Oil Carrier

C. pH Balancer

D. Dye Marker

3. EXECUTION

3.01 GENERAL

A. Specific project requirements for herbicide treatments may be indicated on the plans.

B. No mobilization or other work shall commence until a meeting with the Owner, Contractor and designated foreman is conducted on site. At this time the scope of work shall be reviewed and any specific instructions shall be identified. The Contractor shall notify the Owner at least 24 hours before the start or restart of work. For large scale blanket applications, the area shall be measured for payment before work begins.

C. Additional information and instructions regarding the work may be conveyed by the Owner through markings in the field. This may include staking or flagging for treatment limits, individual plants to be treated, restricted access areas, access routes and other specific requirements.

D. Before proceeding, contractor shall provide the Owner with a list of herbicides, surfactants, water conditioners, dyes, pH balancers, and other chemicals and adjuvants to be used for implementation of this project. The Contractor shall maintain on site at all times the appropriate Material Safety Data Sheets (MSDS) for all substances utilized on site. Herbicide application records shall be provided to the Owner on a weekly basis in the Owner's format as required for Illinois EPA NPDES permit compliance.

E. Herbicides shall be applied by a State of Illinois licensed applicator or licensed operator working under the direct (on site) supervision of a licensed applicator. The Owner requires that all applicators and operators working for the Contractor shall have on file with the Owner a copy of their herbicide licenses.

F. The Owner shall approve of all equipment used to apply herbicides. These may include mechanized boom spraying, portable back pack sprayers, wick applicators or other equipment and techniques.

G. The Contractor shall be responsible for positively identifying all species before they are treated with herbicide. Extreme caution shall be used to prevent over-application of herbicides and non-target damage to desirable plants. Only herbicides approved for aquatic applications shall be used where open water or saturated soils is present.

H. During the performance of the herbicide treatments, should any uncertainty arise regarding the specific plants to be treated or avoided, the Contractor or foreman shall immediately inform the Owner for a determination in the field.

I. It is of utmost importance during herbicide treatment operations that no individual plants of species to be preserved or otherwise identified as desirable to the Owner be damaged or come in contact with herbicides. Should any such significant damage or unauthorized removal occur which causes a loss of property to the Owner, the Contractor shall be required to perform the following remediation:

1. Removal and disposal of significantly damaged plants at no additional cost to the Owner.

2. Replacement of lost plant material, in the form of new plant material at a replacement ratio of two inches (2") of replacement for each one inch (1") of plant material damaged or lost. The Owner shall determine or approve the species, source, size, quantity and planting locations of the replacement material before any replacement work is started. The Contractor shall obtain, plant, mulch, water and guarantee the planting for one year with no additional cost to the Owner.

3. Unless indicated on the plans or marked in the field for removal, the following list represents the most commonly found woody native species and shall be protected and preserved on the site:

Acer saccharum	Sugar Maple
Acer saccharinum	Silver Maple
Amelanchier spp.	Serviceberry
Carpinus caroliniana	American Hornbeam
Carya spp.	Hickories, all species
Celtis occidentalis	Hackberry
Crataegus spp.	Hawthorn (all species)
Juglans nigra	Black Walnut
Juglans cinerea	Butternut
Malus ioensis	Prairie Crabapple
Malus coronaria	Sweet Crabapple
Ostrya virginiana	Ironwood
Populus deltoids	Cottonwood (large specimens only)
Populus tremuloides	Quaking Aspen
Prunus serotina	Black Cherry
Quercus spp.	Oaks, all species
Tilia Americana	Basswood

J. Sites which contain areas sensitive to disturbance such as wetlands, rare plant species, sensitive root zones and / or sensitive soils may be off-limits to machine access. No equipment shall enter these areas. Herbicide treatments shall be performed by hand or by equipment that can be located outside of the protected area and reached via a boom.

K. The Contractor shall be solely responsible for the repair of any and all other damage to the Owner's property, including roads, trails, bridges, signs and other features.

L. After the herbicide treatment has been complete according to the conditions determined at the preconstruction site meeting, the Owner and Contractor shall meet for a final review of the work area. If the original contract terms have been satisfied, the work shall be measured for payment.

M. The Contractor shall be solely responsible for adhering to the herbicide manufacturer's recommendations and requirements regarding safety and application techniques for maximum effectiveness. Special attention should be given to recommendations regarding temperature, humidity and rainfall.

3.02 GLYPHOSATE (ROUNDUP) – BROAD HERBACEOUS APPLICATIONS

A. For new seeding or restoration of areas where complete elimination of herbaceous weeds is desired, apply glyphosate evenly and completely to the designated target area. The concentration rate for this pay item shall be a 2% solution.

B. For these non-target applications, a motorized boom sprayer rig or back pack sprayer may be used.

3.03 GLYPHOSATE (AQUAMASTER) – BROAD HERBACEOUS APPLICATIONS

A. For use in wet or aquatic areas, especially where Common Reed (*Phragmites australis*), Reed Canary Grass (*Phalaris arundinacea*), Cattail (*Typha*) or Canada Thistle (*Cirsium arvense*) are present, Aquamaster or its' generic equivalents shall be used in place of Roundup at a 5% payable concentration and as per Article 3.02 above.

3.04 BROADLEAF WEED CONTROL IN TURF

A. For use before or during turf grass establishment, broadleaf weed control shall be utilized when directed by the Owner. Apply the three component herbicide at the recommended rate by broad non-target foliar spray or by spot spraying. Particular care must be exercised to avoid weather conditions where volatilization and herbicide drift can occur when used near other desirable vegetation. For newly seeded areas, assure that the seedlings have fully hardened off before application. Refer to the herbicide label for recommended timing.

3.05 CLOPYRALID (TRANSLINE) BROADLEAF APPLICATIONS

A. For use before and during native seed establishment in the control of Thistle (*Cirsium*), Clovers (*Trifolium*), Teasel (*Dipsacu*) and other difficult broadleaf weeds. The concentration rate for this pay item shall be a 0.75 % solution.

B. Clopyralid may be applied as a broad non-target foliar spray or by spot spraying selective plants.

3.06 TRICHLOPYR (GARLON 3A & 4) WOODY PLANT APPLICATIONS

A. For use to eliminate woody plant species either as a foliar spray, foliar wick, cut stump treatment or for girdling.

B. Stump treatment shall be applied to the stump cambium adjacent to the outer bark within 30 minutes of being cut using a wick or sponge applicator.

C. Herbicides for stump treatment shall be mixed with a basal oil carrier, dye and pH balancer to the specified concentration. Fuel oils shall not be used as carriers or for dilution. Mix herbicides at a location off site or where protection from spills and ground contamination can be assured. Use an impervious ground protection below all mixing locations.

D. Girdling is defined as the cutting and complete removal of a tree's bark including cork cambium, phloem and cambium around the entire circumference of the trunk such that the tree is caused to die. Some trees larger than 12" DBH may be girdled if not adjacent to property boundaries, roadways, trails, or other assets and only if marked by the Owner. All trees designated for girdling shall be double cut. Cuts shall be made approximately 8-10 inches apart, parallel to each other and horizontal to the ground surface. Girdling cuts shall not be made higher than 3 feet above the ground surface. Herbicide shall be applied to both girdling cuts.

E. All girdled trees shall have herbicide applied to the inside of the girdle rings.

F. A follow-up foliar application of herbicide to suckers, seedlings or other stimulated new growth of the target woody species shall be performed during the growing season immediately following the initial cutting and stump treatment of the said target species application. The Contractor shall initiate foliar herbicide application promptly when new stems are large enough to effectively treat, generally at a stem length of 3-6" and no larger than 12". It is critical that regrowth is not allowed to achieve extensive size before treatment due to decreased herbicide effectiveness, increased herbicide quantities required and the additional risk of damage to non-target species. Failure of the Contractor to perform regrowth treatment in a timely fashion may result in the suspension of work and / or payment to the Contractor.

G. For all follow-up treatments, herbicide shall be applied to growing leaves utilizing a wick applicator. Spray application shall be used only upon approval of the Owner.

H. Herbicides for regrowth treatment shall be mixed with water, non-ionic surfactant, dye and pH balancer to the specified concentration. Mix herbicides at a location off site or where protection from spills and ground contamination can be assured. Use an impervious ground protection below all mixing locations.

I. The concentration rate for Trichlopyr per pay item shall be as follows:

1. Type 3A Foliar Spray: 5%
2. Type 4 Stump Treatment: 30%
3. Type 4 for Girdling: 5%

END OF SECTION 09100

SECTION 09300

TURF SEEDING

Revised / Reviewed: February 10, 2017

1. GENERAL

1.01 DESCRIPTION

A. This section includes:

1. Installation and establishment of turf-type seed mixes and related products.

2. Maintenance of seeded areas during establishment period.

B. Other specification sections which may directly relate to the work in this section include, but are not limited to, include the following:

1. Section 02400 – Soil Erosion and Sediment Control

2. Section 03120 – Finish Grading and Topsoil

3. Section 09110 – Herbicide Treatment

1.02 QUALITY ASSURANCE

A. Contractor Qualifications: The work described in this section requires specialized knowledge, experience, skills and equipment to successfully complete. The Contractor shall possess the full capability to execute the work as specified, including trained, experienced and skilled personnel and possession or access to the required equipment. The Contractor shall also provide the name and qualifications of the foreman assigned to this project. The Contractor or Subcontractors responsible for the work in this section are subject to Owner approval as described in Article 1.12.

1.03 SUBMITTALS

A. Prior to delivery of any materials to the site, submit manufacturer's or suppliers material sheets for any and all materials to be used during this portion of the work. Include complete data on source, quantity and quality. No materials shall be delivered to project site until the corresponding submittal has been approved. Refer to the product descriptions below for specific submittal requirements.

2. PRODUCTS

2.01 FERTILIZER

A Fertilizer for all areas to be seeded with turf seed mixes shall be a balanced (such as 20-20-20) nitrogen – phosphorous - potassium composition that contains a minimum of 25% of the nitrogen component in a slow release form.

B. Submit the manufacturer's product sheet with material analysis, nitrogen release information and quantity of bags required to provide 2 pounds of nitrogen per 1000 square feet for the specified seeding areas for approval.

C. Provide fertilizer to the site in original unopened bags from the manufacturer showing complete analysis of nitrogen, phosphorous, potassium, minor elements and major element source types.

2.02 EROSION CONTROL BLANKET

A. Erosion control blanket shall be:

1. S75BN Single Net Straw Blanket, a 9.3-lb. leno-woven biodegradable jute top netting with 100% straw fiber matrix, as provided by:

North American Green, Inc.
P.O. Box 66
Evansville, IN 47618-9989
(800) 772-2040
www.nagreen.com

2. or approved equal

B. Erosion control blanket staples shall be:

1. 6" in length, composed of Polyhydroxyalkanoate (PHA) plastic and 100% biodegradable from microbial activity in accordance with ASTM D5338 and ASTM D5271, as provided by:

E-Staples by
American Excelsior Company
Arlington, Texas
(800) 777-7645
www.curlex.com

2. or Eco-Stake 6" Hardwood Pins by

North American Green, Inc.
P.O. Box 66
Evansville, IN 47618-9989
(800) 772-2040
www.nagreen.com

3. or approved equal. Provide manufacturer's product sheet for any proposed equal product approval.

2.03 HYDRO-MULCH

A. Hydromulch for slopes 2:1 or less shall be:

1. ProMatrix Engineered Fiber Matrix (EFM), a hydraulically-applied seeding mulch composed of 100% recycled Thermally Refined wood fibers, crimped interlocking man-made biodegradable fibers and naturally derived polymers. It shall be delivered in the manufacturer's sealed weather-resistant 50-pound bags, as manufactured by:

PROFILE Products LLC
750 Lake-Cook Road – Suite 440
Buffalo Grove, IL 60089
(800) 366-1180
www.profileproducts.com

2. or approved equal. Provide manufacturer's product sheet for any proposed equal product approval.

B. Hydromulch for slopes greater than 2:1 shall be:

1. Flexterra HP-FGM, a hydraulically-applied, 100% biodegradable seeding mulch composed of thermally refined wood fibers (80%), cross-linked biopolymers and water absorbents (10%), crimped, man-made interlocking fibers (5%) and micro-pore granules (5%). The material shall be phytosanitized and free from plastic netting. It shall be delivered in the manufacturer's sealed weather-resistant 50-pound bags, as manufactured by:

PROFILE Products LLC
750 Lake-Cook Road – Suite 440
Buffalo Grove, IL 60089
(800) 366-1180
www.profileproducts.com

2. or approved equal. Provide manufacturer's product sheet for any proposed equal product approval.

2.04 WATER

A. Water shall be free from oil, acid, alkali, salts, and other harmful substances. Water may be utilized from potable or non-potable sources such as lakes and ponds. The Owner shall not be responsible for providing water. Any available water sources located on the Owners' property shall not be utilized without permission from the Owner.

2.05 SEED

A. The Contractor shall provide all seed in original unopened bags as mixed by the supplier. Each bag shall bear the supplier's guarantee of composition and percentage of purity and germination. Each bag shall list the botanical, common and cultivar names of each species, percentage of species mix, year of production and packaging, seed origin and net weight. Seed shall be protected against leakage, damage and moisture to insure viability and dormancy. No seed shall be sown until the Owner has inspected and approved the unopened seed mix bags.

B. Seed Mixes

Seed mixes as indicated on the plans shall be as follows:

1. LCFPD PARKLAND MIX

SPECIES OR MIX	RATE (lbs. per A/1000 sf)	% +/-
Kentucky Bluegrass Mix	155 / 3.5	70%
Creeping Red Fescue	45 / 1.0	20%
Perennial Rye	20 / .5	10%
TOTAL	**220 / 5.0**	**100%**

a. Kentucky Bluegrass Mix shall be a blend of at least two improved cultivars selected for low maintenance and short germination and establishment time.

b. Improved Creeping Red Fescue shall be an improved cultivar or blend of cultivars.

c. Perennial Rye shall be a an improved cultivar or blend of cultivars selected for disease resistance.

2. LCFP HIGH-TRAFFIC MIX

SPECIES OR MIX	RATE (lbs. per. A/1000sf)	% +/-
Turf-Type Tall Fescue Mix	300 / 6.9	85%
Kentucky Bluegrass Mix	50 / 1.1	15%
TOTAL	**350 / 8**	**100%**

a. Turf Type Tall Fescue Mix shall be a blend of at least two improved cultivars selected for drought tolerance, wear resistance, USDA Zone 5 hardiness and with a leaf texture suitable for blending with Kentucky Bluegrass. At least 30% of the mix shall be a rhizomatous selection such as Titan, Defiance, etc.

b. Kentucky Bluegrass Mix shall be a blend of at least two improved cultivars selected for low maintenance and short germination and establishment time.

3. LCFP LOW MAINTENANCE MIX

SPECIES OR MIX	RATE (lbs. per A/1000sf)	% +/-
Fine Fescue Mix	260 / 6	100%
TOTAL	**260 / 6**	**100%**

a. Fine Fescue Mix shall be a blend of creeping red, chewings, hard and sheep's fescue; acceptable commercial blends include Highlands Fescue Mix, Legend Fine Fescue Blend and Greenskeeper National Links Mixture.

3. EXECUTION

3.01 SEED BED PREPARATION

A. Seed bed preparation shall not begin until all other site work, topsoil spreading and finish grading have been completed. Before seed bed preparation, the Contractor shall assure that the final grading allows for proper drainage.

B. All areas to be seeded shall be inspected and approved by the Owner prior to the sowing of seed.

C. Surfaces to be seeded shall be loose and friable to a minimum depth of 3 inches. Hard and compacted surfaces are not acceptable and must be disked or tilled and raked to provide a suitable seed bed. Any rocks, soil cods or other debris greater than 1" in diameter that is generated shall be removed and disposed. The prepared surface shall be free from crusting and caking.

D. Seed beds that cannot be adequately cleaned of debris by manual raking and picking shall be cleaned by mechanical means using a dedicated rock / debris collecting tractor attachment.

3.02 FERTILIZATION

A. The specified fertilizer shall be applied a rate of 2 pounds of Nitrogen per 1000 square feet or 87 pounds of Nitrogen per acre using a calibrated drop spreader or other mechanical method that will result in uniform coverage. Application of the fertilizer by hand is not acceptable.

B. Fertilizer shall be applied prior to seeding. No fertilizer shall be applied until the Owner has inspected and approved the products. Payment for fertilization shall not be approved until proof of yield has been demonstrated by a counting of the fertilizer bags.

C. No fertilizer shall be applied in areas designated for native seed mixes.

3.03 SEEDING – GENERAL

A. All areas of bare soil which have been graded or otherwise disturbed by construction shall be seeded, unless specified on the plans otherwise. Refer to the plans for locations of the specified seed mixes.

B. Temporary work areas, staging areas, haul roads and all other similarly disturbed areas which require restoration shall be prepared and seeded according to the requirements contained in this section.

3.04 APPROVED SEEDING METHODS

A. Turf seeding shall be performed by one of two methods:

1. Broadcast method using calibrated drop spreaders, either manually operated or using motorized equipment. Broadcast seeding is the only approved method in small or narrow areas where mechanical seeding equipment cannot make two passes as described below. After broadcasting seed, the seed bed shall be lightly raked either manually or with a machine drag attachment.

2. Mechanical seeding method using equipment which deposits seed in linear rows or furrows directly on the soil then packs and covers the seed in one continuous operation. This method may only be used when space allows the seed to be installed in two directions with the second pass being 45 to 60 degrees from the first pass. Mechanical seeding method shall not be used on grass trails or trail shoulders. Mechanical equipment must be calibrated to deposit the proper amount of seed at the proper depth, generally 1/8" to ¼" deep.

B. Regardless of the method used to deposit the seed, all seeded areas shall be rolled using a smooth or lightly spiked mechanical roller.

C. All seeding equipment shall be approved by the Owner prior to seeding. Seeding equipment shall be properly calibrated to the required seeding rates.

3.05 SEEDING SCHEDULES

A. Turf seeding is recommended to be performed between April 1 and June 1 or from August 1 and October 1 for optimum germination. The Contractor may elect to perform this seeding immediately after work progress allows; however, all responsibility for supplemental watering to stimulate germination and growth shall rest with the Contractor. Guaranty and maintenance requirements as specified herein are not changed or relieved by the timing of seeding.

3.06 EROSION CONTROL BLANKET

A. Immediately after seeding is complete, place erosion control blanket on all areas as designated on the plans. Refer to the manufacturer's recommendation for selection of staple patterns and quantities appropriate to the site conditions.

B. The Contractor shall guarantee that all erosion control blanket remains securely in place until a minimum of 90% of the ground has been stabilized by germination and growth of permanent or temporary seed. Erosion control blanket shall be re-stapled, reapplied or otherwise reset as specified as often as necessary until stabilization has been achieved.

C. On slopes greater than 3:1 the Contractor shall install the erosion control blanket with a trenched edge at the top of the slope to resist water infiltration under the blanket.

3.07 HYDROMULCH

A. Immediately after seeding is complete, apply hydromulch on all areas as designated on the plans. Hydromulch shall not be applied to areas which are to receive erosion control blanket. Strictly comply with the equipment and material manufacturer's instructions and recommendations. The timing of the hydromulch application shall allow the product to fully cure before the next precipitation event. The hydromulch shall be applied in at least two opposing passes at the following rates:

4H - 1V to 3H – 1V Slopes:	3000 lbs. / acre
3H – 1V to 2H – 1V Slopes:	3500 lbs. / acre
2H – 1V to 1H – 1V Slopes:	4000 lbs. / acre

3.08 WATERING

A. Supplemental watering of seeded areas shall be performed at the discretion of the Contractor. Watering may be necessary in order to conform to the guarantee requirements as described in this section.

3.09 TURF MOWING

A. All turf areas shall be maintained at mowed height of 3" until achieving the performance and guaranty criteria for seeded areas. Mow turf promptly when it reaches a height of 6" in height.

3.10 GUARANTY

A. General: All guaranties for turf seeding and other related work in this section shall be solely at the cost of the Contractor. The guarantee period shall be in effect until the ground coverage requirement described below is met and the final acceptance is issued in writing by the Owner.

B. Seed Beds: Upon completion of seeding operations, the Contractor shall become responsible for protecting the seeded areas from any damage resulting from foot or vehicle traffic, vandalism or weather. When possible, isolate and contain the completed areas with temporary fencing. Erosion or soil subsidence caused by rain shall be repaired to the original grade, prepared for seed, reseeded and the appropriate erosion control product reapplied. Any damage which occurs before achieving the performance and guaranty criteria shall be repaired to original specifications by the Contractor at no expense to the Owner.

C. Seed Germination and Establishment: Seeded areas shall have a minimum of 90% ground coverage with active growth and no bare ground greater than two square feet before final acceptance. Approximately 90 days after the initial seeding (or the following spring for fall seeding), the site shall be inspected by the Owner and Contractor to determine turf coverage, condition and plan for remedial seeding if necessary. At the proper time as determined by the Owner, the Contractor shall promptly remove any erosion control blanket or hydromulch and reseed the bare areas according to the specifications as necessary until the minimum coverage is achieved. After each reseeding, the Contractor shall reinstall new erosion control

blanket or reapply hydromulch as originally indicated on the plans. If, after three growing seasons (one growing season defined as either spring: May-June or fall: September-October), the required coverage has not been achieved, the Owner reserves the right to reduce payment or retainage for compensation for the amount of ground without adequate germination and growth.

D. Hydromulch: The Contractor shall guarantee that all hydromulch is applied at the minimum rate. Any areas where the minimum rate is not achieved shall be reapplied until meeting the specification. The Contractor shall guarantee that all hydromulch remains effective and shall reapply the hydromulch as needed until such time that the minimum seed coverage is achieved.

E. Erosion Control Blanket: Any erosion control blanket which becomes displaced for any reason shall be reinstalled to its' original condition and position with additional staples. Any erosion control blanket which becomes damaged or otherwise ineffective shall be replaced with new product. All rills and gullies shall be repaired and the area shall be reseeded prior to reinstallation of erosion control blanket.

END OF SECTION 09300

SECTION 09310
NATIVE SEEDING

1. GENERAL

1.01 DESCRIPTION

A. This section includes:

1. Installation of native seed mixes and related products.
2. Maintenance and care of seeded areas during the establishment period.

B. Other specification sections which may directly relate to the work in this section include, but are not limited to, include the following:

1. Section 02400 – Soil Erosion and Sediment Control
2. Section 03120 – Finish Grading and Topsoil
3. Section 09110 – Herbicide Treatment

1.02 CONTRACTOR QUALIFICATIONS

A. The work described in this section requires specialized knowledge, experience, skills and equipment to successfully complete. The Contractor shall possess the full capability to execute the work as specified, including trained, experienced and skilled personnel and possession or access to the required equipment.

B. The native seeding contractor shall provide proof of qualifications, including a work history documenting a minimum of five (5) native seeding projects completed in the last five (5) years which are comparable in scope, techniques and size. This information shall include a complete project description, lead foreman experience history, location, client name and contact phone numbers. The Contractor shall provide this information in the bidder's forms in described in Article 1.12 of this Contract.

C. This Contract includes work tasks and site inspections which require the identification of native, introduced and / or invasive plants that exist on the site at any time. The Contractor shall employ an experienced biologist, botanist, ecologist, or equivalent to oversee the work and monitor plant establishment and recommend best management practices to assure the success of the project. This person shall also oversee all herbicide use.

1.03 SUBMITTALS

A. Submit detailed seed data sheets as described in Article 2.04 of this section.

B. Submit samples or manufacturer's data sheets on all other materials used in the performance of this work.

C. Submit specific information on seeding equipment to be used for approval.

2. PRODUCTS

2.01 EROSION CONTROL BLANKET

A. Erosion control blanket shall be:

1. S75BN Single Net Straw Blanket, a 9.3-lb. leno-woven biodegradable jute top netting with 100% straw fiber matrix, as provided by:

North American Green, Inc.
P.O. Box 66
Evansville, IN 47618-9989
(800) 772-2040
www.nagreen.com

2. or approved equal

B. Erosion control blanket staples for seed mix areas shall be:

1. 6" in length, composed of Polyhydroxyalkanoate (PHA) plastic and 100% biodegradable from microbial activity in accordance with ASTM D5338 and ASTM D5271, as provided by:

E-Staples by
American Excelsior Company
Arlington, Texas
(800) 777-7645
www.curlex.com

2. or EcoDuty 6" Staples by
Ecoturf Midwest, Inc.
Ecoturfmidwest.com

3. or approved equal

2.02 HYDRO-MULCH

B. Hydromulch for slopes 2:1 or less shall be:

3. ProMatrix Engineered Fiber Matrix (EFM), a hydraulically-applied seeding mulch composed of 100% recycled Thermally Refined wood fibers, crimped interlocking man-made biodegradable fibers and naturally derived polymers. It shall be delivered in the manufacturer's sealed weather-resistant 50-pound bags, as manufactured by:

PROFILE Products LLC
750 Lake-Cook Road – Suite 440
Buffalo Grove, IL 60089
(800) 366-1180
www.profileproducts.com

4. or approved equal. Provide manufacturer's product sheet for any proposed equal product approval.

B. Hydromulch for slopes greater than 2:1 shall be:

1. Flexterra HP-FGM, a hydraulically-applied, 100% biodegradable seeding mulch composed of thermally refined wood fibers (80%), cross-linked

biopolymers and water absorbents (10%), crimped, man-made interlocking fibers (5%) and micro-pore granules (5%). The material shall be phytosanitized and free from plastic netting. It shall be delivered in the manufacturer's sealed weather-resistant 50-pound bags, as manufactured by:

PROFILE Products LLC
750 Lake-Cook Road – Suite 440
Buffalo Grove, IL 60089
(800) 366-1180
www.profileproducts.com

2. or approved equal. Provide manufacturer's product sheet for any proposed equal product approval.

2.03 WATER

A. Water shall be free from oil, acid, alkali, salts, and other harmful substances. Water may be utilized from potable or non-potable sources such as lakes and ponds. The Owner shall not be responsible for providing water. Any available water sources located on the Owners' property shall not be utilized without permission from the Owner.

2.04 SEED MIXES

A. Seed mixes as indicated on the plans shall be as follows:

1. **LCFPD COVER CROP MIX**

SPECIES	COMMON NAME	LBS. / ACRE
Avena sativa	Oats	20.0
Elymus canadensis	Canada Wild Rye	5.0
Lolium multiflorum	Annual Rye	15.0
Panicum virgatum	Switch Grass	0.75
Schizachyrium scoparium	Little Bluestem	1.0
Monarda fistulosa	Wild Bergamot	0.065
Rudbeckia hirta	Black-eyed Susan	0.065
TOTAL		**46.88 LBS.**

Note: LCFP Cover Crop Mix shall be delivered separate from all native seed mixes.

2. **LCFPD BASIC PRAIRIE MIX**

GRASS SPECIES	COMMON NAME	LBS. / ACRE
Andropogon gerardii	Big Bluestem	0.75
Bouteloua curtipendula	Sideoats Grama	1.5
Elymus canadensis	Canada Wild Rye	1.0
Panicum virgatum	Switch Grass	1.5
Schizachyrium scoparium	Little Bluestem	2.0
Sorghastrum nutens	Indian Grass	0.5

Sporobolus heteroleptis	Prairie Dropseed	0.75
TOTAL		**8.0 LBS.**

FORB SPECIES	COMMON NAME	OZ. / ACRE
Allium cernuum	Nodding Onion	3.0
Asclepias tuberosa	Butterfly Weed	3.0
Aster laevis	Smooth Blue Aster	1.0
Aster novae-angliae	New England Aster	0.5
Aster oolentangiense	Sky Blue Aster	0.5
Baptisia alba	White Indigo	4.0
Coreopsis palmata	Prairie Coreopsis	1.5
Dalea purpurea	Purple Prairie Clover	9.0
Desmodium canadense	Showy Tick Trefoil	3.0
Echinacea pallida	Pale Purple Coneflower	8.0
Eryngium yuccafolium	Rattlesnake Master	4.0
Liatris aspera	Rough Blazingstar	2.5
Liatris spicata	Marsh Blazingstar	4.0
Monarda fistulosa	Wild Bergamot	1.5
Oenothera pilosella	Prairie Sundrops	0.25
Penstemon digitalis	Foxglove Beardtogue	3.0
Pycnanthemum virginianum	Mountain Mint	0.5
Ratibita pinnata	Yellow Coneflower	3.0
Rudbeckia hirta	Black-eyed Susan	1.0
Rudbeckia subtomentosa	Sweet Black-eyed Susan	3.0
Solidago speciosa	Showy Goldenrod	1.0
Verbena stricta	Hoary Vervain	3.0
Veronicastrum virginicum	Culver's Root	0.25
Zizia aurea	Golden Alexanders	3.0
TOTAL OUNCES		**63.5**
TOTAL LBS.		**3.97**

2.03 SEED MIX REQUIREMENTS – COVER CROP MIX

A. Unless approved by the Owner, all cover crop seed mixes shall be packaged and delivered separate from the native seed mixes to allow for seasonal differences and methods in seed installation.

2.04 SEED MIX REQUIREMENTS – PRAIRIE AND OTHER NATIVE MIXES

A. Prior to acquisition and delivery of seed, the Contractor shall submit suppliers' detailed seed data for approval by the Owner. Information for each species shall

include lot number, harvest year and place of origin, test dates, processing performed, inoculants included, certified Pure Live Seed (PLS) weight, bulk weight including inert matter, other crop and weed seed percentages and adjusted bulk weight to meet PLS weight requirements. The submittal shall also indicate any lack of availability from the primary source and related information from other potential seed sources. Substitutions shall not be permitted without approval by the Owner. Once the seed data is approved, the Contractor shall deliver the seed in unopened bags with tags or data sheets attached matching the approved seed requirements described in this specification.

B. All species shall be sourced from within a 200 mile radius from Lake County, Illinois.

C. All species shall be provided on a Pure Live Seed (PLS) weight basis. PLS shall be defined as (purity) x (total germination). Tetrazolium (TZ) testing for viability may be utilized when appropriate.

D. All species with dispersal appendages (e.g. *Asclepias, Aster, Liatris, Solidago*, etc. shall be supplied on a de-fluffed basis.

E. All "hulled" species (e.g. *Desmodium, Dalea*, etc.) shall be supplied on a de-hulled basis.

F. All other species shall be cleaned as close to the bare caryopsis as possible without effecting seed viability.

G. All legume species (e.g. *Baptisia, Dalea, Desmodium*, etc.) shall be provided with a genus-specific bacterium inoculum for each different species.

H. Seeds of all forbs should be stored in cold conditions whenever possible.

I. Seed bags shall be stored at the recommended temperature and not exposed to moisture.

J. Seed mixes shall be packaged for the appropriate installation method. This shall include segregation of seed by size to assure an even distribution of different species that vary greatly in size in relation to equipment metering and delivery requirements.

3. EXECUTION

3.01 SEED BED PREPARATION

A. Seed bed preparation shall not begin until all other site work, topsoil spreading and finish grading have been completed.

B. All areas to be seeded shall be inspected and approved by the Owner prior to the sowing of seed.

C. Surfaces to be seeded shall be loose and friable to a minimum depth of 3 inches. Hard and compacted surfaces are not acceptable and must be tilled and raked to provide a suitable seed bed. Any rocks, soil cods or other debris greater than 1 ½" in diameter that is generated shall be removed and disposed. Seed beds that cannot be adequately cleaned of debris by manual raking and picking shall be cleaned by mechanical means using a dedicated rock / debris collecting tractor attachment.

3.02 HERBICIDE APPLICATION BEFORE SEEDING

A. Areas which contain undesirable or weed species at the time of seeding shall be sprayed with an appropriate herbicide when directed by the Owner. Refer to Section 09110 – Herbicide Treatment for the specific requirements of this this work.

3.03 SEEDING – GENERAL

A. All areas of bare soil which have been graded or otherwise disturbed by construction shall be seeded, unless specified on the plans otherwise. Refer to the plans for locations of the specified seed mixes. No seed shall be sown during unfavorable conditions such as high winds or very wet soil.

B. Temporary work areas, staging areas, haul roads and all other similarly disturbed areas which require restoration shall be prepared and seeded according to the requirements contained in this section.

3.04 SEEDING SCHEDULE AND METHODS

A. When installing prairie and other types of native seed mixes, seeding schedules, methods and equipment shall be determined by the requirements for both soil erosion and sediment control management and the germination and establishment of the native seed mix. In order to accommodate both of these requirements, separate seeding of cover crop mix and the native mix may be required. Initial seeding shall be performed immediately after finish grading and seed bed preparation has been completed. Unless directed otherwise by the Owner, cover crop and native seed installation shall be performed according to the following schedule:

1. April 1 to October 15

   Install Cover Crop Mix only with either hydromulch or erosion control blanket.

2. October 15 to April 1

   For bare soil conditions which have not been seeded with Cover Crop, install both Cover Crop Mix and Native Mix in one installation with either hydromulch or erosion control blanket.

   For areas previously seeded with Cover Crop, install Native Seed Mix only. No seed mulch or cover is required unless bare soil conditions are prevalent.

B. Native seeding shall not be installed during periods of snow or ice cover, wet soil conditions or during periods of high winds when using the broadcast method.

C. Seeding shall be performed using the Broadcast Method or by Drill Method using equipment especially suited to the installation of native seed mixes. All seeding equipment shall be approved by the Owner. A carrier agent such as sand, perlite, ground corn cobs or similar material shall be used when native seed size or quantity is insufficient to distribute evenly.

D. The broadcast method shall be used when bare soil conditions and a prepared seed bed are present. The seed shall be distributed using only a dedicated broadcast spreader such as a Cyclone or Seed Slinger with proper calibration. Hand cast seeding shall not be acceptable. The seed shall be broadcast in two passes approximately 90 degrees from each other. The Owner may require that the seed be segregated by size or species and broadcast in separate passes. Immediately after seed dispersal, the seeded areas shall be lightly raked, either manually or utilizing a tractor and drag attachment and then rolled with a smooth surfaced roller.

E. When mechanical drill seeders are used, they shall be of the type specifically designed for native seed installation (such as those by Truax, Tye or John Deere) which utilizes multiple seed boxes to segregate seed species by size and places the various seeds at the proper planting depth. The seeder shall be equipped to install seed into existing vegetation when required. The seeder shall be equipped with

separate drop tubes for each seed size, discs to open the seed furrows and a packer assembly to compact the soil directly over the seed. Mechanical drill seeding is the required method when existing cover crop is present.

F. All seeding shall be done at a right angle to the surface drainage. After seeding, if the seed bed remains loose such that foot traffic creates indentions of 2" or deeper, the Contractor shall further pack the seed bed with a cultipacker.

3.05 EROSION CONTROL BLANKET

A. Immediately after seeding is complete, place erosion control blanket on all areas as designated on the plans. Refer to the manufacturer's recommendation for selection of staple patterns and quantities appropriate to the site conditions.

3.06 HYDROMULCH

A. Immediately after seeding is complete, apply hydromulch on all areas as designated on the plans. Hydromulch shall not be applied to areas which are to receive erosion control blanket. Strictly comply with the equipment and material manufacturer's instructions and recommendations. The timing of the hydromulch application shall allow the product to fully cure before the next precipitation event. The hydromulch shall be applied in at least two opposing passes at the following rates:

4H - 1V to 3H – 1V Slopes:	3000 lbs. / acre
3H – 1V to 2H – 1V Slopes:	3500 lbs. / acre
2H – 1V to 1H – 1V Slopes:	4000 lbs. / acre

3.07 ESTABLISHMENT PERIOD

A. An establishment period shall commence 30 days following the satisfactory inspection and acceptance of the native seed mix. This period shall continue for a two (2) year term during which the seeding shall be monitored and maintenance tasks prescribed. Pay items are included for all maintenance tasks.

3.08 MONITORING AND INSPECTIONS

A. The Contractor and the Owner shall inspect the site at least twice per year. These inspections shall occur approximately around May 1st and July 15th unless the parties agree to an adjusted schedule. The vegetative monitoring will be based on meander surveys of all seeded areas. During these inspections, the site shall be evaluated for germination and presence of both the desired native species and of the presence of non-native, weedy or invasive species. The Owner shall determine what if any maintenance actions should be performed to best assure the successful establishment of the desired species. These inspections shall continue through the second and final year of the term, with specific remedial actions determined and scheduled after each inspection of the site.

3.09 FIELD MOWING

A. Field Mowing shall consist of the mowing of native seeded areas to a height determined by the site inspections, typically at 6", for purposes of reducing competition from undesirable species or to control seed production. It shall be performed according to the scheduled time set at the time of inspection. Mowing which is performed outside of the scheduled times may be rejected for payment if the desired outcome is not achieved.

3.10 HERBICIDE TREATMENT – NATIVE SEEDED AREAS

A. Herbicide Treatments shall include either Glyphosate (Roundup) or Clopyralid (Transline) as described in Section 09110 – Herbicide Treatment. The Contractor shall apply the herbicides per the manufacturer's recommendations and as instructed by the Owner. The application may be selective in nature, or broadly applied depending on the composition of the vegetation present at the time of treatment.

3.11 NATIVE SEEDING - CONTINGENCY

A. When indicated by the site inspections, the Contractor shall perform additional seeding in specific areas as directed by the Owner. The seed mix shall be the original mix specified and the installation method shall be determined by the extent of vegetation present in the targeted areas.

3.12 GUARANTY

A. Seed Beds: Upon completion of seeding operations, the Contractor shall become responsible for protecting the seeded areas from any damage resulting from foot or vehicle traffic, vandalism or weather. When possible, isolate and contain the completed areas with temporary fencing. Erosion or soil subsidence caused by rain shall be repaired to the original grade, prepared for seed, reseeded and the appropriate erosion control product reapplied. Any damage which occurs before achieving the performance and guaranty criteria shall be repaired to original specifications by the Contractor at no expense to the Owner.

B. LCFP Cover Crop Mix: Cover crop seeding shall have a minimum of 90% ground coverage with active growth and no bare ground greater than five (5) square feet before final acceptance. This minimum ground coverage shall be achieved within 90 days of the original seeding. After the 90 day period or the following spring for seeding performed in fall, the Contractor shall reseed any areas not meeting these criteria at no additional cost to the Owner.

C. LCFP Native Mixes: No minimum ground coverage or native species count guaranty is included in this Contract. However, should the Contractor fail to meet any or all of the material or execution requirements contained in this section, the Owner reserves the right to withhold payment or require the Contractor to perform the work again, including additional seed installation.

D. Hydromulch: The Contractor shall guarantee that all hydromulch is applied at the minimum rate. Any areas where the minimum rate is not achieved shall be reapplied until meeting the specification. The Contractor shall guarantee that all hydromulch remains effective and shall reapply the hydromulch as needed until such time that the minimum seed coverage is achieved.

E. Erosion Control Blanket: Any erosion control blanket which becomes displaced for any reason shall be reinstalled to its' original condition and position with additional staples. Any erosion control blanket which becomes damaged or otherwise ineffective shall be replaced with new product. All rills and gullies shall be repaired and the area shall be reseeded prior to reinstallation of erosion control blanket.

END OF SECTION 09310

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ATTACHMENT C
LIST OF DRAWINGS

SHEET NO.	SHEET TITLE	DATE LAST REVISED
1	Cover Sheet	11/10/2017
2-3	General Notes	11/10/2017
4	Typical Sections	11/10/2017
5	Overall Layout Key, Alignment, Ties and Benchmarks	11/10/2017
6	Overall Layout Site Plan	11/10/2017
7	Parking Lot Layout Plan	11/10/2017
8	Parking Lot Grading Millennium Trail Plan and Profile	11/10/2017
9-13	Millennium Trail Plan and Profile	11/10/2017
14-18	Ethel's Loop Trail Plan and Profile	11/10/2017
19	Erosion Control and Landscaping Notes	11/10/2017
20	Parking Lot Erosion Control and Landscaping Plan	11/10/2017
21-23	Millennium Trail Erosion Control and Landscaping Plan	11/10/2017
24-26	Ethel's Loop Trail Erosion Control and Landscaping Plan	11/10/2017
27-29	Construction Details	11/10/2017

Public Access Improvements
Ethel's Woods Forest Preserve
Project No. 63910-18006-887

Client:

Lake County Forest Preserve District
Greg Walenter
1899 Winchester Road
Libertyville, Illinois 60048
Office 847.968.3274
Cell 847.489.6186
gwalenter@lcfpd.org

Engineer:

Civiltech Engineering, Inc.
Reid T. Magner, P.E.
Two Pierce Place, Suite 1400
Itasca, Illinois 60143
Office 630.735.3390
Cell 630.379.3313
rmagner@civiltechinc.com

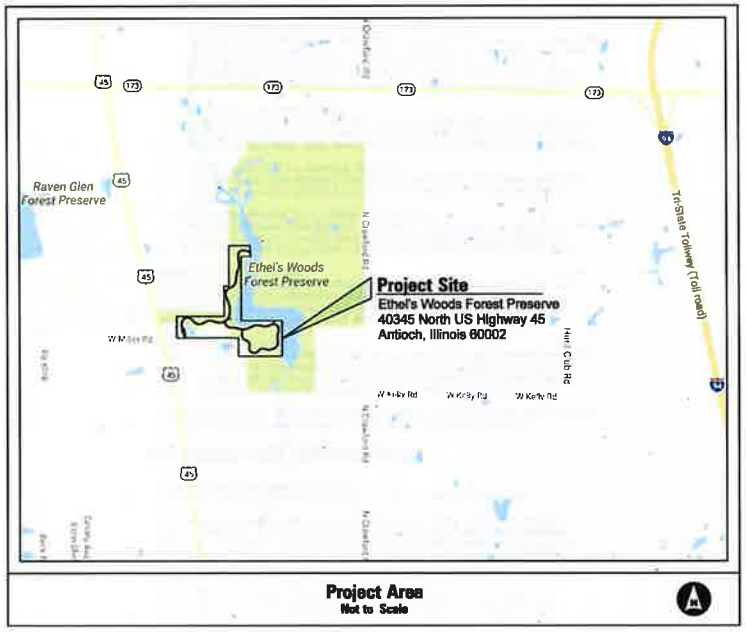
APPLIES TO SHEETS 1 – 29

REID T. MAGNER 062-054273 LICENSED PROFESSIONAL ENGINEER STATE OF ILLINOIS

Benchmark:

BM #3 is a Railroad spike (set) in the first power north of Miller Road on the east side of U.S. Route 45. See Sheet No. 5 for elevation and coordinate values.

BM #9 is a Railroad spike (set) in the power pole on the south side of Miller Road east of the proposed parking lot entrance (address 19235 Miller Road). See Sheet No. 5 for elevation and coordinate values.



Project Area
Not to Scale

Sheet Index:

Legend

XX"	Existing Tree (to remain)
XX"	Tree Removal
XX"	Tree Protection paid for as Temporary Construction Fence, 4' (Limits of Fence to be marked in the field)
LIM	Proposed Construction / Restoration Limits
NMCCR	North Mill Creek Channel Restoration Limits
PL	Property Line
	Utility Easement
SF	Silt Fence
	Proposed Culvert, HDPE Pipe, 12"
2' (TYP)	Steel Flared End Section with Grating
10' (TYP)	Steel Flared End Section with Grating and Riprap

Project Length:

		Sta.	to	Sta.	Length
Millennium Trail	12' Wide Aggregate	138+50.0	to	176+12.5	3,762.5 FT
Ethel's Loop Trail	10' Wide Aggregate	400+06.0	to	435+52.2	3,546.2 FT
Trail Total					7,308.7 FT
Hot Mix Asphalt Parking Lot		36+12.0	to	138+50.0	239.0 FT

Bid Set

CIVILTECH — Two Pierce Place, Suite 1400, Itasca, Illinois 60143, Tel: 630.773.3900 Fax: 630.773.3975, www.civiltechinc.com	Designed - JRR Drawn - TFS Checked - RTM Date - 11/10/2017	Revised - Revised - Revised - Revised -	LAKE COUNTY FOREST PRESERVE DISTRICT	Call J.U.L.I.E. 1-800-892-0123 at least 48 hours before start of construction with the following: County: Lake; City or Township: Antioch; Twp, Range & Section: T46N, R11E, 19	COVER SHEET ETHEL'S WOODS FOREST PRESERVE Sheet No. 1 of 1 Sheets	County: Lake; Total Sheets in County: 29; Sheet No.: 1 Project No. 63910-18006-887

The following notes are intended to supplement the plans and specifications and bring to the attention of the Contractor any contract requirements which are specific to this particular project and location.

GENERAL NOTES

1. The Contractor and all appropriate subcontractors shall attend a pre-construction meeting with the Owner, Engineer and required permit agencies prior to the start of construction to review submittals, access restrictions, phasing and schedules, permit requirements, construction methods and any other information pertinent to the work.
2. The Contractor shall submit a construction schedule prior to start of the work.
3. The Contractor shall thoroughly examine all contract documents and shall maintain a complete plan set and specifications at the site during all work operations. This set of documents shall be used and maintained to note all deviations or changes to the work as a working 'as-built' plan set.
4. The Contractor shall maintain a secure and rain-proof permit box at the work site which shall contain all permits, logs and records required by permit agencies, utilities and other governing bodies.
5. The Owner is not responsible for the construction means, methods, techniques, sequences or procedures, time of performance, programs or for any safety precautions used by the Contractor. The Contractor is solely responsible for execution of the work in accordance with the contract documents and specifications. The Contractor is to provide all labor, material, equipment, etc. necessary to perform all the work required for construction of the proposed improvement as indicated in the contract documents.
6. The Contractor is required to have a competent supervisor present at the site during critical work planning and operations regardless of whether the work is being performed by the Contractor or one of their Subcontractors.
7. The Contractor shall be solely responsible for scheduling and attending all permit inspections, including those procured by the Owner or others.
8. Unless specifically noted, the proposed lines and grades shown on the construction plans represent finished grade elevations.
9. This project may require a phased construction as defined by the Owner. Refer to the SPECIAL PROJECT NOTES on this sheet for any phasing requirements. If so required, the Contractor shall complete the construction of each phase in its entirety before beginning work on the next phase. The Owner shall inspect and approve each phase upon its completion and authorize the contractor to advance to the next area of work.
10. The Contractor shall make arrangements for the proper bracing, shoring and other required protection of all roadways and structures before construction begins. The Contractor shall be responsible for any damage to the roadways and associated structures and shall make repairs as necessary to the satisfaction of the Owner.
11. All existing traffic signs, street signs, mail boxes, etc., which interferes with construction operations and are not noted for removal or disposal shall be removed and reset by the contractor at locations as designated by the Owner. This work shall be considered incidental to the contract and no additional compensation shall be allowed.
12. All permanent type pavements or other permanent improvements which abut the proposed improvement and must be removed shall be saw-cut as directed prior to removal. All items so removed shall be replaced with similar construction materials to their original condition or better. Unless listed separately as a pay item, payment for sawing shall be included in the cost for removal of each item and replacement will be paid under the respective items in the contract, unless otherwise indicated.
13. All work performed, whether completed or in part, shall immediately become the responsibility of the Contractor. Any damage of the work which is incurred before the Owner's acceptance shall be repaired or otherwise reconstructed to the requirements of the contract documents at no cost to the Owner.

SURVEY NOTES

1. All elevations shown on these plans are based on U.S.G.S. Datum NAVD 88. All horizontal coordinates reference to the Illinois State Plane Coordinate System, East Zone, NAD 83-03.
2. Where property corner, section or subsection monuments are encountered and conflict with the work, the Owner shall be notified before the monuments are removed. The Contractor shall carefully preserve all property marks and monuments until the owner, authorized surveyor or agent has surveyed or otherwise referenced their location. Any unauthorized damage or loss of survey monuments shall be replaced by a Professional Land Surveyor.
3. Site benchmarks and control points are shown on the Plans. Any additional layout of lines and grades or any other surveying required to construct the Work shall be the responsibility of the Contractor.
4. All layout and staking of the proposed improvements, both horizontal and vertical, shall have an accuracy of within one-tenth (.10) of one foot.

DEBRIS REMOVAL NOTES

1. The Contractor is prohibited from burning any material within or adjacent to the project limits without expressed approval of the Owner. All excess or waste material shall be hauled away from the project site by the Contractor and legally disposed. It shall be the responsibility of each respective Contractor to remove from the site any and all materials and debris which result from their construction operations at no additional expense to the Owner.

UTILITY NOTES

1. Information regarding type or location of underground utility facilities shown on the plans represents the best information provided to the Owner, and is only included for the convenience of the Contractor. The Owner assumes no responsibility for the sufficiency or the accuracy of the location information provided.
2. Before starting any excavation, the Contractor shall contact "JULIE" at 1-800-892-0123 for field locations of buried electric, telephone, gas, water, sewer, cable, etc., utility lines (minimum 48-hour notification is required).
3. If any utility is encountered which was not identified with a JULIE location request and is in conflict with the work, the Contractor shall immediately notify the Owner and the appropriate utility representative.
4. The Contractor shall be responsible for any damage or destruction of public or private utilities even though they may not be shown on the Plans. The Contractor shall restore such utilities or property at the Contractors own expense.
5. The Contractor shall use all necessary precautions and protective measures required to maintain existing utilities, sewers, and appurtenances that must be kept in operation. In particular, the Contractor will take adequate measures to prevent the undermining of utilities and sewers which are still in service.
6. Overhead utilities which may interfere with the construction activities shall be properly marked and signed.

EARTHWORK AND GRADING NOTES

1. It is the Contractor's responsibility to determine all material quantities required to meet the proposed grades and achieve a balanced site when required.
2. When unsuitable materials are encountered the Contractor shall notify the Owner immediately. No remedial soils replacement shall be performed without notice to the Owner, consultation with the geotechnical engineer and either a materials estimate or an approved method of determining replacement quantities and stabilization methods.
3. During earthwork and mass grading operations, it is critical that areas proposed for permanent landscape improvements are constructed with soils capable of supporting vegetation. Stripping and stockpiling operations conducted in native undisturbed areas and former agricultural areas shall have soils segregated as follows:
   A. Topsoil: The top surface layer of the natural ground containing sufficient organic matter, a relatively neutral pH and friable structure suitable for supporting normal plant growth. This layer typically varies in depth and may be quantified from soil core sampling if available.
   B. Mid-Layer: The soils typically found directly below the topsoil layer and to a depth of 48" and typically composed of clay, silty clay and/or sand and gravel and having an elevated pH value.
   C. Unsuitable Soil Layer: Soils generally found below a depth of 48" and having qualities unsuitable to plant growth, including a high pH value and dense structure. These soils may include extremely dense hydric clays which are impermeable when compacted.
   D. During respreading operations in areas proposed for permanent landscape improvements, the Contractor shall be required to provide the soil profile shown above at their corresponding natural depths. In areas where fill operations require less than a 5' depth of material, no Unsuitable Soil Layer material shall be used. The Owner and Engineer shall determine relative depths of each soil layer during the initial stripping operations.
4. Before respreading or furnishing and spreading topsoil adjacent to pavements, all excess aggregates and other debris remaining beyond the specified pavement base dimension shall be removed and disposed off of the site.

DRAINAGE NOTES

1. Unless otherwise noted on the plans, the existing drainage facilities shall remain in use during the period of construction. During construction operations the Contractor shall ensure positive site drainage at the conclusion of each day. Site drainage may be achieved by ditching, pumping, or any other method acceptable to the Owner.
2. If during construction, the Contractor encounters or otherwise becomes aware of any drainage structures other than those shown on the plans, the Contractor shall inform the Owner, who shall direct the work necessary to maintain or replace the facilities in service and to protect them from damage during construction if maintained. Existing facilities to be maintained that are damaged because of non- compliance with this provision shall be replaced at the Contractor's own expense. All field tile encountered during construction operations which has not been identified on the Plans shall be immediately reported to the Owner and temporarily directed to outlet into a proposed drainage way. The Owner and Contractor shall determine the permanent repair and related costs before performing the work. A record of the location of all field tile or on-site drain pipe encountered shall be kept by the Contractor and turned over to the Owner upon completion of the project.

SITE ACCESS AND RESOURCE PROTECTION NOTES

1. The Contractor shall maintain access to abutting public and private properties at all times during construction, except for brief periods of interruption with due notice. The Contractor shall notify the property owner no less than 24 hours in advance of the interruption of access and/or services. The notification will include the time and duration of the interruption.
2. The work described in these contract documents is being performed on public lands which may be open to the public at the time of construction. The Contractor shall assure the safety of all persons encountered during the work regardless of whether the location has been closed, fenced or signed as a construction zone.
3. Temporary access permits or road bonds shall be solely the responsibility of the Contractor.
4. The Contractor shall obtain, erect, maintain and remove all signs, barricades, fencing and other control devices as may be necessary to regulate, warn or guide vehicular or pedestrian traffic for purposes of maintaining a safe work site, whether or not those measures are described in the contract documents. These measures shall also be moved, relocated or increased in quantity depending on the daily work conditions.

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www.civiltechinc.com

Designed - JRR	Revised -
Drawn - TFS	Revised -
Checked - RTM	Revised -
Date - 11/10/2017	Revised -

LAKE COUNTY FOREST PRESERVE DISTRICT

GENERAL NOTES
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 1 of 2 Sheets

County	Total Sheets	Sheet No.
Lake	29	2

Project No. 63910-18006-887

SPECIAL PROJECT NOTES

1. This project shall be constructed concurrently with another separate project known as the "North Mill Creek Channel Restoration" (NMCCR). The NMCCR includes the final draining of the former Rasmussen Lake, restoration of the Mill Creek channel and excavation and deposition of soil materials from the former lake bottom. The Channel Restoration Contractor (for the NMCCR) and the Public Access Contractor (this project) shall share common areas of the site in pursuit of their respective contracts. It is imperative that the Public Access Contractor cooperate and coordinate with the other contractors and plan the work to minimize potential conflicts both in work logistics and cost factors.

2. The two projects will share a single site entry at US Route 45 just north of Miller Road, where an existing stabilized construction entry is located. The Public Access Contractor shall construct an extension to the existing entry directly to the south for their exclusive use. This stabilized construction extension shall be transitioned to a haul route which shall be used to access a staging area near the proposed parking lot.

3. The Channel Restoration Contractor will utilize and is solely responsible for the existing and modified haul routes as shown on the plans, including their restoration after project completion. The haul routes for NMCCR will cross the proposed trail at multiple locations. Refer to the plans for these locations and the temporary crossings required.

4. The Public Access Contractor shall minimize their use of these existing haul routes to perform the work. The primary access for this contract shall be the parking lot and trail construction limits as shown on the plans.

5. The proposed NMCCR includes the excavation, hauling, deposition and grading of soils from the former Rasmussen Lake bed. These fill areas will create new landforms which abut the proposed trail loop at the eastern limits of this project. Refer to the plans for more information. Although the exact construction schedule for NMCCR is unknown at this time, it is expected that the NMCCR filling will occur after the start of this contract. It is highly desirable to complete the Public Access earthwork and grading which is adjacent to the NMCCR fill areas before the NMCCR filling and grading occurs in order to manage new drainage patterns. Therefore, the Contractor shall be required to perform the work in the following sequence:

   A. Perform all tasks typical of site improvements projects, including mobilization, layout; site access improvements, vegetation removal and soil erosion and sediment control measures.

   B. Perform earthwork tasks at the Ethel's Loop Trail (Sta. 400+06 to Sta. 435.52.2), including topsoil stripping and stockpiling, culvert crossing installation, ditching and trail grading.

   C. Construct temporary crossings for NMCCR haul routes. The Owner and both Contractors shall meet prior to this work to confirm all locations and the number of crossings.

   D. Respread topsoil to within 2' of the proposed edge of trail and finish grade to proposed elevations to the construction limits.

   E. Perform seeding, erosion control blanket and hydromulch as per the plans for the entire Ethel's Loop Trail.

   F. Resume work on the other areas of the project.

VEGETATION REMOVAL - COMPLETE

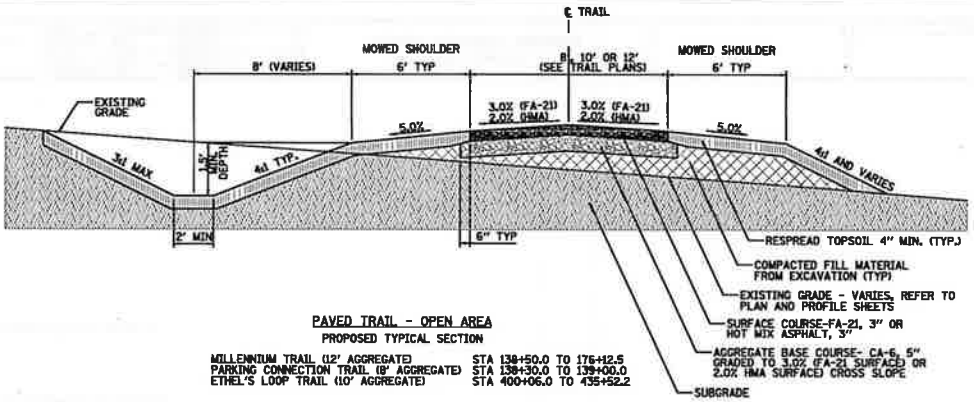
Vegetation Removal Complete shall be an all-inclusive lump sum payment item for all vegetation removal required to complete the project, including:

A. Field Mowing within the entire construction limits and access routes and staging areas to a height of no more than 6".
B. Cutting and removal of all trees and shrubs, including trees and brush 6" in size or less DBH which may or may not be shown on the plans and trees over 6" DBH which are shown on the plans.
C. Stump grinding of trees removed by the Contractor over 6" DBH and select stumps of trees removed by others as shown on the plans.
D. All related gathering, hauling, chipping and spreading of the processed materials listed above.

AVAILABLE REPORTS

1. Subsurface Drainage Inventory (Drain Tile Investigation Plan) January 10, 2011 is available upon request.

   Contact:
   Greg Walenter
   1899 Winchester Road
   Libertyville, Illinois 60048
   Office 847.968.3274
   Cell 847.489.6188
   gwalenter@lcfpd.org



PAVED TRAIL - OPEN AREA

PROPOSED TYPICAL SECTION

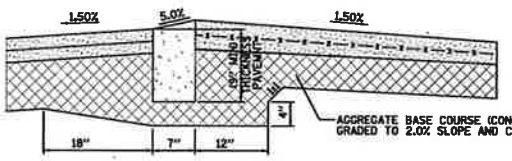
MILLENNIUM TRAIL (12' AGGREGATE)	STA 138+50.0 TO 176+12.5
PARKING CONNECTION TRAIL (8' AGGREGATE)	STA 138+30.0 TO 139+00.0
ETHEL'S LOOP TRAIL (10' AGGREGATE)	STA 400+06.0 TO 435+52.2

TRAIL - OPEN AREA NOTES

1. The typical section depicted above applies to both FA-21 aggregate and hot-mix asphalt surface types. Refer to the plan and profile sheets for surfacing requirements at specific trail locations. Note the difference in cross slopes for different surface types.
2. Specific trail locations may not require the ditching shown or may require ditching on both sides of the trail. Refer to other plan sheets for ditching requirements and locations.
3. All aggregate base, aggregate surface and hot-mix asphalt surfaces shall be installed using a paving machine. Aggregate trail surfaces shall be compacted with a roller no wider than half the trail width to maintain the crowned profile.
4. The existing grade lines shown in the sections are for illustrative purposes only. Refer to the plan and profile sheets for existing and proposed elevations and cut and fill requirements along the trail length.
5. A woven geotextile for ground stabilization may be required upon direction by the owner when unsuitable soil conditions are encountered and is not shown on the section.
6. The finished topsoil grade directly adjacent to paved trail edges must be equal to or slightly (1/4") lower than the edge of trail to assure positive drainage.
7. Provide a soft gradual transition between existing and proposed grading.

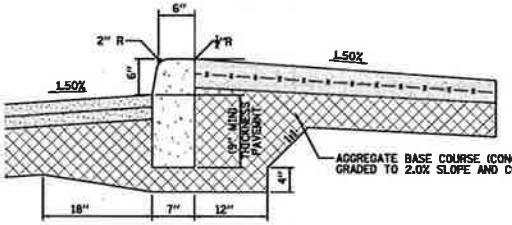
LANDSCAPE NOTES

1. Mowed trail shoulders shall be seeded with LCFP Low-Maintenance mix. Refer to other plan sheets for seed mixes outside of the mowed shoulders.
2. Mowed shoulders and seeded slopes 2.5:1 or less shall be hydro-mulched. Slopes greater than 2.5:1, ditches and other concentrated flow zones shall be covered with North American Green (NAG) S75BN erosion control blanket or approved equal and with the manufacturers recommended staple pattern. Ditches typically require a minimum of two (2) rolls of blanket at 6.67' width each.



CONCRETE DEPRESSED CURB

NOT TO SCALE

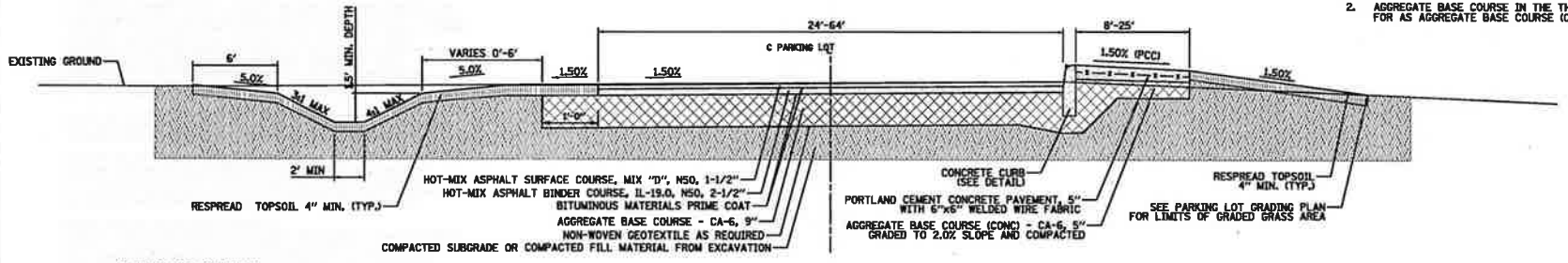


CONCRETE BARRIER CURB

NOT TO SCALE

CURB NOTES:

1. SEE TRANSITION BETWEEN BARRIER AND DEPRESSED CURB LOCATION ON PARKING LOT LAYOUT PLAN.
2. AGGREGATE BASE COURSE IN THE THICKENED WEDGE IS PAID FOR AS AGGREGATE BASE COURSE (CONCRETE), CA-6, 5"



6' WIDE PCC SIDEWALK

STA 137+00.0 TO 138+03.5

CONCRETE PAD AREA

STA 138+03.5 TO 138+30.0

PROPOSED HMA PARKING LOT WITH CONCRETE WALK TYPICAL SECTION

STA 136+12.0 TO 138+50.0

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Designed - JRR		Revised -
Drawn - TFS		Revised -
Checked - RTM		Revised -
Date - 11/10/2017		Revised -

LAKE COUNTY
FOREST PRESERVE DISTRICT

TYPICAL SECTIONS
ETHEL'S WOODS FOREST PRESERVE

NOT TO SCALE | Sheet No. 1 of 1 Sheets

County	Total Sheets	Sheet No.
Lake	29	4

Project No. 63910-18006-887

PROP. CURVE NM01
PI STA. = 136+50.13
Δ = 18° 09' 42" (LT)
D = 47° 44' 47"
R = 120.00'
T = 19.19'
L = 38.04'
E = 1.52'
P.C. STA. = 136+30.95
P.T. STA. = 136+68.99

PROP. CURVE NM02
PI STA. = 139+54.39
Δ = 37° 50' 11" (RT)
D = 57° 17' 45"
R = 100.00'
T = 34.27'
L = 66.04'
E = 5.71'
P.C. STA. = 139+20.12
P.T. STA. = 139+86.16

PROP. CURVE NM03
PI STA. = 141+22.10
Δ = 56° 16' 13" (RT)
D = 57° 17' 45"
R = 100.00'
T = 53.47'
L = 98.21'
E = 13.40'
P.C. STA. = 140+68.62
P.T. STA. = 141+66.83

PROP. CURVE NM04
PI STA. = 142+90.50
Δ = 62° 00' 39" (RT)
D = 31° 49' 52"
R = 180.00'
T = 108.18'
L = 194.81'
E = 30.01'
P.C. STA. = 141+72.33
P.T. STA. = 143+67.14

PROP. CURVE NM05
PI STA. = 146+06.94
Δ = 83° 23' 24" (LT)
D = 30° 58' 14"
R = 185.00'
T = 164.80'
L = 269.25'
E = 62.78'
P.C. STA. = 144+42.14
P.T. STA. = 147+11.39

PROP. CURVE NM06
PI STA. = 148+90.37
Δ = 61° 38' 22" (RT)
D = 19° 05' 55"
R = 300.00'
T = 178.98'
L = 322.74'
E = 49.33'
P.C. STA. = 147+11.39
P.T. STA. = 150+34.14

PROP. CURVE NM07
PI STA. = 154+89.74
Δ = 115° 28' 16" (LT)
D = 20° 50' 05"
R = 275.00'
T = 435.61'
L = 554.22'
E = 240.15'
P.C. STA. = 150+34.14
P.T. STA. = 155+88.38

PROP. CURVE NM08
PI STA. = 157+01.17
Δ = 9° 59' 32" (LT)
D = 7° 09' 43"
R = 800.00'
T = 69.94'
L = 139.52'
E = 3.05'
P.C. STA. = 156+31.24
P.T. STA. = 157+70.76

PROP. CURVE NM09
PI STA. = 158+15.82
Δ = 14° 40' 19" (LT)
D = 16° 22' 13"
R = 350.00'
T = 45.06'
L = 89.63'
E = 2.89'
P.C. STA. = 157+70.76
P.T. STA. = 158+60.38

PROP. CURVE NM10
PI STA. = 160+17.00
Δ = 24° 40' 19" (RT)
D = 23° 52' 24"
R = 240.00'
T = 52.49'
L = 103.35'
E = 5.67'
P.C. STA. = 159+64.51
P.T. STA. = 160+67.86

PROP. CURVE NM11
PI STA. = 162+28.44
Δ = 73° 37' 13" (RT)
D = 40° 55' 32"
R = 140.00'
T = 104.77'
L = 179.89'
E = 34.86'
P.C. STA. = 161+23.67
P.T. STA. = 163+03.56

PROP. CURVE NM12
PI STA. = 164+65.64
Δ = 68° 03' 36" (LT)
D = 23° 52' 24"
R = 240.00'
T = 162.08'
L = 285.11'
E = 49.60'
P.C. STA. = 163+03.56
P.T. STA. = 165+88.67

PROP. CURVE NM13
PI STA. = 167+66.34
Δ = 23° 00' 15" (RT)
D = 19° 05' 55"
R = 300.00'
T = 61.05'
L = 120.45'
E = 6.15'
P.C. STA. = 167+05.30
P.T. STA. = 168+25.75

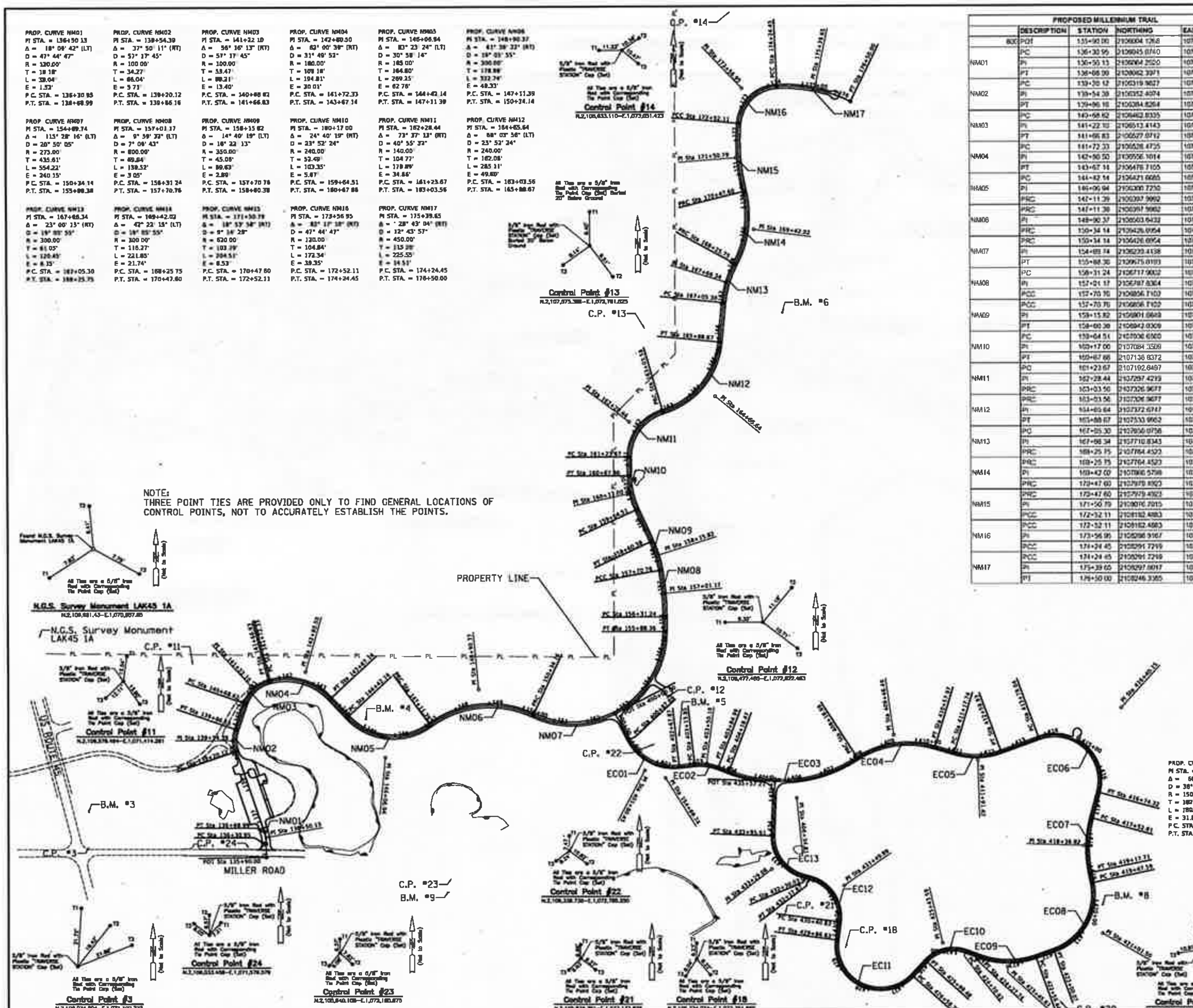
PROP. CURVE NM14
PI STA. = 169+42.02
Δ = 42° 22' 15" (LT)
D = 19° 05' 55"
R = 300.00'
T = 116.27'
L = 221.85'
E = 21.74'
P.C. STA. = 168+25.75
P.T. STA. = 170+47.60

PROP. CURVE NM15
PI STA. = 171+50.79
Δ = 18° 53' 34" (RT)
D = 9° 14' 29"
R = 620.00'
T = 103.19'
L = 204.51'
E = 8.53'
P.C. STA. = 170+47.60
P.T. STA. = 172+52.11

PROP. CURVE NM16
PI STA. = 173+56.95
Δ = 82° 17' 18" (RT)
D = 47° 44' 47"
R = 120.00'
T = 104.84'
L = 172.34'
E = 39.35'
P.C. STA. = 172+52.11
P.T. STA. = 174+24.45

PROP. CURVE NM17
PI STA. = 175+39.65
Δ = 28° 43' 04" (RT)
D = 12° 43' 57"
R = 450.00'
T = 115.20'
L = 225.55'
E = 14.51'
P.C. STA. = 174+24.45
P.T. STA. = 176+50.00

NOTE:
THREE POINT TIES ARE PROVIDED ONLY TO FIND GENERAL LOCATIONS OF CONTROL POINTS, NOT TO ACCURATELY ESTABLISH THE POINTS.



PROPOSED MILLENNIUM TRAIL				
	DESCRIPTION	STATION	NORTHING	EASTING
800	POT	135+90.00	2106004.1268	1071632.2252
NM01	PC	136+30.95	2106045.0740	1071631.6948
	PI	136+50.13	2106064.2520	1071631.4464
	PT	136+68.99	2106082.3971	1071625.2327
NM02	PC	139+20.12	2106319.9627	1071543.6723
	PI	139+54.39	2106352.4074	1071532.7686
	PT	139+86.16	2106384.8264	1071543.1669
NM03	PC	140+68.62	2106462.8335	1071570.6467
	PI	141+22.10	2106513.4143	1071587.9968
	PT	141+66.83	2106527.9712	1071639.6973
NM04	PC	141+72.33	2106528.4735	1071645.0062
	PI	142+90.50	2106556.1014	1071749.5965
	PT	143+67.14	2106478.7105	1071823.0778
NM05	PC	144+42.14	2106421.6665	1071874.0227
	PI	146+06.94	2106300.7250	1071985.9653
	PRC	147+11.39	2106397.9992	1072118.0027
NM06	PRC	147+11.39	2106397.9992	1072118.0027
	PI	148+90.37	2106503.6432	1072263.4633
	PRC	150+34.14	2106426.6954	1072425.0536
NM07	PRC	150+34.14	2106426.6954	1072425.0536
	PI	154+89.74	2106233.4138	1072818.3446
	PT	155+88.38	2106675.0193	1072818.2655
NM08	PC	156+31.24	2106717.9002	1072818.2796
	PI	157+01.17	2106787.8364	1072818.2781
	PCC	157+70.76	2106856.7102	1072806.1258
NM09	PCC	157+70.76	2106856.7102	1072806.1258
	PI	159+15.82	2106901.6649	1072786.3014
	PT	158+60.38	2106942.0309	1072779.4927
NM10	PC	159+64.51	2107036.6500	1072736.0062
	PI	160+17.00	2107084.3509	1072714.1173
	PT	160+67.86	2107136.8372	1072714.1173
NM11	PC	161+23.67	2107192.8497	1072714.1173
	PI	162+28.44	2107297.4219	1072714.1173
	PRC	163+03.56	2107326.9677	1072814.6373
NM12	PRC	163+03.56	2107326.9677	1072814.6373
	PI	164+65.64	2107372.6747	1072970.1407
	PT	165+88.67	2107533.9962	1072985.8302
NM13	PC	167+05.30	2107650.0756	1072997.1198
	PI	167+66.34	2107710.8343	1073003.0290
	PRC	168+25.75	2107764.4523	1073032.2121
NM14	PRC	168+25.75	2107764.4523	1073032.2121
	PI	169+47.00	2107866.5798	1073087.7079
	PRC	170+47.60	2107979.4923	1073088.0380
NM15	PRC	170+47.60	2107979.4923	1073088.0380
	PI	171+50.79	2108076.7015	1073030.4913
	PCC	172+52.11	2108182.4883	1073044.5513
NM16	PCC	172+52.11	2108182.4883	1073044.5513
	PI	173+56.95	2108286.9167	1073053.8474
	PCC	174+24.45	2108291.7219	1073158.5787
NM17	PCC	174+24.45	2108291.7219	1073158.5787
	PI	175+39.65	2108297.8017	1073273.6544
	PT	176+50.00	2108246.3365	1073377.1122

PROPOSED ETHEL'S LOOP TRAIL				
	DESCRIPTION	STATION	NORTHING	EASTING
500	POT	400+00.00	2106430.7338	1072609.6491
EC01	PC	400+87.69	2106352.8575	1072709.9517
	PI	401+90.45	2106261.5859	1072757.1815
	PT	402+67.87	2106272.6747	1072859.3412
EC02	PC	403+13.85	2106277.6312	1072905.0458
	PI	403+50.10	2106281.5398	1072941.0878
	PT	403+84.99	2106268.5566	1072974.9366
EC03	PC	404+18.47	2106256.5672	1073006.1946
	PI	406+34.81	2106170.0915	1073208.1829
	PRC	408+18.69	2106236.8213	1073389.6808
EC04	PRC	408+18.69	2106236.8213	1073389.6808
	PI	409+46.49	2106306.3737	1073496.9060
	PT	410+57.97	2106329.2533	1073619.2043
EC05	PC	411+17.74	2106311.8007	1073676.4041
	PI	411+91.42	2106290.4948	1073746.9035
	PT	412+59.93	2106315.8896	1073816.0710
EC06	PC	413+79.04	2106356.8804	1073927.8923
	PI	416+40.15	2106446.8248	1074173.0332
	PT	416+74.32	2106194.8131	1074104.6909
EC07	PC	417+52.81	2106119.0585	1074084.1342
	PI	418+36.82	2106037.9794	1074062.1433
	PT	419+17.71	2105955.7520	1074079.3500
EC08	PC	419+47.59	2105926.4984	1074085.4715
	PI	421+01.50	2105775.8587	1074116.5944
	PT	422+00.07	2105725.3475	1073971.8141
EC09	PC	422+56.44	2105706.6455	1073918.3600
	PI	423+45.61	2105677.5826	1073834.1328
	PT	424+27.74	2105708.2255	1073750.3073
EC10	PC	424+70.62	2105722.9626	1073710.1274
	PI	425+43.59	2105748.0383	1073641.6056
	PT	425+99.48	2105694.6817	1073591.6565
EC11	PC	426+58.75	2105651.3032	1073551.4447
	PI	430+05.00	2105354.1204	1073274.4589
	PT	429+86.63	2105756.8982	1073327.4571
EC12	PC	430+40.83	2105810.6382	1073334.5283
	PI	431+49.88	2105918.7817	1073348.7554
	PT	432+17.87	2105943.2330	1073242.4810
EC13	PC	432+30.03	2105945.9613	1073230.8324
	PI	433+29.06	2106008.1829	1073134.1296
	PT	433+95.61	2106067.1498	1073137.6347
784	POT	435+57.21	2106228.6449	1073143.3545

SURVEY

BASIS OF ELEVATIONS

ELEVATIONS ARE BASED ON THE FOUND NATIONAL GEODETIC SURVEY MONUMENTS LAK45 1A, P.I.D. AJ2896, PUBLISHED NAVD '88 ELEVATION 759.17 AND LAK45 1B, P.I.D. AJ2904, PUBLISHED NAVD '88 ELEVATION 759.25.

BASIS OF COORDINATES

BEARINGS ARE REFERENCED TO THE ILLINOIS COORDINATE SYSTEM NAD 83(2011) EAST ZONE AT FOUND NATIONAL GEODETIC SURVEY MONUMENTS LAK45 1A, P.I.D. AJ2896, PUBLISHED COORDINATE VALUES OF N.2,106,661.43- E.1,070,957.85 AND LAK45 1B, P.I.D. AJ2904, PUBLISHED COORDINATE VALUES OF N.2,108,804.42- E.1,070,259.49.

PROP. CURVE EC01
PI STA. = 401+90.45
Δ = 68° 49' 36" (LT)
D = 38° 11' 50"
R = 150.00'
T = 102.78'
L = 180.19'
E = 31.82'
P.C. STA. = 400+87.69
P.T. STA. = 402+67.87

PROP. CURVE EC02
PI STA. = 403+50.10
Δ = 27° 16' 28" (RT)
D = 38° 11' 50"
R = 150.00
T = 36.25'
L = 71.14'
E = 4.32'
P.C. STA. = 403+13.85
P.T. STA. = 403+84.99

PROP. CURVE EC03
PI STA. = 406+34.81
Δ = 53° 57' 17" (LT)
D = 13° 28' 53"
R = 425.00'
T = 216.34'
L = 400.22'
E = 51.89'
P.C. STA. = 404+18.47
P.T. STA. = 408+18.69

PROP. CURVE EC04
PI STA. = 409+46.49
Δ = 49° 51' 13" (RT)
D = 20° 50' 05"
R = 275.00'
T = 127.81'
L = 239.28'
E = 28.25'
P.C. STA. = 408+18.69
P.T. STA. = 410+57.97

PROP. CURVE EC05
PI STA. = 411+91.42
Δ = 37° 01' 48" (LT)
D = 26° 02' 37"
R = 220.00'
T = 73.68'
L = 142.19'
E = 12.01'
P.C. STA. = 411+17.74
P.T. STA. = 412+59.93

PROP. CURVE EC06
PI STA. = 416+40.15
Δ = 125° 19' 16" (RT)
D = 42° 26' 29"
R = 135.00'
T = 261.12'
L = 295.28'
E = 158.95'
P.C. STA. = 413+79.04
P.T. STA. = 416+74.32

PROP. CURVE EC07
PI STA. = 418+36.82
Δ = 26° 59' 39" (LT)
D = 16° 22' 13"
R = 350.00'
T = 84.01'
L = 164.90'
E = 9.94'
P.C. STA. = 417+52.81
P.T. STA. = 419+17.71

PROP. CURVE EC08
PI STA. = 421+01.50
Δ = 82° 39' 37" (RT)
D = 32° 44' 26"
R = 175.00'
T = 153.90'
L = 252.47'
E = 58.05'
P.C. STA. = 419+47.59
P.T. STA. = 422+00.07

PROP. CURVE EC09
PI STA. = 423+45.61
Δ = 39° 15' 32" (RT)
D = 22° 55' 08"
R = 250.00'
T = 89.17'
L = 171.30'
E = 15.43'
P.C. STA. = 422+56.44
P.T. STA. = 424+27.74

PROP. CURVE EC10
PI STA. = 425+43.59
Δ = 67° 06' 53" (LT)
D = 52° 05' 13"
R = 110.00'
T = 72.97'
L = 128.85'
E = 22.00'
P.C. STA. = 424+70.62
P.T. STA. = 425+99.48

PROP. CURVE EC11
PI STA. = 430+05.00
Δ = 144° 30' 38" (RT)
D = 44° 04' 25"
R = 130.00'
T = 406.25'
L = 327.88'
E = 296.54'
P.C. STA. = 426+58.75
P.T. STA. = 429+86.63

PROP. CURVE EC12
PI STA. = 431+49.88
Δ = 84° 31' 44" (LT)
D = 47° 44' 47"
R = 120.00'
T = 109.06'
L = 177.04'
E = 42.15'
P.C. STA. = 430+40.83
P.T. STA. = 432+17.87

PROP. CURVE EC13
PI STA. = 433+29.06
Δ = 79° 03' 41" (RT)
D = 47° 44' 47"
R = 120.00'
T = 99.03'
L = 165.58'
E = 35.58'
P.C. STA. = 432+30.03
P.T. STA. = 433+95.61

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Checked - RTM	Revised -
Date - 11/10/2017	Revised -

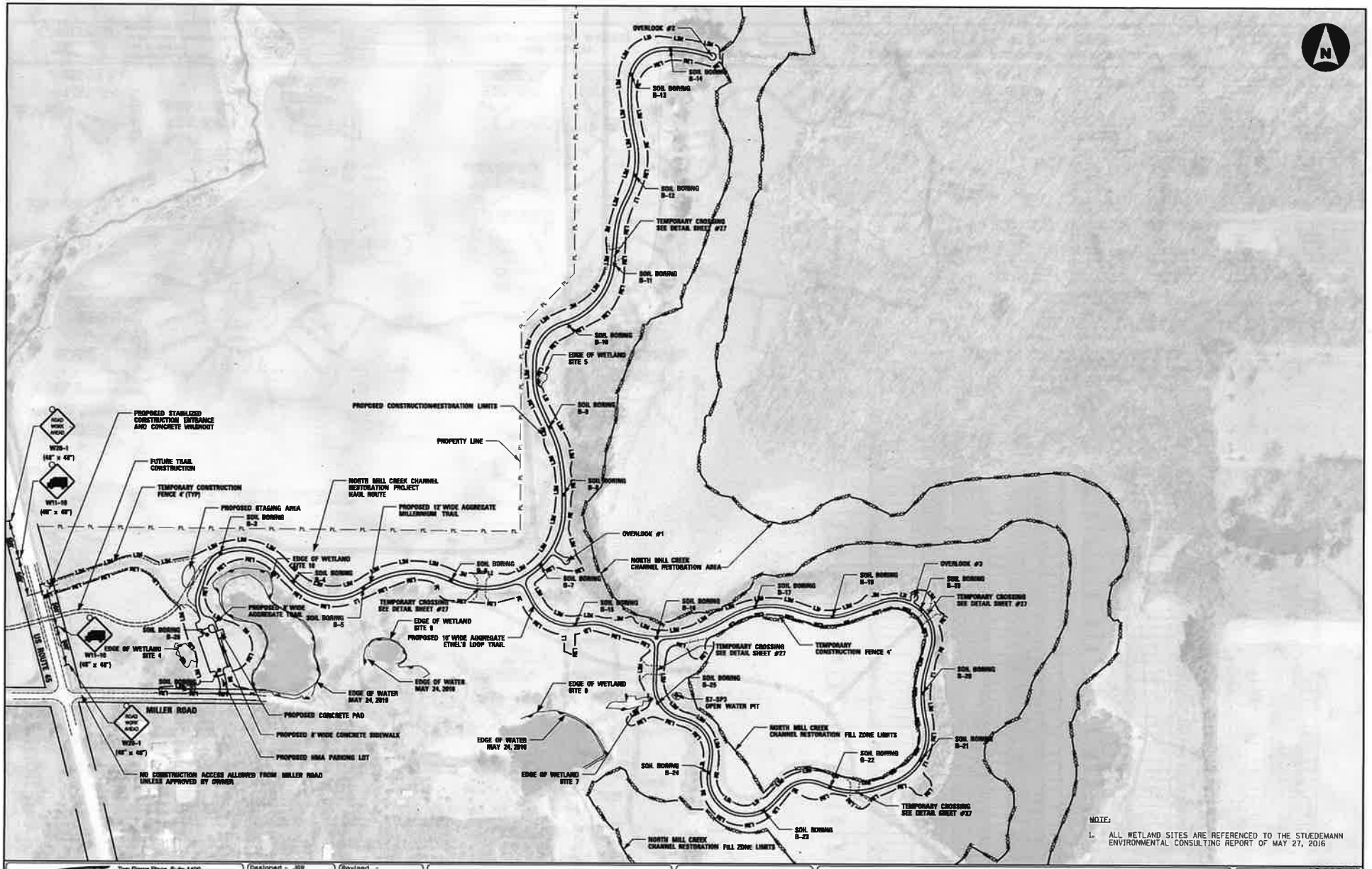
LAKE COUNTY
FOREST PRESERVE DISTRICT

SCALES
0 150 300

OVERALL LAYOUT KEY, ALIGNMENT, TIES AND BENCHMARKS
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 1 of 1 Sheets

County	Total Sheets	Sheet No.
Lake	29	5

Project No. 63910-18006-88T



NOTE:

1. ALL WETLAND SITES ARE REFERENCED TO THE STUEDEMANN ENVIRONMENTAL CONSULTING REPORT OF MAY 27, 2016

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Date - 11/10/2017	Revised -	

LAKE COUNTY
FOREST PRESERVE DISTRICT

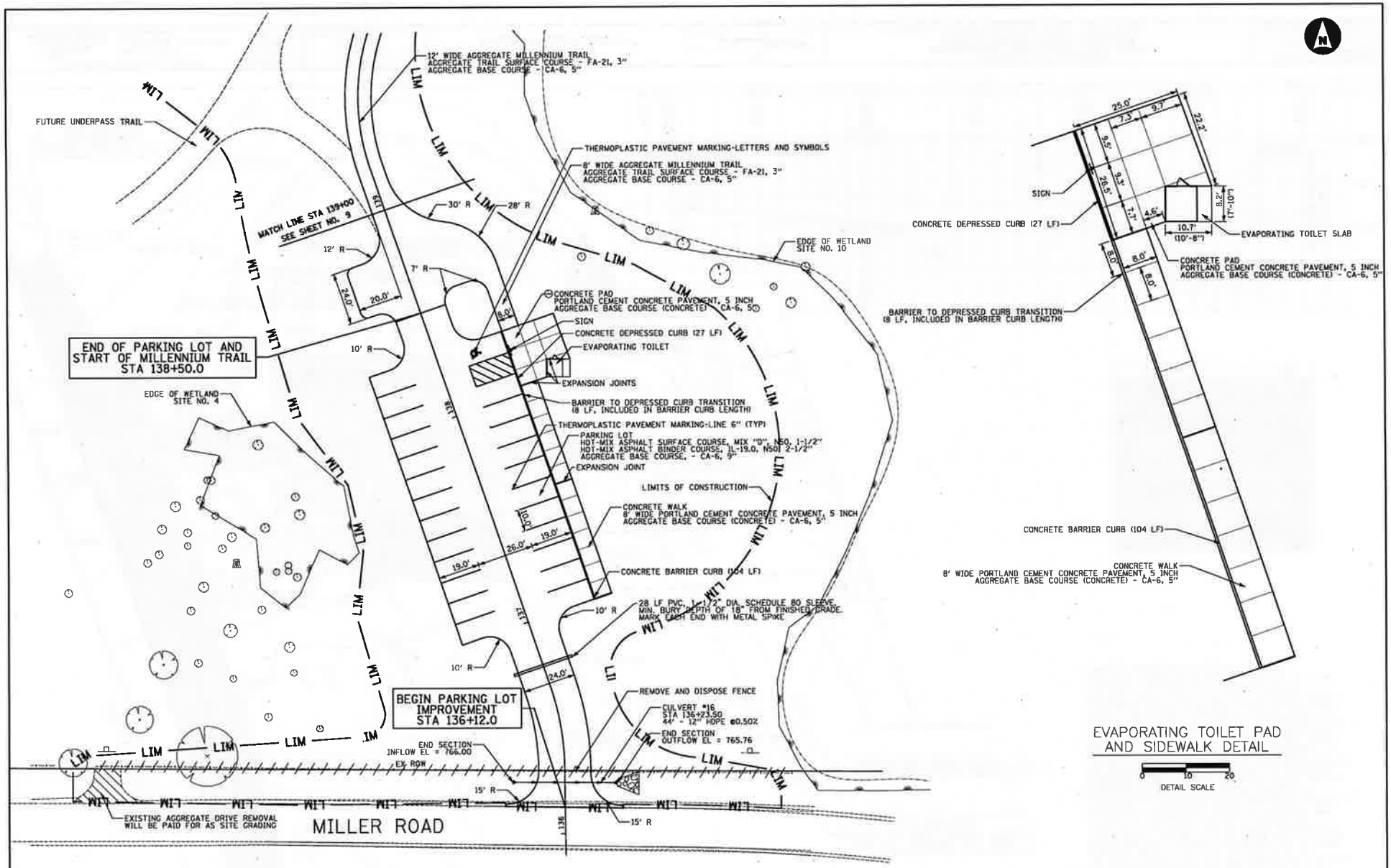
SCALES
0 150 300

OVERALL LAYOUT SITE PLAN
ETHEL'S WOODS FOREST PRESERVE

Sheet No. 1 of 1 Sheets

County	Total Sheets	Sheet No.
Lake	29	6

Project No. 63910-18006-887



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Date - 11/10/2017	Revised -	

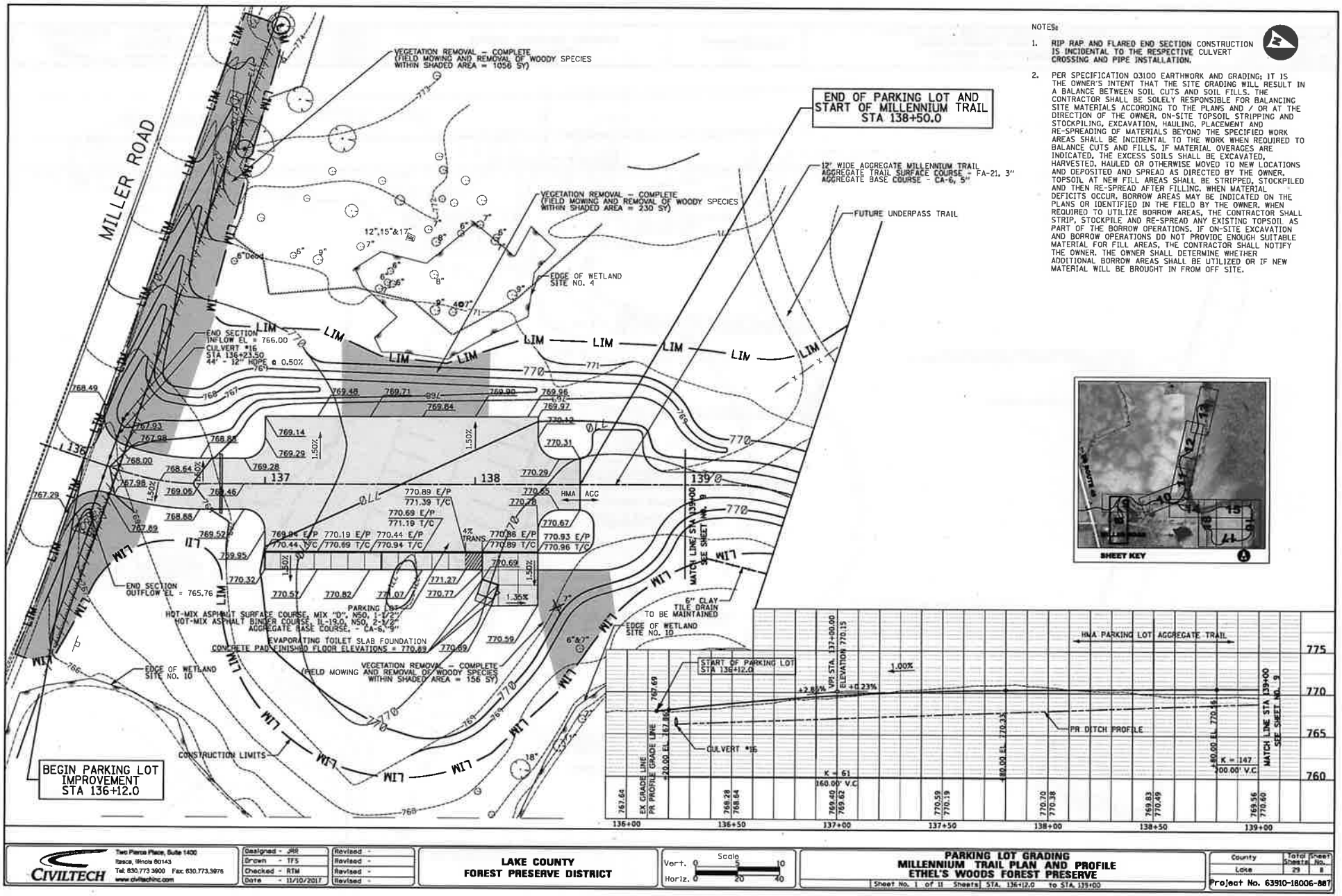
LAKE COUNTY
FOREST PRESERVE DISTRICT

Scale
0 20 40

PARKING LOT LAYOUT PLAN
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 1 of 1 Sheets STA. 136+12.0 to STA. 139+00

County	Total Sheets	Sheet No.
Lake	29	7

Project No. 63910-18006-00P



NOTES:

1. RIP RAP AND FLARED END SECTION CONSTRUCTION IS INCIDENTAL TO THE RESPECTIVE CULVERT CROSSING AND PIPE INSTALLATION.
2. PER SPECIFICATION 03100 EARTHWORK AND GRADING; IT IS THE OWNER'S INTENT THAT THE SITE GRADING WILL RESULT IN A BALANCE BETWEEN SOIL CUTS AND SOIL FILLS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR BALANCING SITE MATERIALS ACCORDING TO THE PLANS AND / OR AT THE DIRECTION OF THE OWNER. ON-SITE TOPSOIL STRIPPING AND STOCKPILING, EXCAVATION, HAULING, PLACEMENT AND RE-SPREADING OF MATERIALS BEYOND THE SPECIFIED WORK AREAS SHALL BE INCIDENTAL TO THE WORK WHEN REQUIRED TO BALANCE CUTS AND FILLS. IF MATERIAL OVERAGES ARE INDICATED, THE EXCESS SOILS SHALL BE EXCAVATED, HARVESTED, HAULED OR OTHERWISE MOVED TO NEW LOCATIONS AND DEPOSITED AND SPREAD AS DIRECTED BY THE OWNER. TOPSOIL AT NEW FILL AREAS SHALL BE STRIPPED, STOCKPILED AND THEN RE-SPREAD AFTER FILLING. WHEN MATERIAL DEFICITS OCCUR, BORROW AREAS MAY BE INDICATED ON THE PLANS OR IDENTIFIED IN THE FIELD BY THE OWNER. WHEN REQUIRED TO UTILIZE BORROW AREAS, THE CONTRACTOR SHALL STRIP, STOCKPILE AND RE-SPREAD ANY EXISTING TOPSOIL AS PART OF THE BORROW OPERATIONS. IF ON-SITE EXCAVATION AND BORROW OPERATIONS DO NOT PROVIDE ENOUGH SUITABLE MATERIAL FOR FILL AREAS, THE CONTRACTOR SHALL NOTIFY THE OWNER. THE OWNER SHALL DETERMINE WHETHER ADDITIONAL BORROW AREAS SHALL BE UTILIZED OR IF NEW MATERIAL WILL BE BROUGHT IN FROM OFF SITE.

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Date - 11/10/2017	Revised -	

LAKE COUNTY FOREST PRESERVE DISTRICT

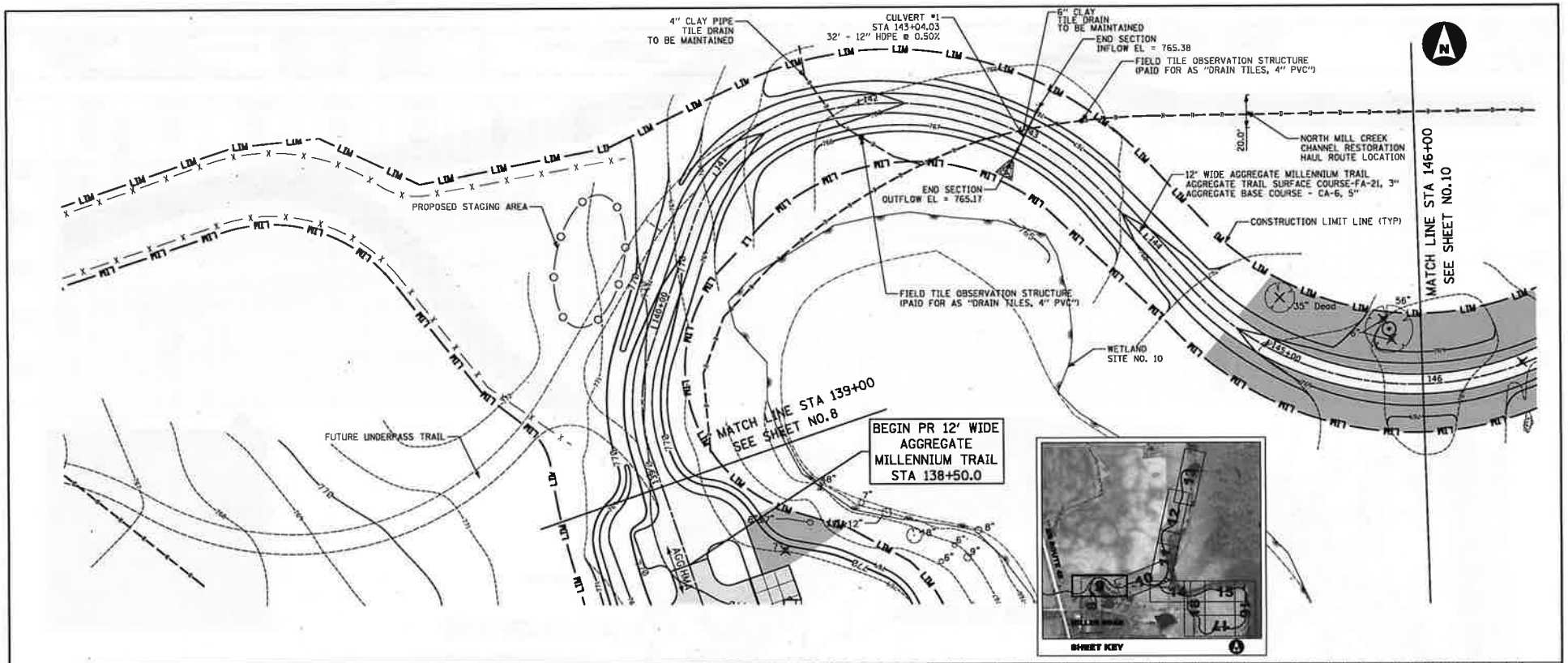
Scale: Vert. 0 5 10; Horiz. 0 20 40

PARKING LOT GRADING
MILLENNIUM TRAIL PLAN AND PROFILE
ETHEL'S WOODS FOREST PRESERVE

Sheet No. 1 of 11 Sheets STA. 136+12.0 to STA. 139+00

County	Total Sheets	Sheet No.
Lake	29	8

Project No. 63910-18006-887



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Checked - RTM		Revised -
Date - 11/10/2017		Revised -

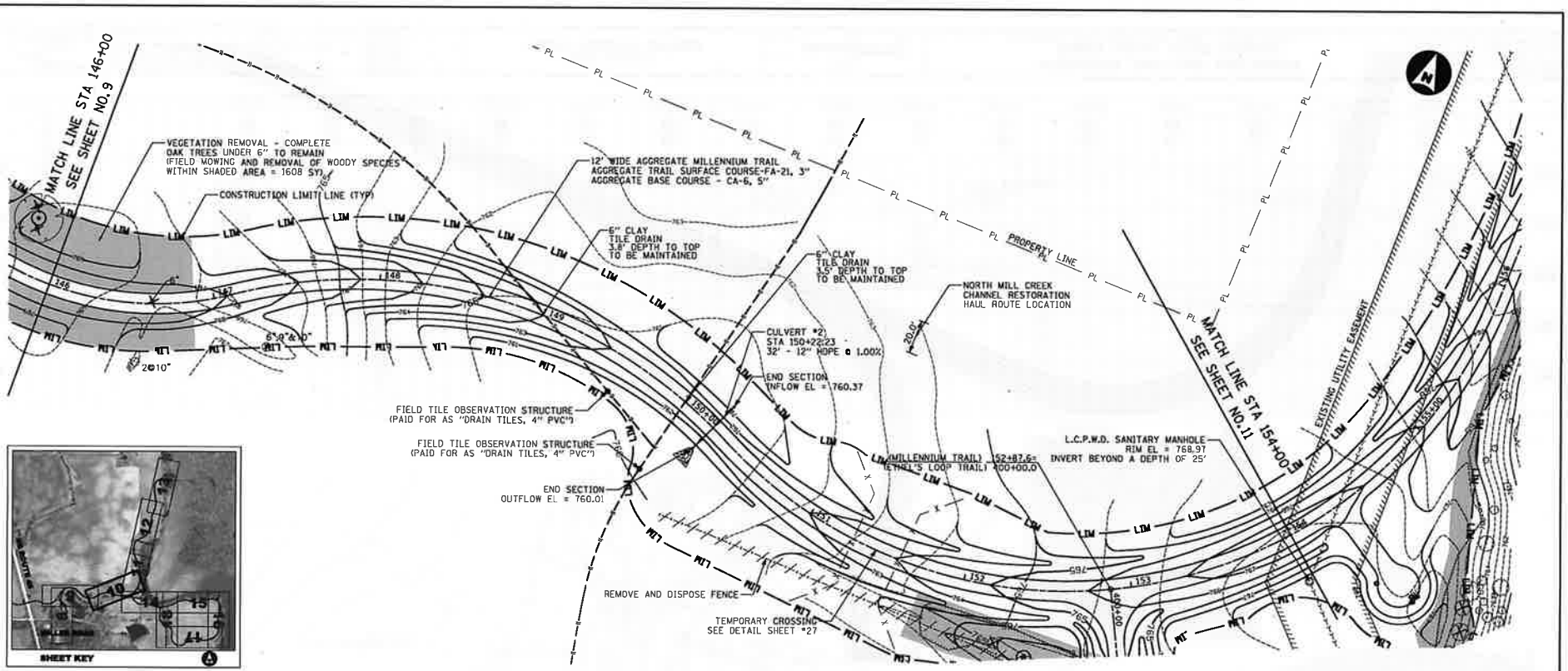
LAKE COUNTY FOREST PRESERVE DISTRICT

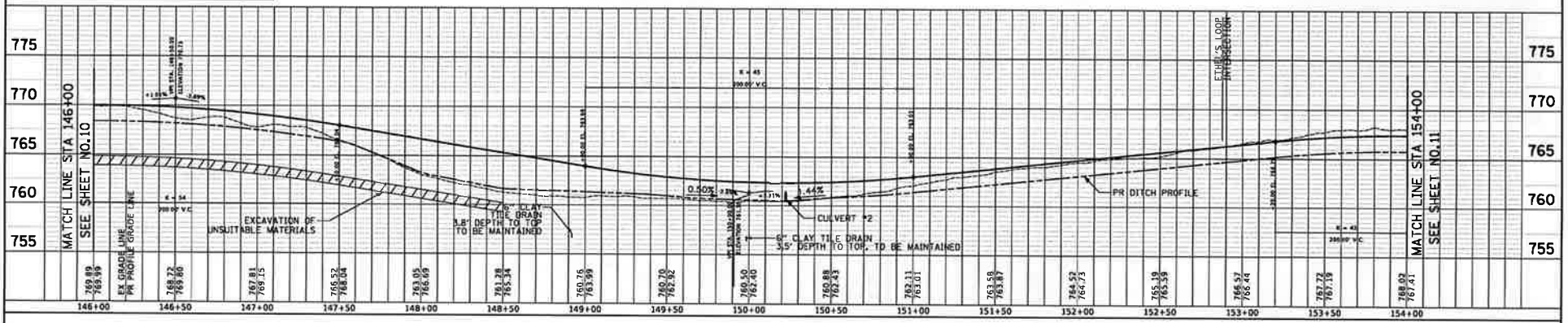
Scale
Vert. 0 5 10
Horiz. 0 30 60

MILLENNIUM TRAIL PLAN AND PROFILE
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 2 of 11 Sheets STA. 139+00 to STA. 146+00

County	Total Sheets	Sheet No.
Lake	29	9

Project No. 63910-18006-88T





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Checked - RTM	Revised -		
Date - 11/10/2017	Revised -		

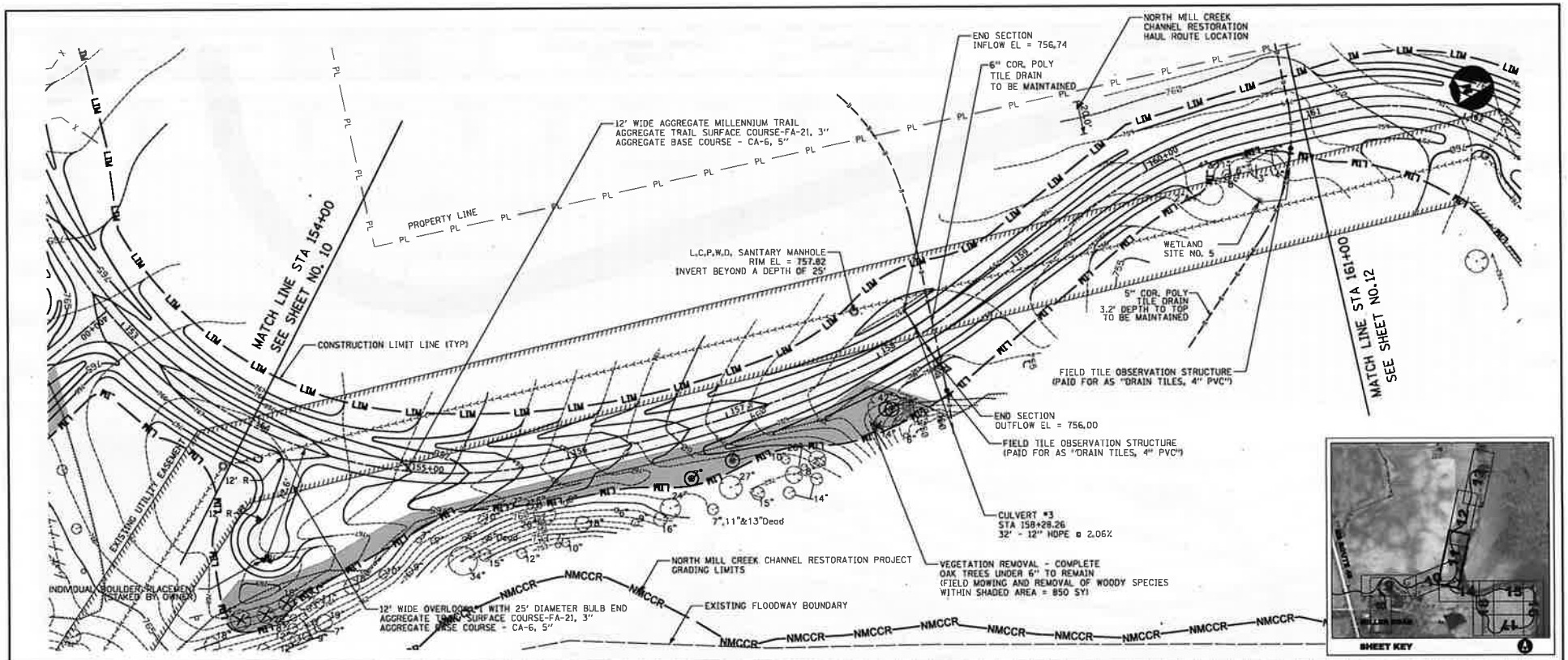
LAKE COUNTY
FOREST PRESERVE DISTRICT

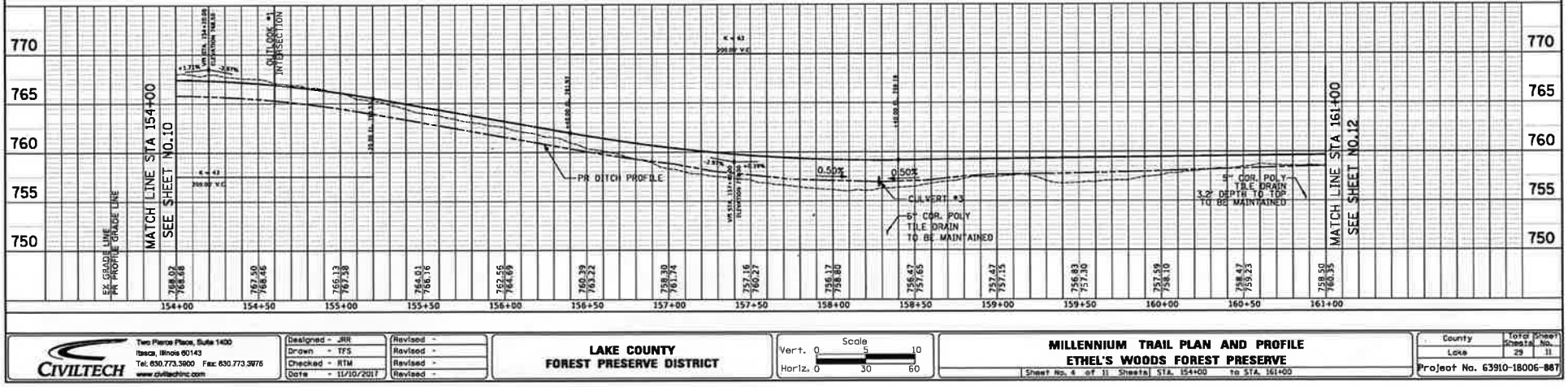
Scale
Vert. 0 5 10
Horiz. 0 30 60

MILLENNIUM TRAIL PLAN AND PROFILE
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 3 of 11 Sheets STA. 146+00 to STA. 154+00

County	Total Sheets	Sheet No.
Lake	29	10

Project No. 63910-18006-887





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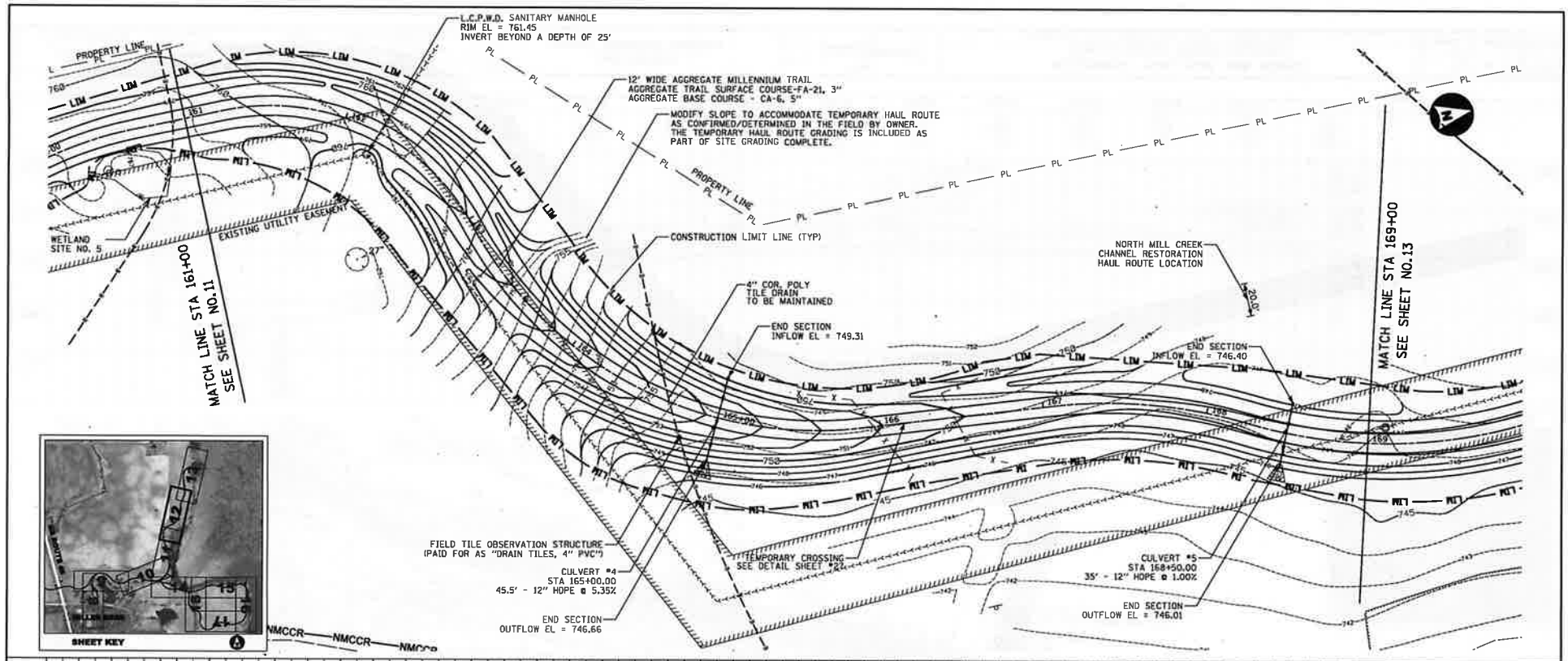

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Date - 11/10/2017	Revised -	

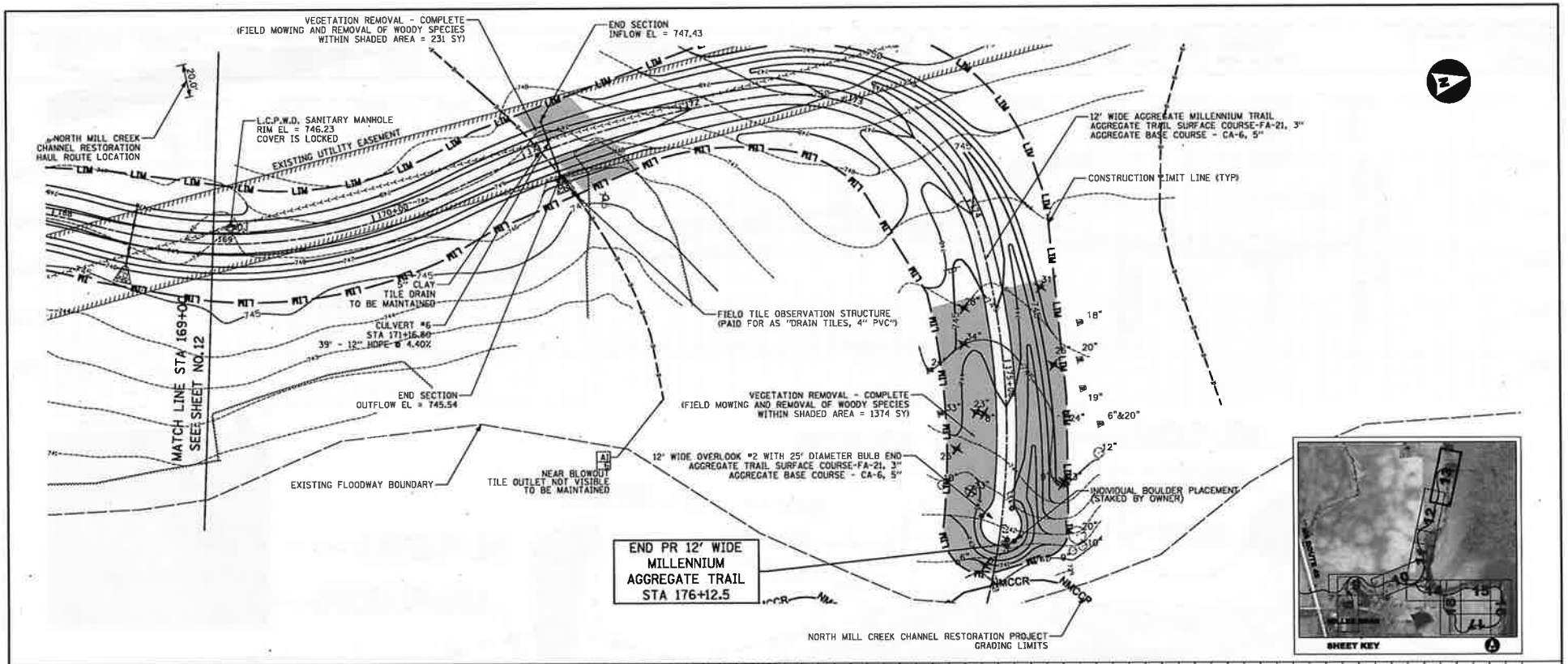
LAKE COUNTY FOREST PRESERVE DISTRICT

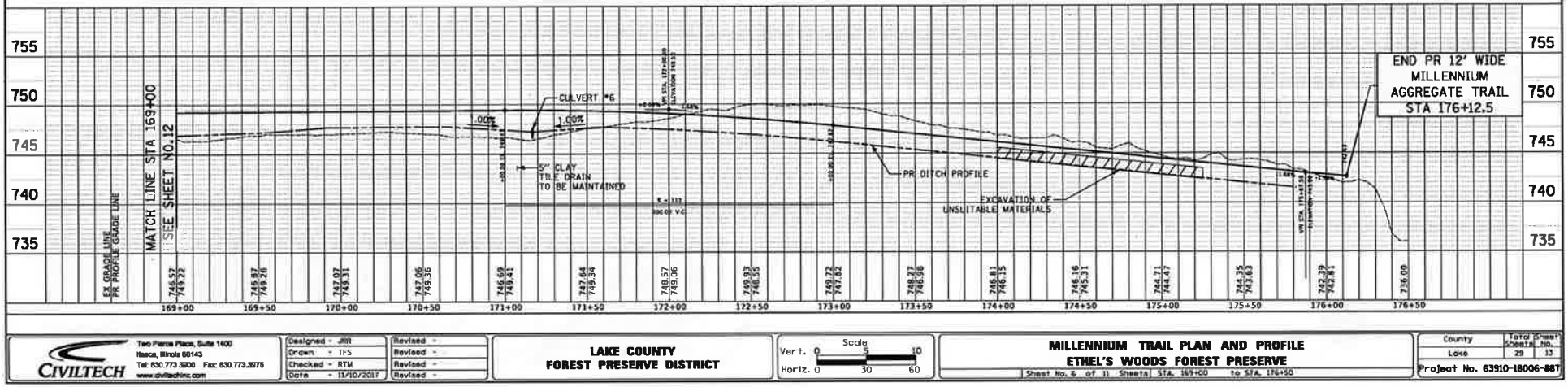
Scale
Vert. 0 5 10
Horiz. 0 30 60

MILLENNIUM TRAIL PLAN AND PROFILE
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 5 of 11 Sheets STA. 161+00 to STA. 169+00

County	Total Sheets	Sheet No.
Lake	29	12

Project No. 63910-18006-887





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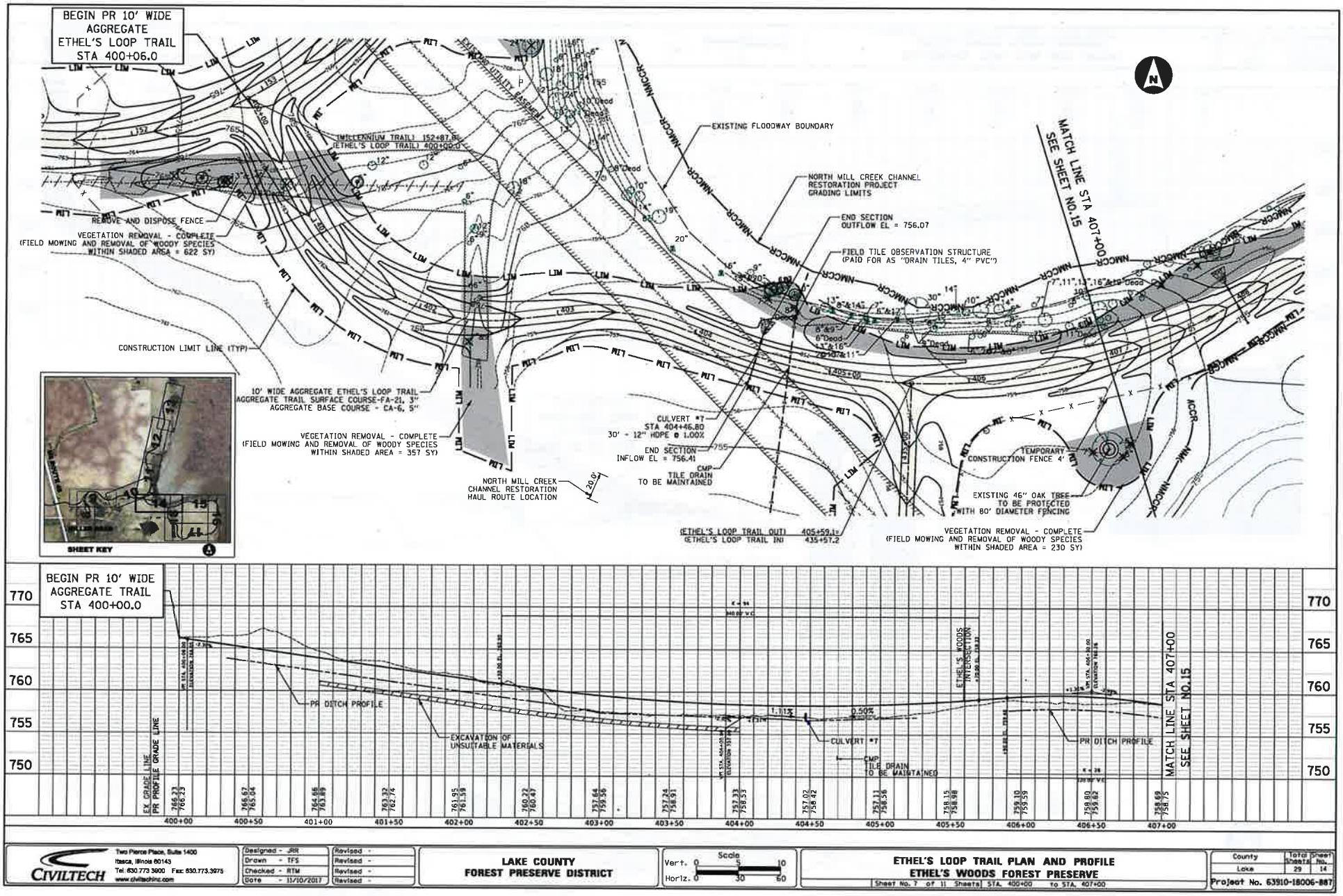
LAKE COUNTY
FOREST PRESERVE DISTRICT

Scale
Vert. 0 5 10
Horiz. 0 30 60

MILLENNIUM TRAIL PLAN AND PROFILE
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 6 of 11 Sheets STA. 169+00 to STA. 176+50

County	Total Sheets	Sheet No.
Lake	29	13

Project No. 63910-18006-887



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Date - 11/10/2017	Revised -

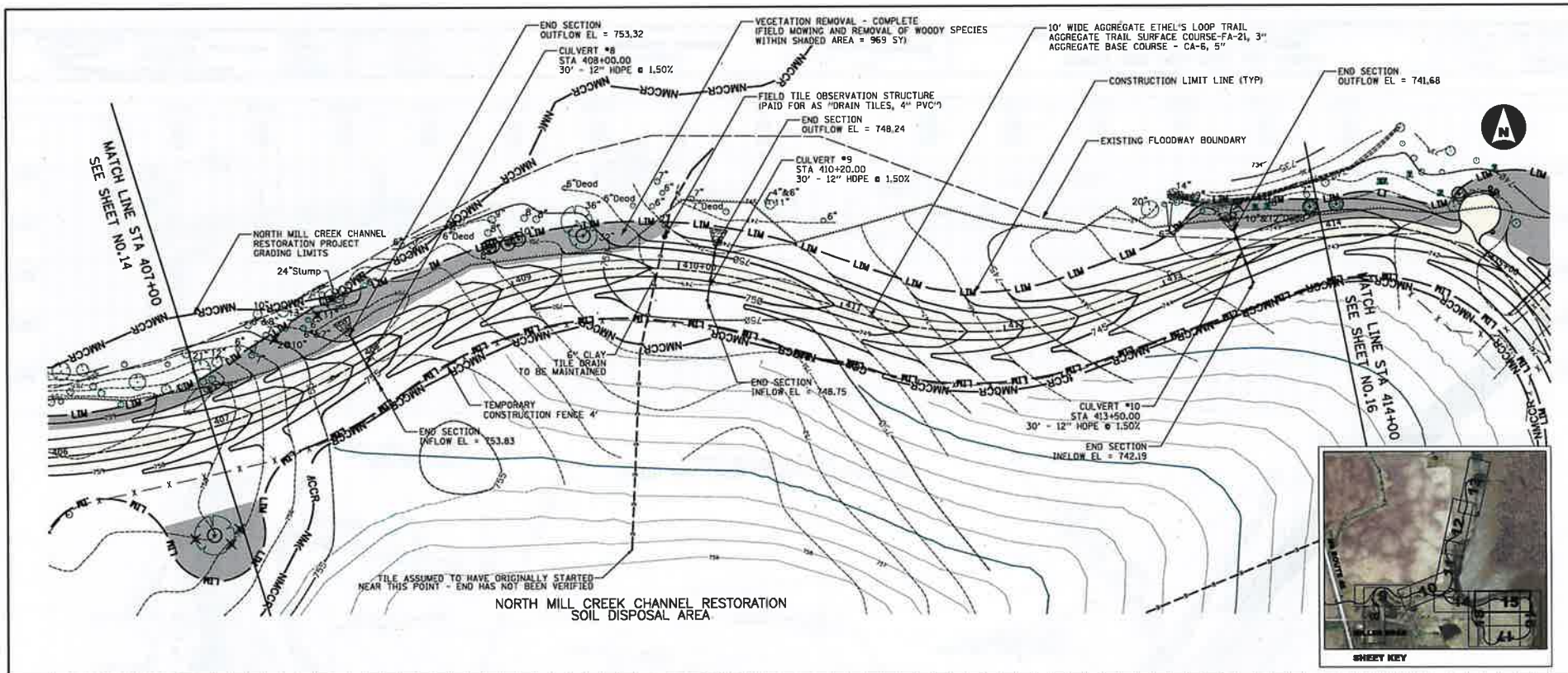
LAKE COUNTY FOREST PRESERVE DISTRICT

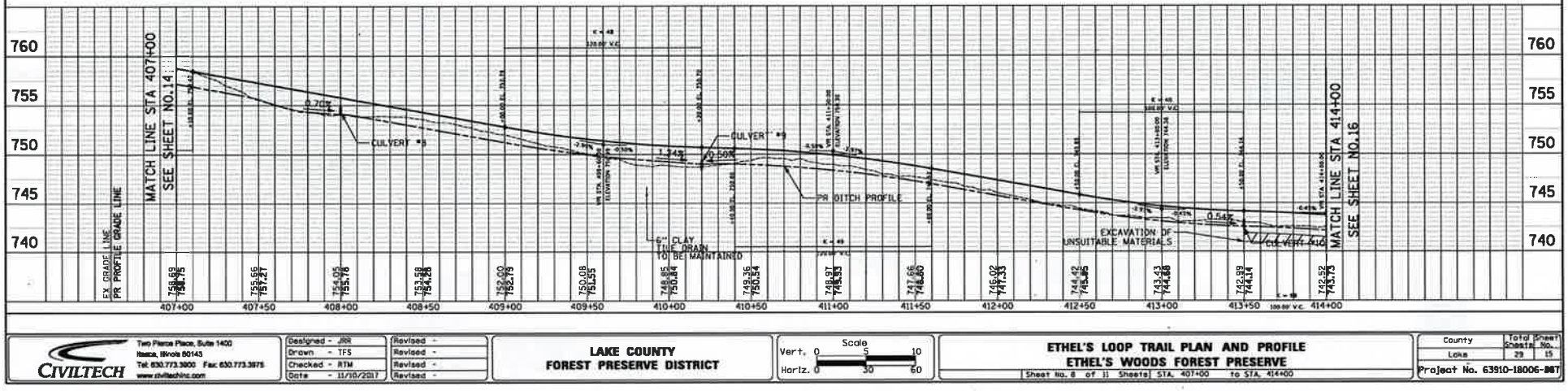
Scale
Vert. 0 5 10
Horiz. 0 30 60

ETHEL'S LOOP TRAIL PLAN AND PROFILE
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 7 of 11 Sheets STA. 400+00 to STA. 407+00

County	Total Sheets	Sheet No.
Lake	29	14

Project No. 63910-18006-887





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Date - 11/10/2017	Revised -

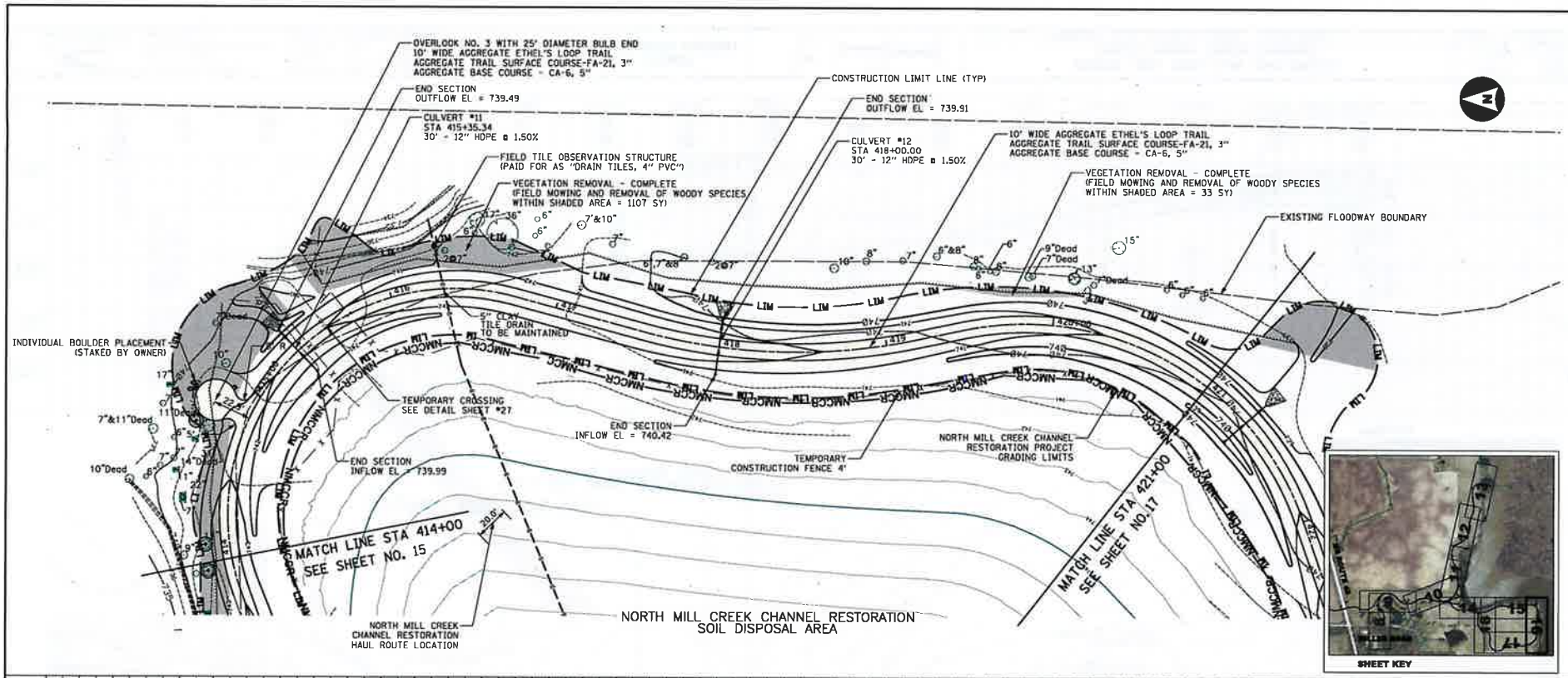
LAKE COUNTY
FOREST PRESERVE DISTRICT

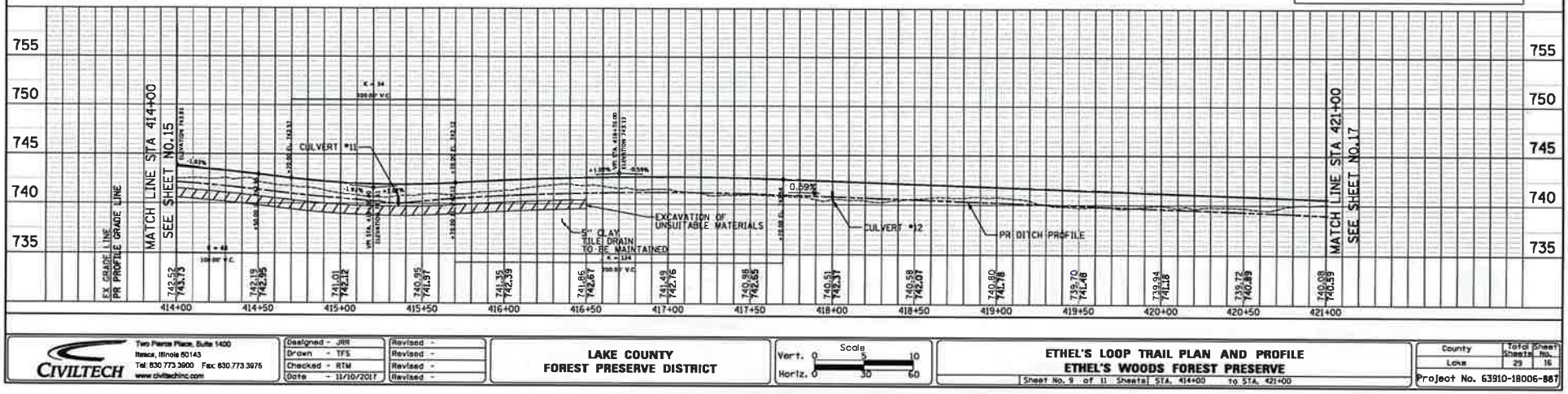
Scale
Vert. 0 5 10
Horiz. 0 30 60

ETHEL'S LOOP TRAIL PLAN AND PROFILE
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 8 of 11 Sheets STA. 407+00 to STA. 414+00

County	Total Sheets	Sheet No.
Lake	29	15

Project No. 63910-18006-B8T





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Checked - RTM | Revised -
Date - 11/10/2017 | Revised -

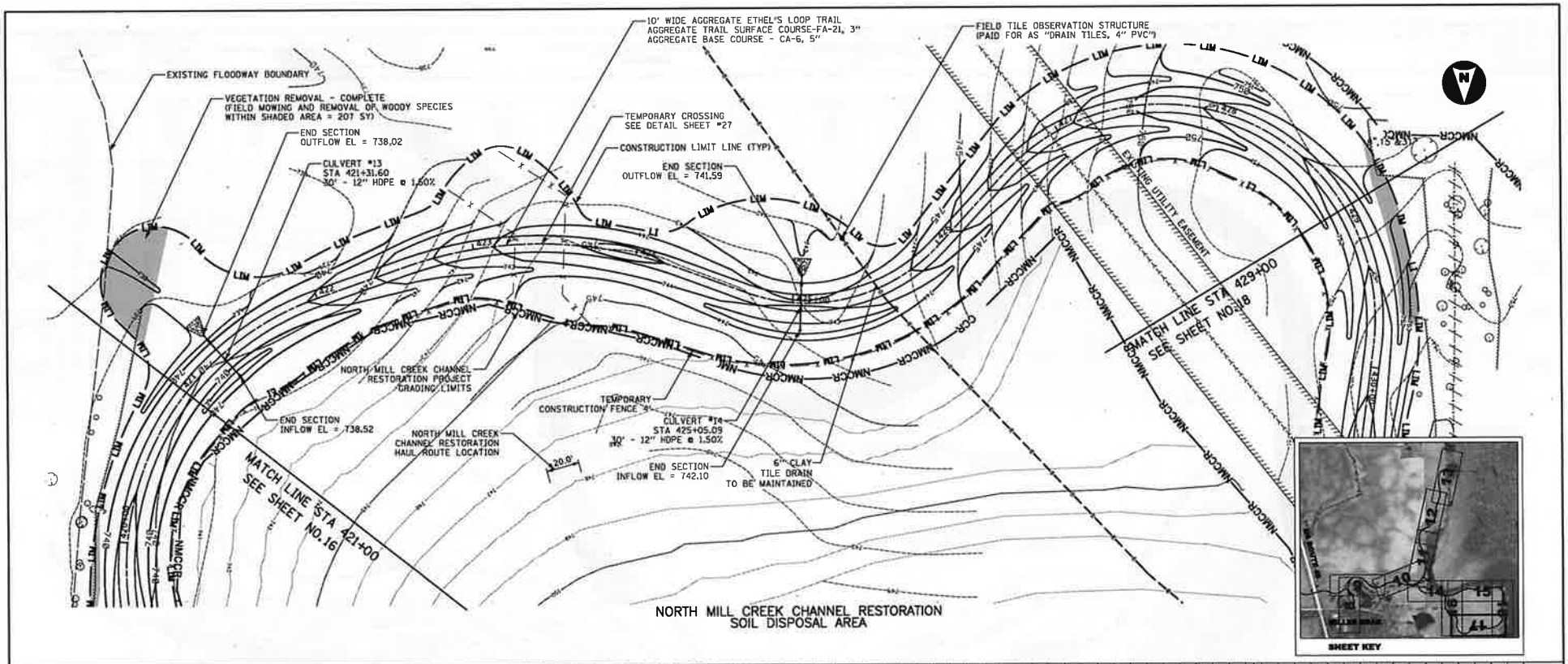
LAKE COUNTY
FOREST PRESERVE DISTRICT

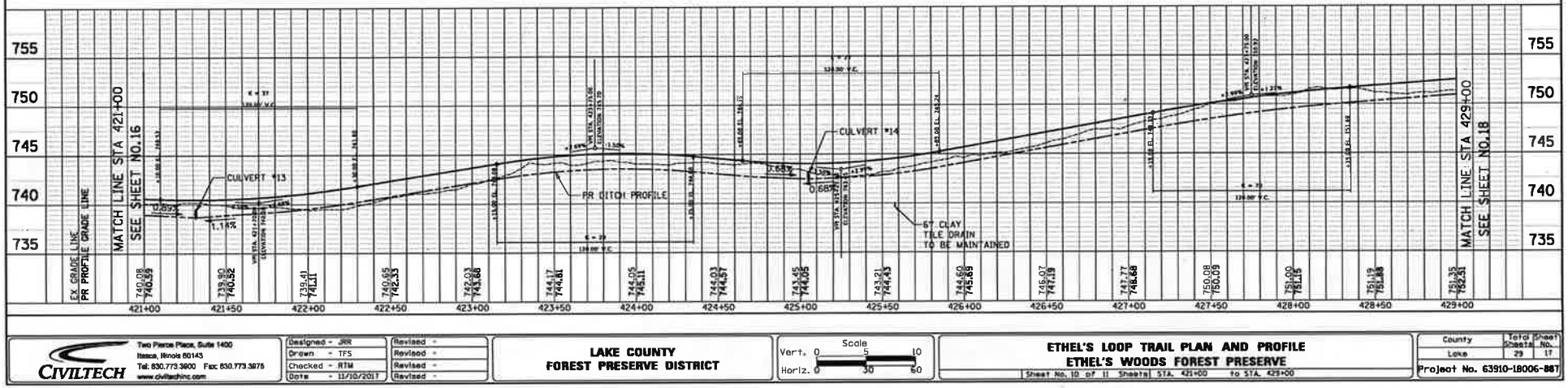
Scale
Vert. 0 5 10
Horiz. 0 30 60

ETHEL'S LOOP TRAIL PLAN AND PROFILE
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 9 of 11 Sheets STA. 414+00 to STA. 421+00

County	Total Sheets	Sheet No.
Lake	29	16

Project No. 63910-18006-887





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Drawn - TFS	Revised -	
Checked - RTM	Revised -	
Date - 11/10/2017	Revised -	

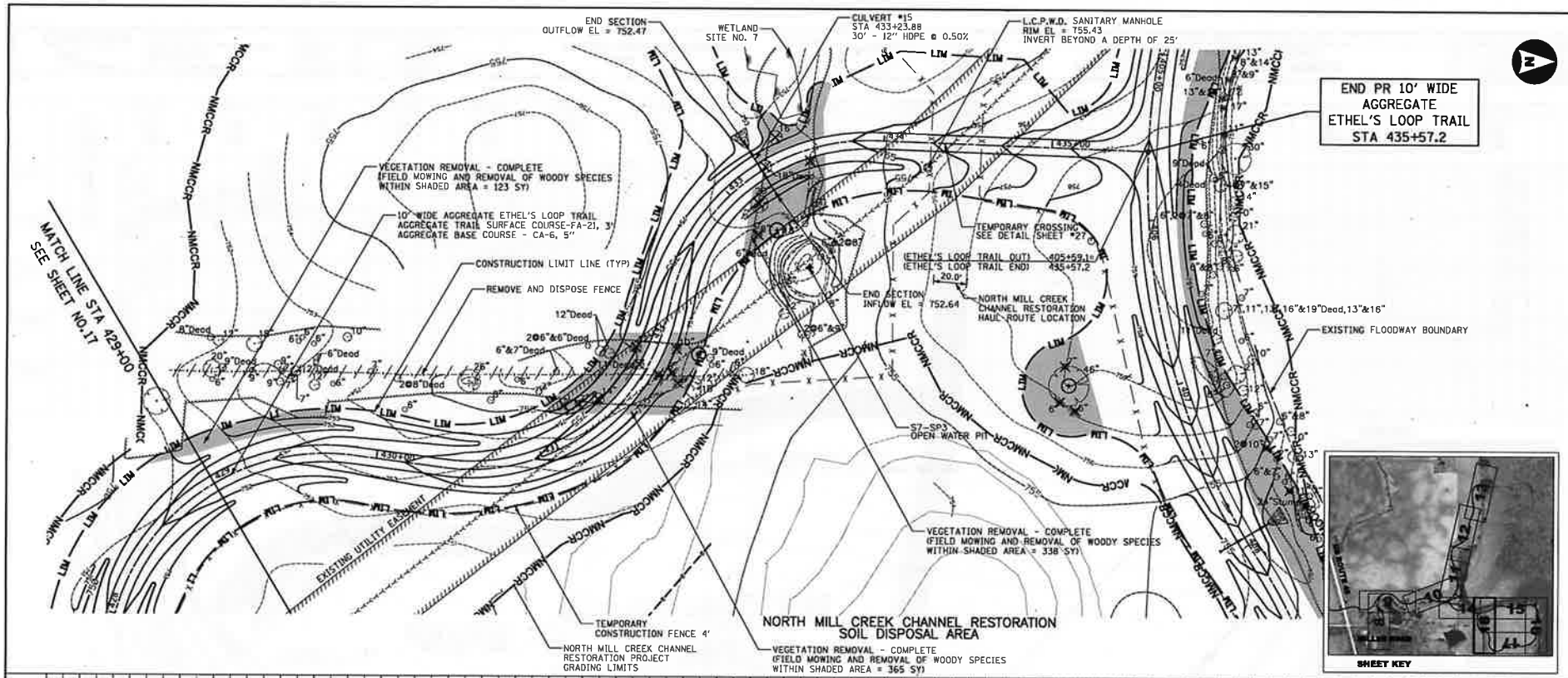
LAKE COUNTY
FOREST PRESERVE DISTRICT

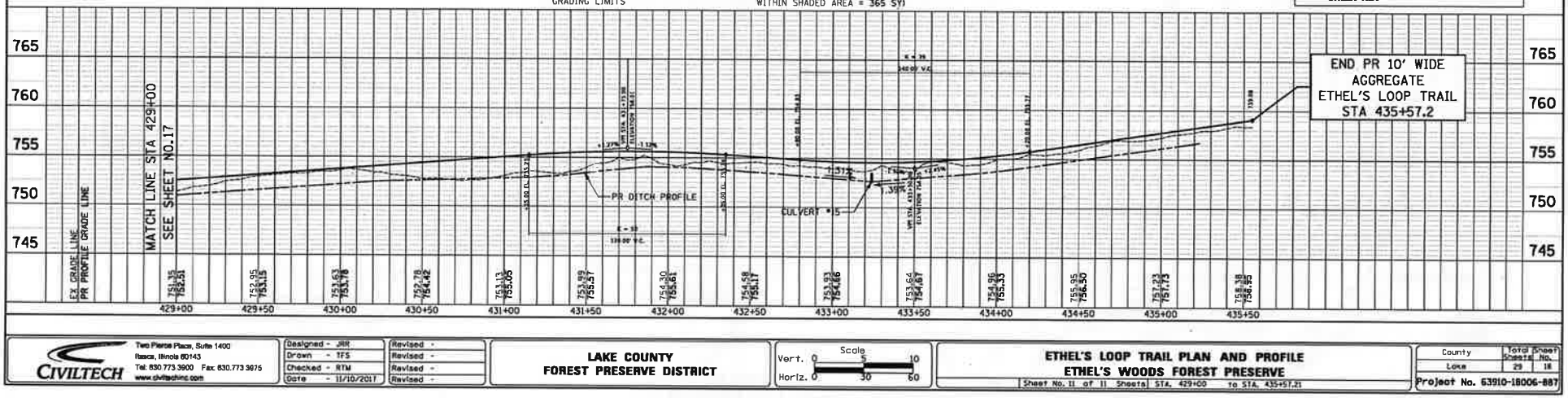
Scale
Vert. 0 5 10
Horiz. 0 30 60

ETHEL'S LOOP TRAIL PLAN AND PROFILE
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 10 of 11 Sheets| STA. 421+00 to STA. 429+00

County	Total Sheets	Sheet No.
Lake	29	17

Project No. 63910-18006-887





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LAKE COUNTY
FOREST PRESERVE DISTRICT

Scale
Vert. 0 5 10
Horiz. 0 30 60

ETHEL'S LOOP TRAIL PLAN AND PROFILE
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 11 of 11 Sheets STA. 429+00 to STA. 435+57.21

County	Total Sheet Sheets	No.
Lake	29	18

Project No. 63910-18006-887

EROSION CONTROL NOTES

THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THE FOLLOWING LAKE COUNTY STORMWATER MANAGEMENT COMMISION (LCSMC) SEDIMENTATION AND EROSION CONTROL NOTES:

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

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

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

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

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

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

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

H. SLOPES STEEPER THAN 3H:1V SHALL BE STABILIZED WITH APPROPRIATE MEASURES AS APPROVED BY THE ENFORCEMENT OFFICER. APPROPRIATE EROSION CONTROL BLANKET SHALL BE INSTALLED ON ALL INTERIOR DETENTION BASIN SIDE SLOPES BETWEEN THE NORMAL WATER LEVEL AND HIGH WATER LEVEL.

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

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

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

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

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

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

EROSION CONTROL NOTES

1. CONTRACTOR MUST EMPLOY A LAKE COUNTY STORMWATER MANAGEMENT COMMISSION (LCSMC) APPROVED DESIGNATED EROSION CONTROL INSPECTOR (DECI) FOR THIS PROJECT. THE CONTRACTOR'S DECI SHALL BE RESPONSIBLE FOR ALL SOIL EROSION AND SEDIMENT CONTROL INSPECTIONS, RECORD KEEPING, AND OTHER REQUIREMENTS INCLUDING MAINTENANCE OF THE PROJECT'S STORM WATER POLLUTION PREVENTION PLAN (SWPPP). IT IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR'S DECI TO UNDERSTAND AND COMPLY WITH ALL REGULATIONS. ANY SOIL EROSION AND SEDIMENT CONTROL RELATED FINES OR OTHER PENALTIES IMPOSED UPON OWNER AS A RESULT OF ACTIONS OR INACTIONS OF CONTRACTOR'S DECI SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. SOIL EROSION CONTROL MEASURES IN ACCORDANCE WITH THESE SPECIFICATIONS SHALL BE FOLLOWED AS DIRECTED BY THE OWNER OR LCSMC. ANY SOIL EROSION CONTROL MEASURES, IN ADDITION TO THOSE OUTLINED IN THESE PLANS AND WHICH ARE DEEMED NECESSARY BY THE OWNER AND/OR LCSMC, SHALL BE IMPLEMENTED IMMEDIATELY BY THE CONTRACTOR.
3. STREETS ADJACENT TO THE SITE SHALL BE KEPT FREE OF DIRT, MUD AND DEBRIS THROUGH THE USE OF RUBBERTIRE TRACTORS OR STREET SWEEPER.
4. ALL STORM SEWER, CULVERTS, CATCH BASINS, AND/OR DETENTION BASINS PROVIDED WITHIN THIS PROJECT ARE TO BE CLEANED AT THE END OF CONSTRUCTION OF THE PROJECT AND PRIOR TO FINAL ACCEPTANCE. CLEANING MAY ALSO BE REQUIRED DURING THE COURSE OF THE CONSTRUCTION OF THE PROJECT IF IT IS DETERMINED THAT THE SILT AND DEBRIS TRAPS ARE NOT PROPERLY FUNCTIONING AND THEIR PERFORMANCE IS IMPAIRED.
5. UNLESS SOIL EROSION CONTROL ITEMS ARE SPECIFICALLY REFERRED TO AS BID ITEMS (SUCH AS SILT FENCE, MISC. EROSION CONTROL, ETC.), THEY ARE TO BE CONSIDERED AS INCIDENTAL TO THE COST OF THE CONTRACT.
6. UPON COMPLETION OF TOPSOIL RESPREAD OPERATIONS, ALL DISTURBED AREAS SHALL BE SEEDED, SODDED, OR LANDSCAPED AS NOTED ON THE PLAN OR AS DIRECTED BY OWNER.
7. ALL DISTURBED GROUND WITHIN THE STATE, COUNTY AND VILLAGE RIGHT-OF-WAY SHALL BE RESTORED PER THE STANDARDS OF THE APPLICABLE AGENCY.
8. EACH RESPECTIVE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION, MAINTENANCE, AND ANY NECESSARY CORRECTIVE ACTION ASSOCIATED WITH THE EROSION CONTROL MEASURES SO DESIGNATED FOR THAT CONTRACTOR. THE ITEMS ARE TO BE PROVIDED BY THE DESIGNATED CONTRACTOR AT THE TIME AND IN THE SEQUENCE INDICATED WITHIN THE GENERAL CONSTRUCTION NOTES.

SOIL EROSION SEDIMENT CONTROL AND LANDSCAPING PLANS

DRAINAGE BASINS OF LAKE COUNTY

I. FOX RIVER WATERSHED
   1. Upper Fox River
   2. Sequoit Creek
   3. Fish Lake Drain
   4. Squaw Creek
   5. Lower Fox River
   6. Mutton Creek
   7. Slocum Lake Drain
   8. Tower Lake Drain
   9. Flint Creek

II. DES PLAINES RIVER WATERSHED
   10. North Mill Creek
   11. Mill Creek
   12. Newport Drainage Ditch
   13. Upper Des Plaines River
   14. Bull Creek
   15. Indian Creek
   16. Lower Des Plaines River
   17. Buffalo Creek
   18. Aptakisic Creek

III. LAKE MICHIGAN WATERSHED
   19. Kellogg Creek
   20. Dead River
   21. Waukegan River
   22. Pettibone Creek
   23. Bluff/Ravine

IV. CHICAGO RIVER WATERSHED
   24. Skokie River
   25. Middle Fork
   26. West Fork

LEGEND

- DITCH FLOW ARROW
- OVERLAND FLOW DIRECTION
- PERMEABLE PLASTIC DITCH CHECKS
- SF — SILT FILT
- FILTER SOCK
- EXISTING TREES
- TREE PROTECTION PAID FOR AS TEMPORARY CONSTRUCTION FENCE, 4' (LIMITS OF FENCE TO BE MARKED IN THE FIELD)
- PROPOSED CULVERT, HDPE, 12"
- STEEL FLARED END SECTION WITH GRADING
- STEEL FLARED END SECTION WITH GRADING AND RIPRAP
- LCFP LOW-MAINTENANCE TURF MIX TOPSOIL EXCAVATION AND PLACEMENT (4" MINIMUM) HYDROMULCH
- LCFP PARKLAND SEED MIX TOPSOIL EXCAVATION AND PLACEMENT (4" MINIMUM) HYDROMULCH
- LCFP BASIC PRAIRIE MIX TOPSOIL EXCAVATION AND PLACEMENT (4" MINIMUM) HYDROMULCH
- RIPRAP

NPDES STATEMENT:

THIS PROJECT DISTURBS 4.96 ACRES OF TOTAL LAND AREA. COMPLIANCE WITH THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER PERMIT IS ONLY NECESSARY IF A PROJECT DISTURBS 1.0 OR MORE ACRES OF TOTAL LAND AREA; AN NPDES STORMWATER PERMIT IS REQUIRED FOR THIS PROJECT.

LAKE COUNTY STORMWATER MANAGEMENT COMMISSION TYPICAL CONSTRUCTION SEQUENCE

1. INSTALLATION OF SOIL EROSION AND SEDIMENT CONTROL SE/SC MEASURES
   - A.) SELECTIVE VEGETATION REMOVAL FOR SILT FENCE INSTALLATION
   - B.) SILT FENCE INSTALLATION
   - C.) CONSTRUCTION FENCING AROUND AREAS NOT TO BE DISTURBED
   - D.) STABILIZED CONSTRUCTION ENTRANCE
2. TREE REMOVAL WHERE NECESSARY (CLEAR &GRUB)
3. CONSTRUCT SEDIMENT TRAPPING DEVICES (SEDIMENT TRAPS, BASINS...)
4. CONSTRUCT DETENTION FACILITIES AND OUTLET CONTROL STRUCTURE WITH RESTRICTOR & TEMPORARY PERFORATED RISER
5. STRIP TOPSOIL, STOCKPILE TOPSOIL AND GRADE SITE
6. TEMPORARILY STABILIZE TOPSOIL STOCKPILES (SEED AND SILT FENCE AROUND TOE OF SLOPE)
7. INSTALL STORM SEWER, SANITARY SEWER, WATER AND ASSOCIATED INLET & OUTLET PROTECTION
8. PERMANENTLY STABILIZE DETENTION BASINS WITH SEED AND EROSION CONTROL BLANKET
9. TEMPORARILY STABILIZE ALL AREAS INCLUDING LOTS THAT HAVE REACHED TEMPORARY GRADE
10. INSTALL ROADWAYS
11. PERMANENTLY STABILIZE ALL OUTLOT AREAS
12. INSTALL STRUCTURES AND GRADE INDIVIDUAL LOTS
13. PERMANENTLY STABILIZE LOTS
14. REMOVE ALL TEMPORARY SE/SC MEASURES AFTER THE SITE IS STABILIZED WITH VEGETATION

* SOIL EROSION AND SEDIMENT CONTROL MAINTENANCE MUST OCCUR EVERY TWO WEEKS AND AFTER EVERY ½ " OR GREATER RAINFALL EVENT

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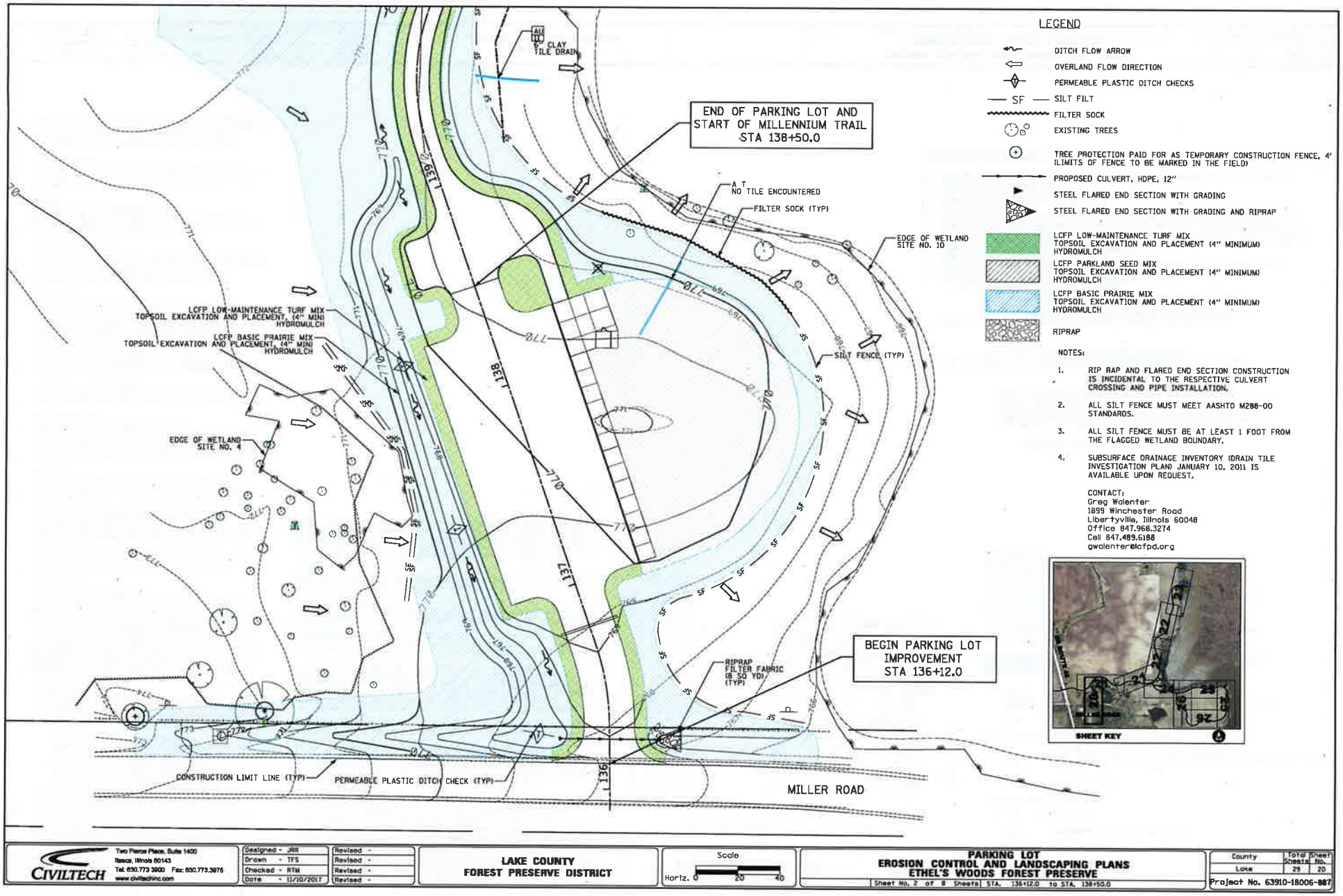
Checked - RTM	Revised -	
Date - 11/10/2017	Revised -	

LAKE COUNTY FOREST PRESERVE DISTRICT

EROSION CONTROL AND LANDSCAPING NOTES
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 1 of 8 Sheets

County	Total Sheets	Sheet No.
Lake	29	19

Project No. 63910-18006-8RT



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Date - 11/10/2017	Revised -	

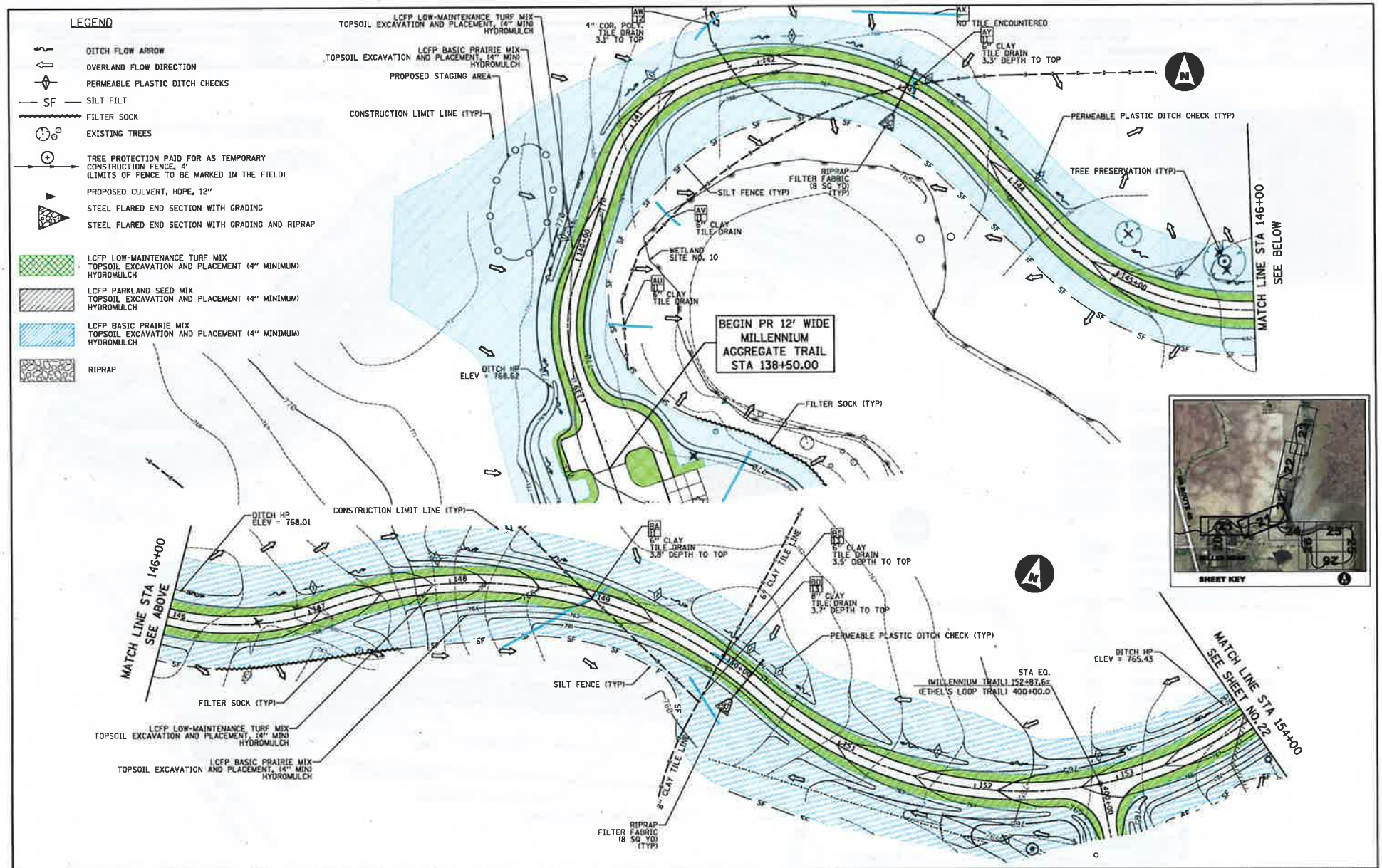
LAKE COUNTY FOREST PRESERVE DISTRICT

Scale
Horiz. 0 20 40

PARKING LOT
EROSION CONTROL AND LANDSCAPING PLANS
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 2 of 8 Sheets | STA. 136+12.0 to STA. 138+50.0

County	Total Sheets	Sheet No.
Lake	29	20

Project No. 63910-18006-887



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Date - 11/10/2017	Revised -	

LAKE COUNTY FOREST PRESERVE DISTRICT

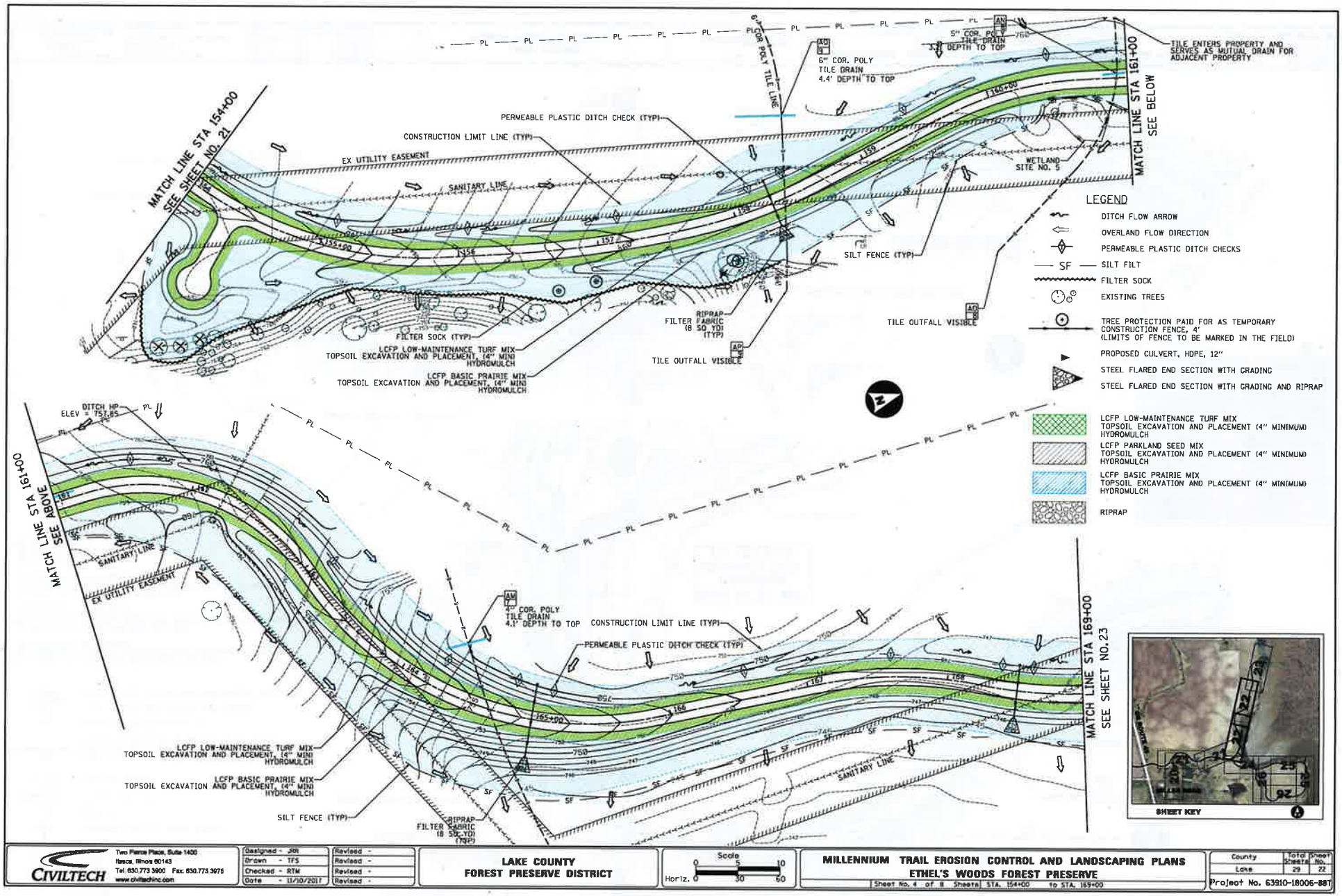
Scale
Horiz. 0 30 60

MILLENNIUM TRAIL EROSION CONTROL AND LANDSCAPING PLANS
ETHEL'S WOODS FOREST PRESERVE

Sheet No. 3 of 8 Sheets STA. 138+50 to STA. 154+00

County	Total Sheets	Sheet No.
Lake	29	21

Project No. 63910-18006-887



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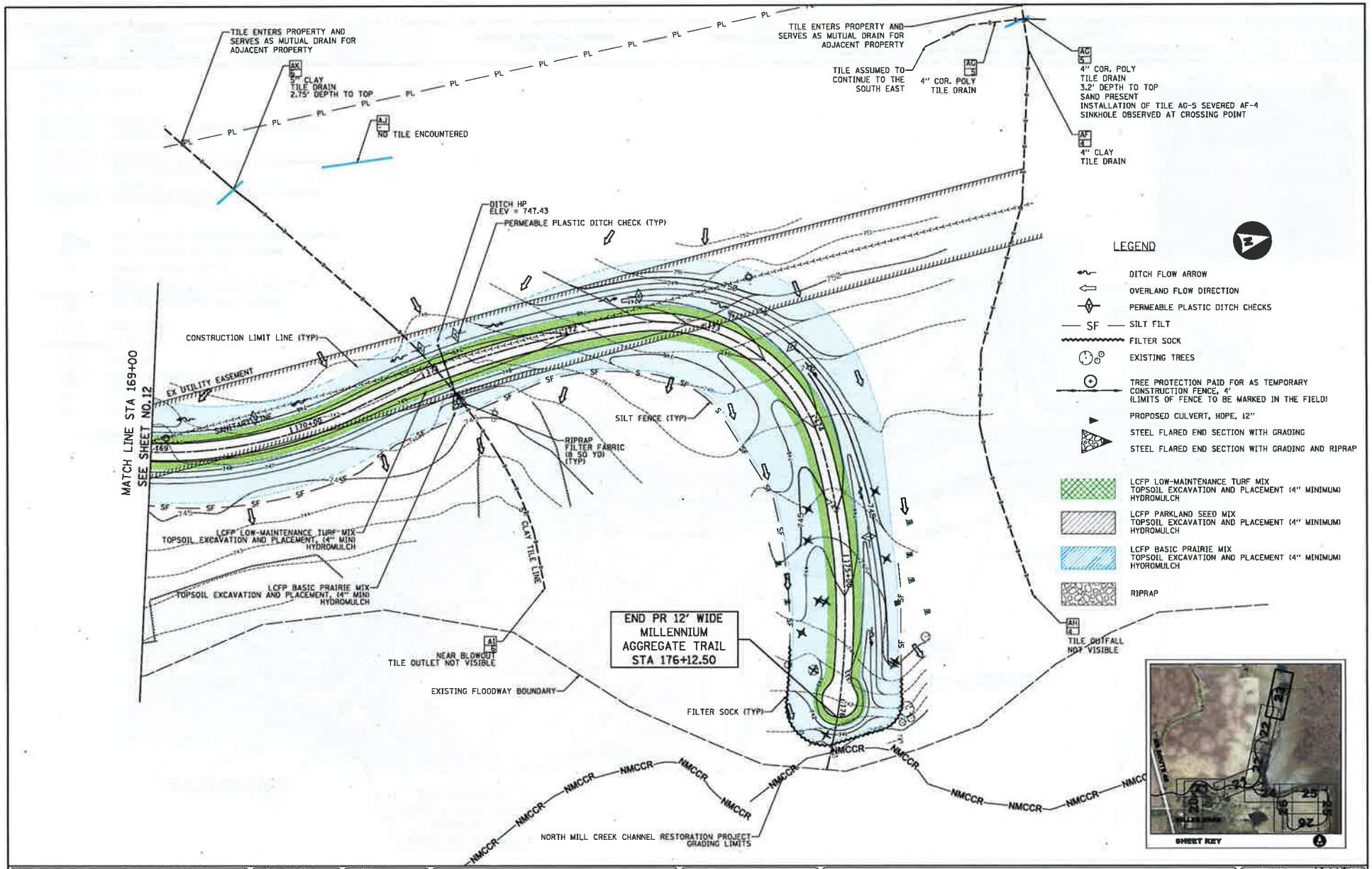
LAKE COUNTY FOREST PRESERVE DISTRICT

Scale
Horiz. 0 5 10 30 60

MILLENNIUM TRAIL EROSION CONTROL AND LANDSCAPING PLANS
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 4 of 8 Sheets STA. 154+00 to STA. 169+00

County	Total Sheets	Sheet No.
Lake	29	22

Project No. 63910-18006-88T



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LAKE COUNTY FOREST PRESERVE DISTRICT

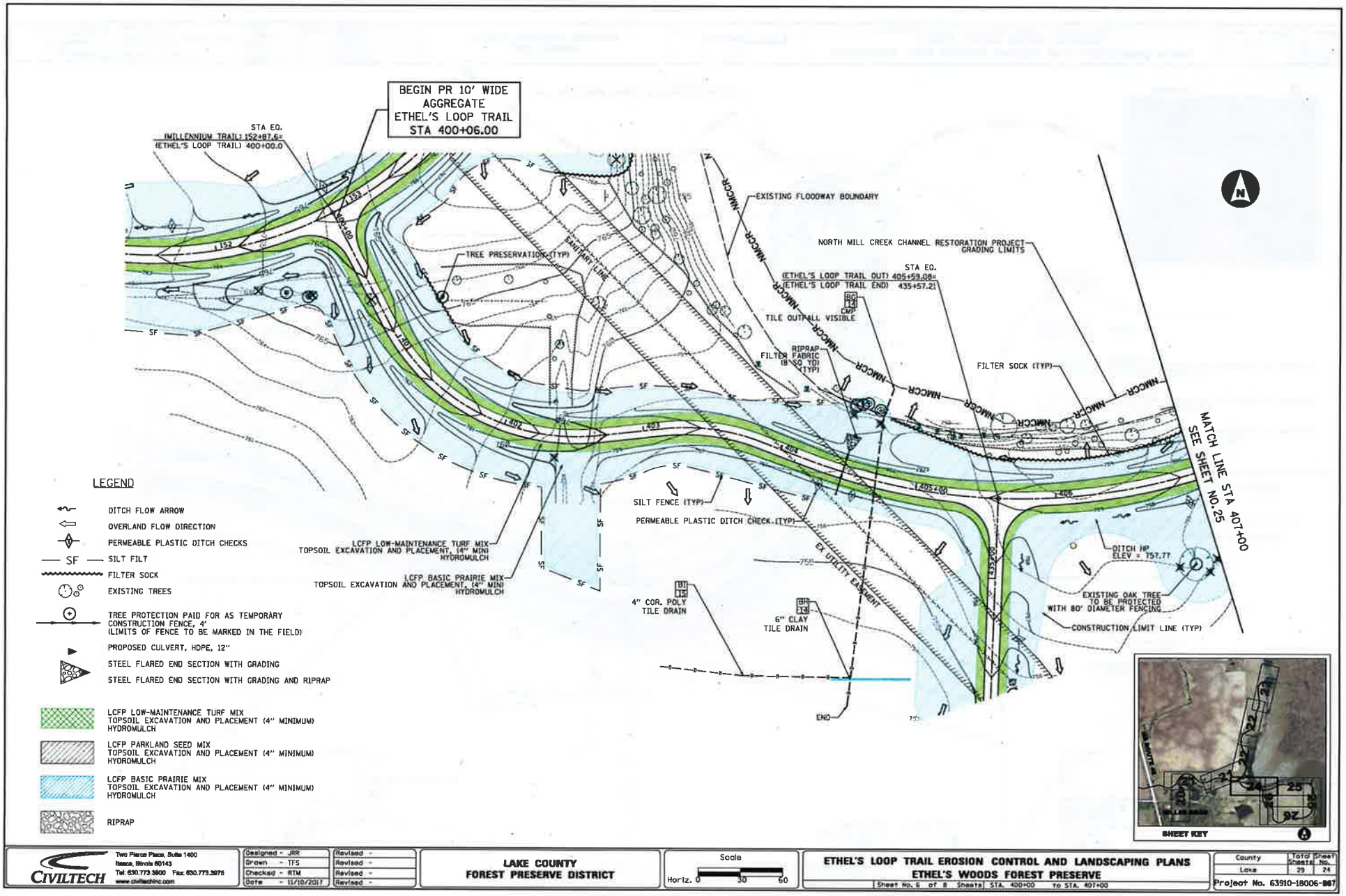
Scale
Horiz. 0 30 60

MILLENNIUM TRAIL EROSION CONTROL AND LANDSCAPING PLANS
ETHEL'S WOODS FOREST PRESERVE

Sheet No. 5 of 8 Sheets STA. 169+00 to STA. 176+15.50

County	Total Sheets	Sheet No.
Lake	29	23

Project No. 63910-18006-RBT



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Date - 11/10/2017	Revised -	

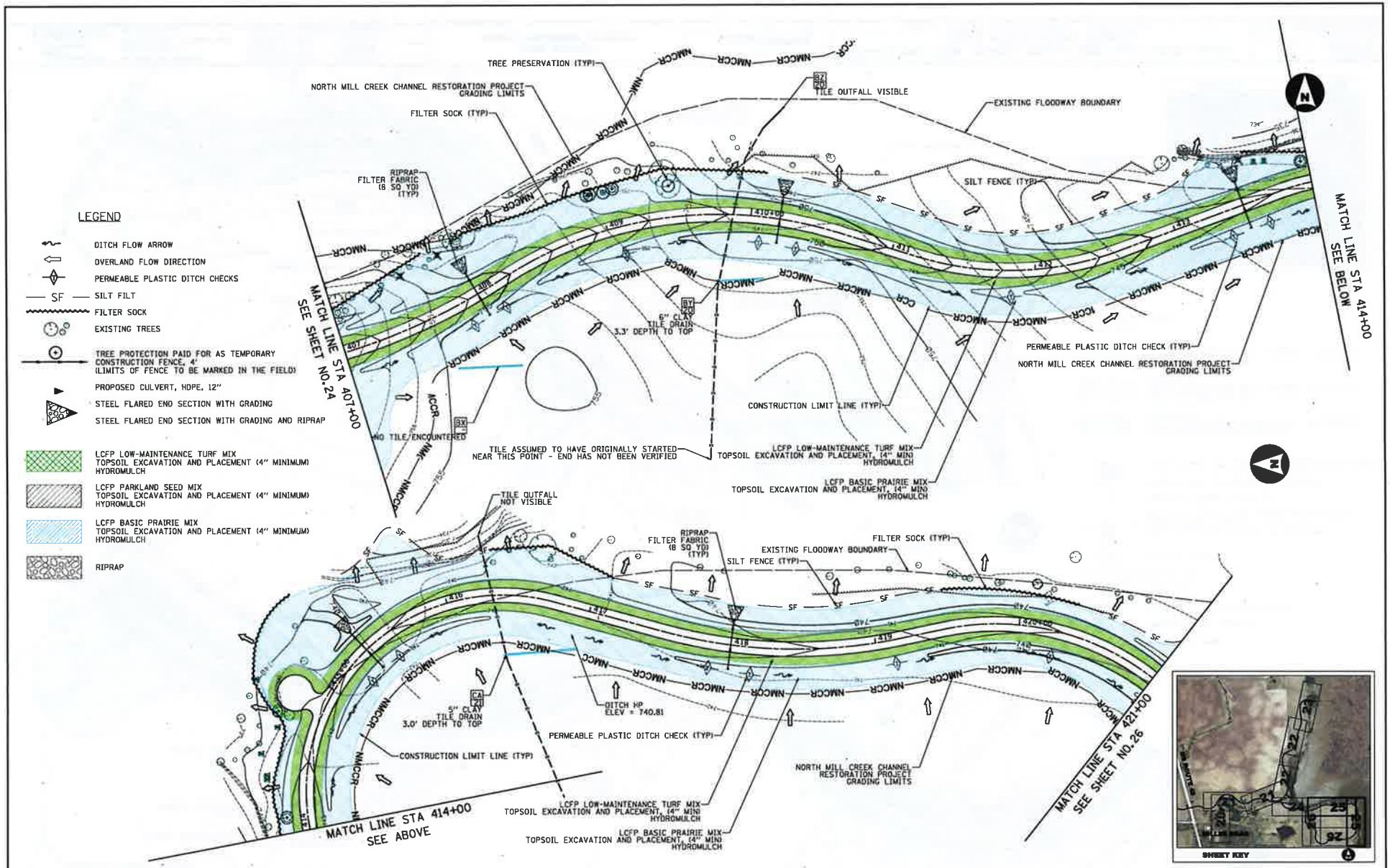
LAKE COUNTY FOREST PRESERVE DISTRICT

Scale
Horiz. 0 30 60

ETHEL'S LOOP TRAIL EROSION CONTROL AND LANDSCAPING PLANS
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 6 of 8 Sheets STA. 400+00 to STA. 407+00

County	Total Sheets	Sheet No.
Lake	29	24

Project No. 63910-18006-867



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LAKE COUNTY
FOREST PRESERVE DISTRICT

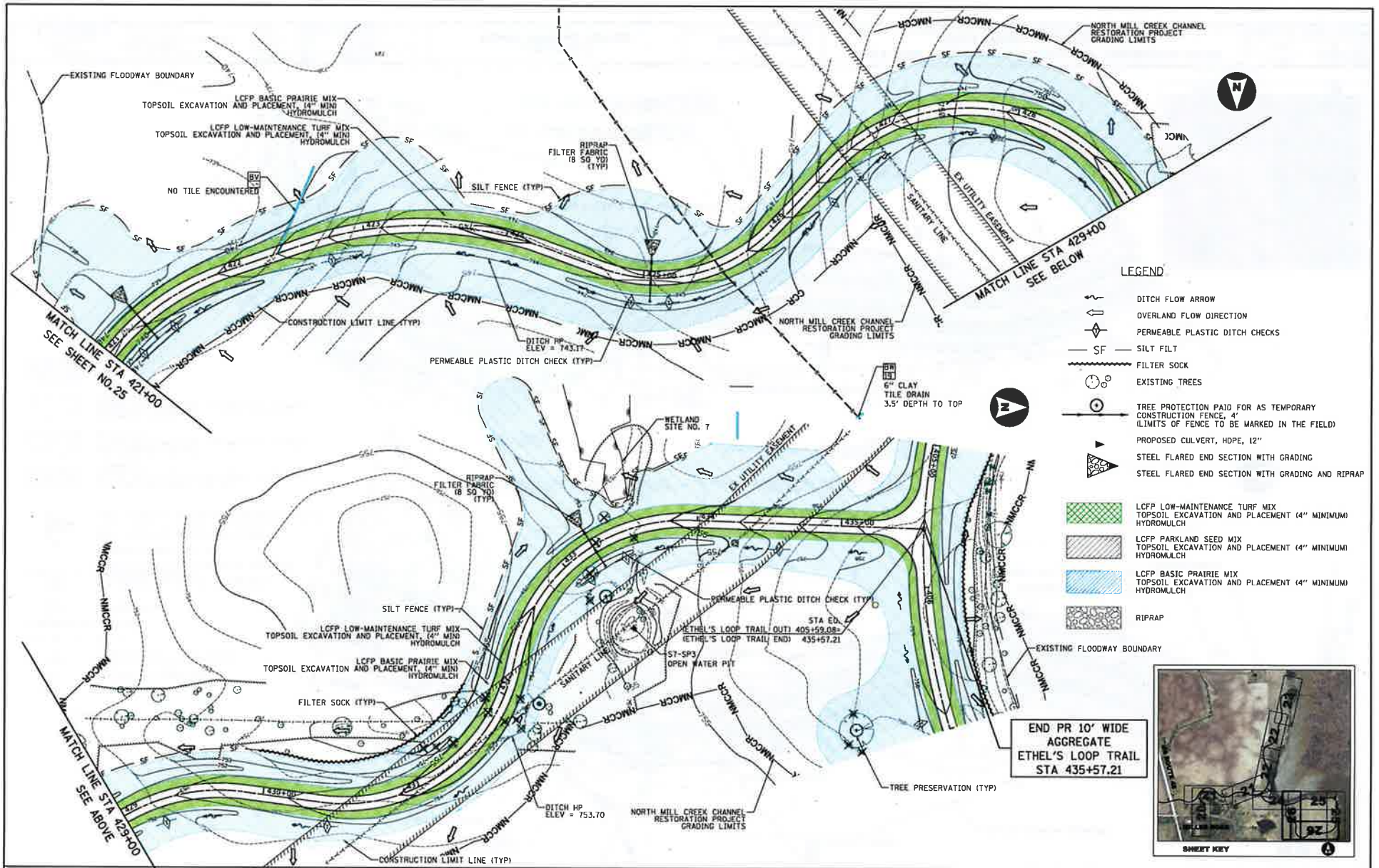
Scale
Horiz. 0 30 60

ETHEL'S LOOP TRAIL EROSION CONTROL AND LANDSCAPING PLANS
ETHEL'S WOODS FOREST PRESERVE

Sheet No. 7 of 8 Sheets STA. 407+00 to STA. 421+00

County	Total Sheets	Sheet No.
Lake	29	25

Project No. 63910-18006-887



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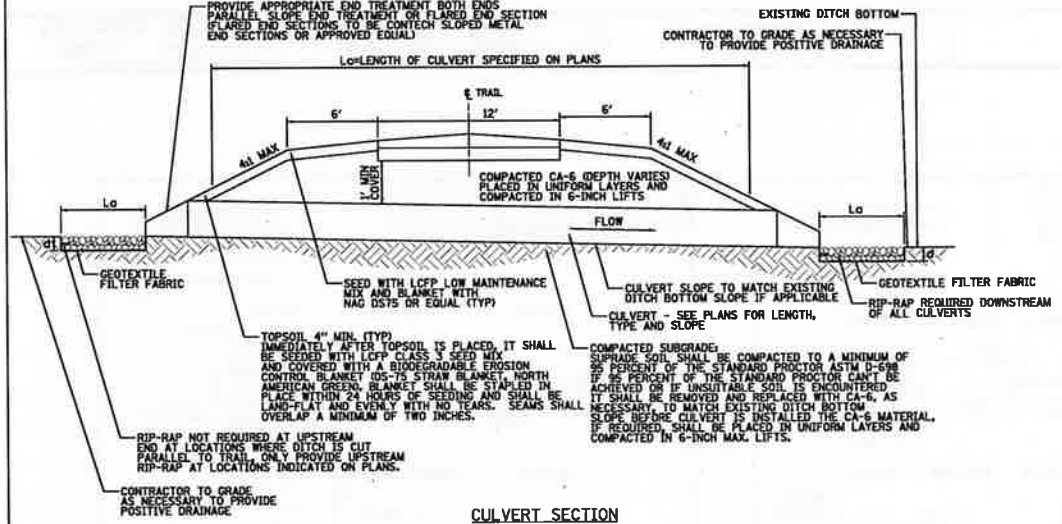
LAKE COUNTY
FOREST PRESERVE DISTRICT

Scale
Horiz. 0 30 60

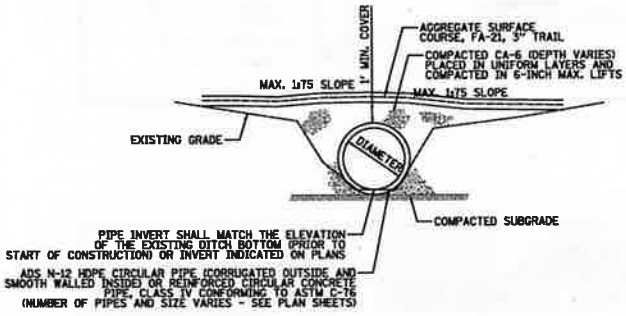
ETHEL'S LOOP TRAIL EROSION CONTROL AND LANDSCAPING PLANS
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 8 of 8 Sheets STA. 421+00 to STA. 435+57.21

County	Total Sheets	Sheet No.
Lake	29	26

Project No. 63910-18006-887



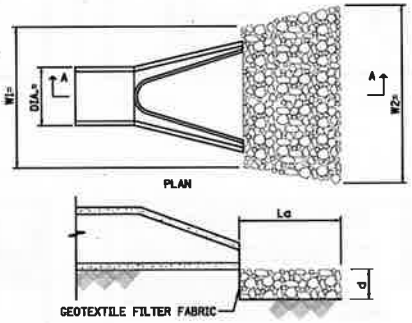
CULVERT SECTION



CIRCULAR HDPE OR RCP CULVERT CROSSING

NOTES

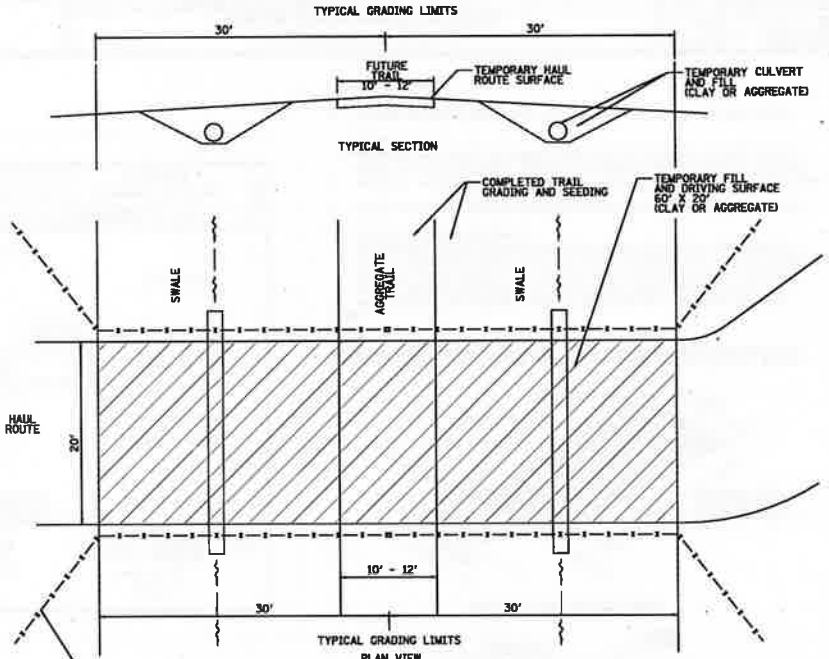
1. CULVERTS TO BE INSTALLED TO MATCH EXISTING DITCH BOTTOM SLOPE, MINIMUM 0.5% SLOPE OR SLOPE AND INVERTS INDICATED ON PLAN SHEET.
2. HDPE CULVERTS SHALL BE INSTALLED AS SPECIFIED BY THE MANUFACTURER WITH APPROPRIATE FLARED END SECTION SECURELY ANCHORED IN-PLACE WITH PE THREADED ROD WITH WING NUTS FOR END SECTIONS 12"-24" AND WELDED TO PIPE FOR END SECTION LARGER THAN 24" PER MANUFACTURER'S SPECIFICATIONS.
3. JOINTS FOR HDPE PIPE SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
4. JOINTS FOR CONCRETE PIPE SHALL TYPICALLY BE A TROWEL APPLIED BITUMINOUS MASTIC COMPOUND IN ACCORDANCE WITH ASTM C-76.
5. RIP-RAP SHALL BE INSTALLED AT ALL CULVERT LOCATIONS PER RIP-RAP AT FLARED END END SECTION DETAIL.
6. CONTRACTOR TO PROVIDE PROPER DITCH TRANSITIONS PER PLAN.
7. ALL DISTURBED DITCH BOTTOMS AND SIDE SLOPES SHALL BE COMPACTED TO A MINIMUM 95% OF STANDARD PROCTOR.
8. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND PROVIDE DATA FOR ALL REQUIRED CULVERT CROSSING CONSTRUCTION ITEMS PRIOR TO START OF CONSTRUCTION.



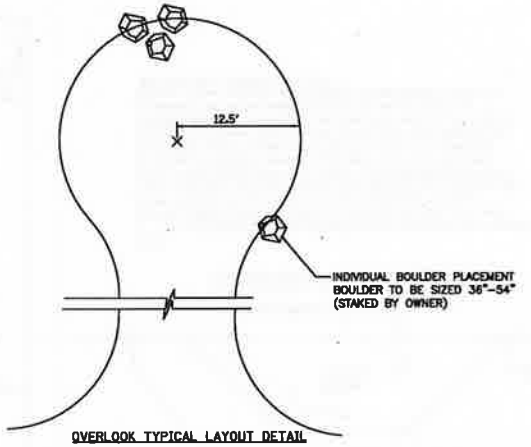
DIA. (inches)	La (ft)	W1 (inches)	W2 (ft)	RIP-RAP SIZE	d (inches)	VOLUME (cy)
12	18	36	11	4"-8"	12	2.6
15	12	48	13.2	4"-8"	12	3.6
18	14	54	15.8	4"-8"	12	4.2

NOTES:
1. ABOVE TABLE FOR PIPE OUTLET TO FLAT AREA WITH NO WELL DEFINED EXISTING OR PROPOSED CHANNEL OR DITCH.
2. FOR PIPE OUTLET TO AREAS WITH EXISTING OR PROPOSED WELL DEFINED CHANNEL OR DITCH THE RIP-RAP SHALL EXTEND ACROSS THE DITCH BOTTOM AND UP THE DITCH SIDE SLOPES TO TOP OF CULVERT ELEVATION FOR LENGTH, Lo SHOWN IN TABLE ABOVE.
3. THE FILTER FABRIC SHALL MEET THE REQUIREMENTS IN MATERIAL SPECIFICATIONS 592 GEOTEXTILE TABLE 1 OR 2, CLASS 1, II, III.
4. RIPRAP SHALL BE IN ACCORDANCE WITH ARTICLE 281.04A OF THE STANDARD SPECIFICATIONS FOR STONE RIPRAP WITH THE FOLLOWING EXCEPTIONS. THE RIPRAP SHALL BE FOUR (4) TO EIGHT (8) INCHES IN DIAMETER MINIMUM FIELD STONE COBBLES. LIMESTONE RIPRAP IS NOT ACCEPTABLE. SAMPLES OF SPECIFIED MATERIAL SHALL BE SUBMITTED FOR APPROVAL TO THE OWNER PRIOR TO DELIVERY AND PLACEMENT. THE FURNISHED MATERIAL SHALL BE FROM THELEN SAND AND GRAVEL - ANTIOCH QUARRY (847-395-3315) OR APPROVED EQUAL.

RIP-RAP AT FLARED END SECTION



TEMPORARY CROSSING



OVERLOOK TYPICAL LAYOUT DETAIL

CIVILTECH
Two Pierce Place, Suite 1400
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Tel: 630.773.3900 Fax: 630.773.3975
www.civiltechinc.com

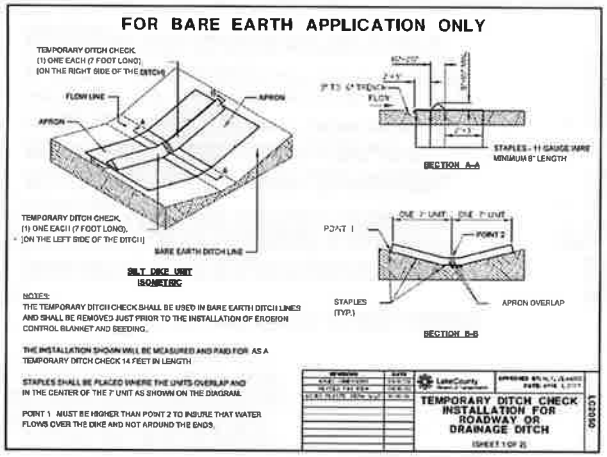
Designed - JRR	Revised -
Drawn - TFS	Revised -
Checked - RTM	Revised -
Date - 11/10/2017	Revised -

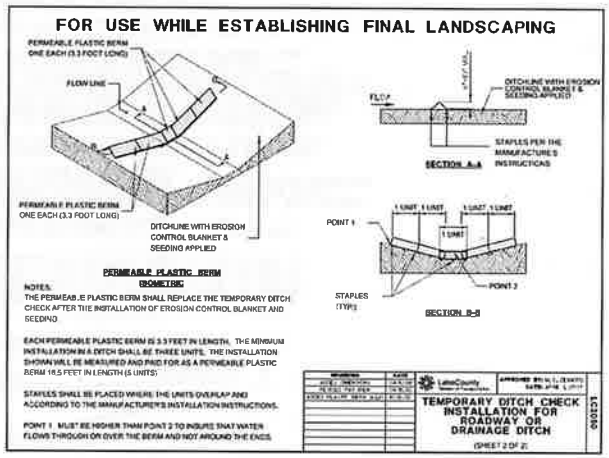
LAKE COUNTY
FOREST PRESERVE DISTRICT

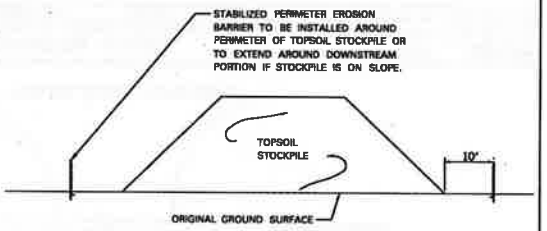
CONSTRUCTION DETAILS
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 1 of 3 Sheets| STA. To STA.

County	Total Sheets	Sheet No.
Lake	29	27

Project No. 63910-18006-88T



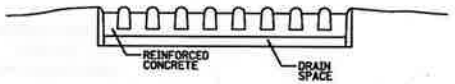




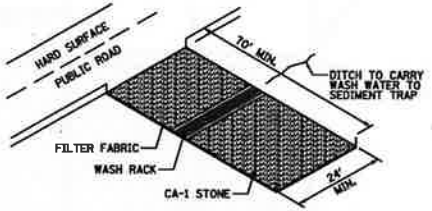
TEMPORARY TOPSOIL STOCKPILE

NOTE:

1. The CONTRACTOR shall construct stockpiles and embankments to accommodate earthwork staging in such a way that in the permanent condition organic soils shall be placed on the top of soils unsuitable for landscaping. This may require material from the deepest section of the excavation to be placed on the bottom of the proposed embankment location. Critical depth separations shall be as follows: Topsoil (4-inch minimum depth), intermediate layer, base layer. If Hydric "Blue" clays are encountered during the excavation, this material shall be placed at a minimum of 6 feet below finished grade where attainable. The RESIDENT ENGINEER shall make the sole determination regarding the suitability of material for each of the layers. Multiple stockpiles may be required to conform to these requirements. All stockpiling shall be included in the cost of 'SITE GRADING – COMPLETE PER PLAN'.



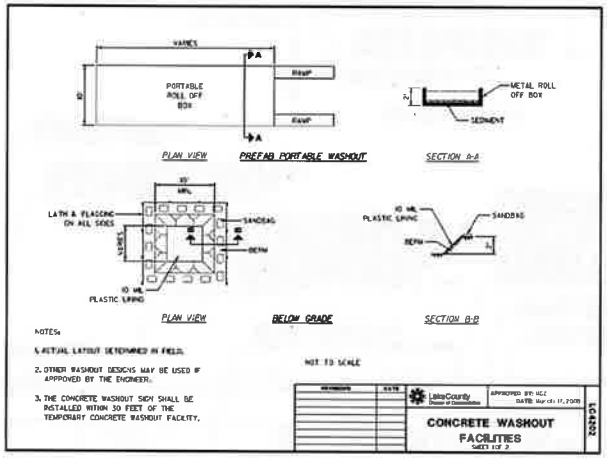
DETAIL OF WASH RACK

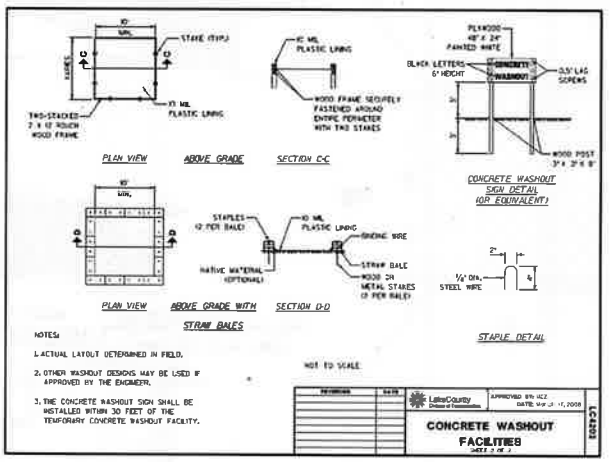


STABILIZED CONSTRUCTION ENTRANCE WITH WASH RACK

NOTES:

1. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT INTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED INTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
2. FILTER CLOTH – WILL BE PLACE OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
3. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE INTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT-TRAPPING DEVICE.
4. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.





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Drawn - TFS	Revised -	
Checked - RTW	Revised -	
Date - 11/10/2017	Revised -	

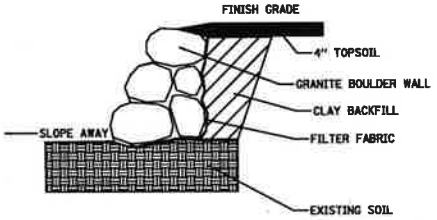
LAKE COUNTY FOREST PRESERVE DISTRICT

CONSTRUCTION DETAILS
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 2 of 3 Sheets STA. to STA.

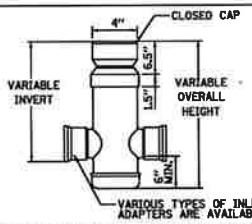
County	Total Sheet	No.
Lake	29	29

Project No. 63910-18006-887

TYPICAL BATTER RANGE:	BOULDER RETAINING WALL SIZE RANGES REQUIRED:
1.5-2.0 / 1.0	18"-24" = 25% 12"-18" = 60% 6"-12" = 18%

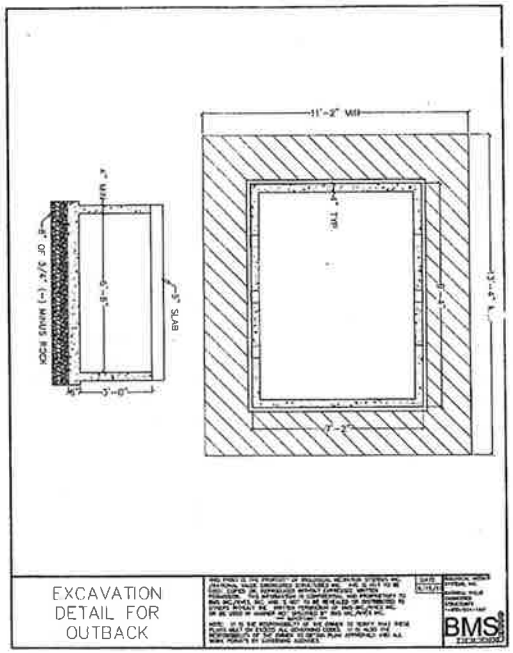


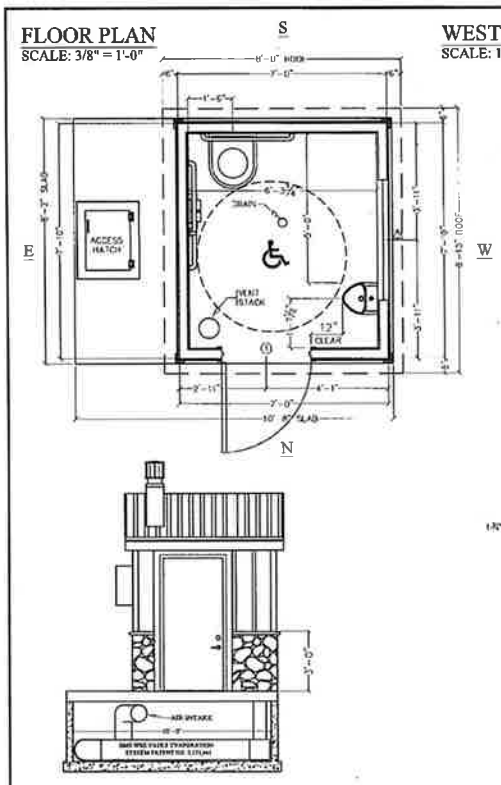
BOULDER RETAINING WALL
TO BE LOCATED IN FIELD BY OWNER AS NEEDED

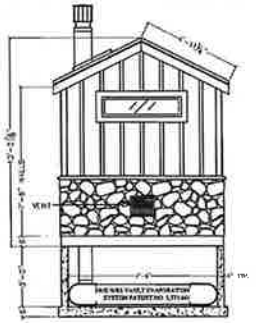


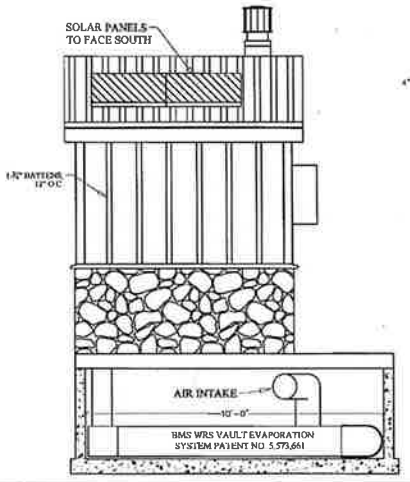
FIELD TILE OBSERVATION STRUCTURE DETAIL
(PAID FOR AS "DRAIN TILES, 4" PVC")

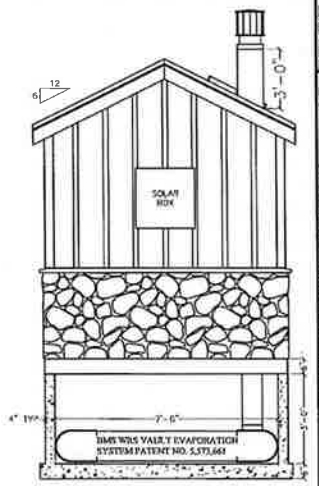
NOTES:
1. STRUCTURE TYPE TO BE APPROVED BY OWNER PRIOR TO INSTALLATION.
2. DIMENSIONS ARE FOR REFERENCE ONLY. ACTUAL DIMENSIONS MAY VARY.











ETHEL'S WOODS FOREST PRESERVE
BMS: OUTBACK
WITH URINAL, ROCK & DC POWER

CIVILTECH
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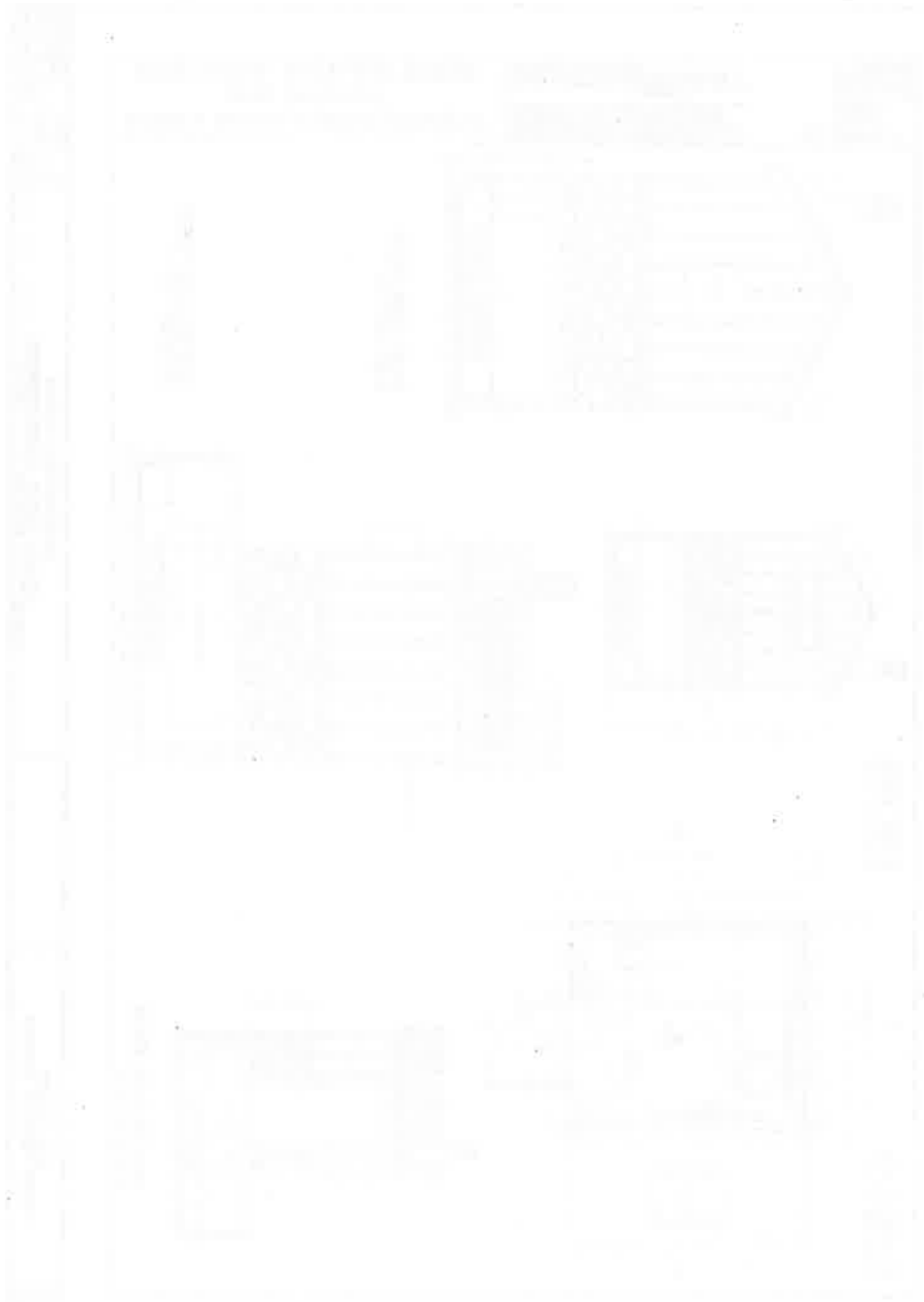
Designed - JBR	Revised -	
Drawn - TPS	Revised -	
Checked - RTM	Revised -	
Date - 11/10/2017	Revised -	

LAKE COUNTY
FOREST PRESERVE DISTRICT

CONSTRUCTION DETAILS
ETHEL'S WOODS FOREST PRESERVE
Sheet No. 3 of 3 Sheets STA. to STA.

County	Total Sheets	Sheet No.
Lake	29	29

Project No. 63910-18006-887



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ATTACHMENT D
SPECIAL PROJECT REQUIREMENTS

1. This project shall be constructed concurrently with another separate project known as the "North Mill Creek Channel Restoration" (NMCCR). The NMCCR includes the final draining of the former Rasmussen Lake, restoration of the Mill Creek channel and excavation and deposition of soil materials from the former lake bottom. The Channel Restoration Contractor (for the NMCCR) and the Public Access Contractor (this project) shall share common areas of the site in pursuit of their respective contracts. It is imperative that the Public Access Contractor cooperate and coordinate with the other contractors and plan the work to minimize potential conflicts both in work logistics and cost factors.
2. The two projects will share a single site entry at US Route 45 just north of Miller Road, where an existing stabilized construction entry is located. The Public Access Contractor shall construct an extension to the existing entry directly to the south for their exclusive use. This stabilized construction extension shall be transitioned to a haul route which shall be used to access a staging area near the proposed parking lot.
3. The Channel Restoration Contractor will utilize and is solely responsible for the existing and modified haul routes as shown on the plans, including their restoration after project completion. The haul routes for NMCCR will cross the proposed trail at multiple locations. Refer to the plans for these locations and the temporary crossings required.
4. The Public Access Contractor shall minimize their use of these existing haul routes to perform the work. The primary access for this contract shall be the parking lot and trail construction limits as shown on the plans.
5. The proposed NMCCR includes the excavation, hauling, deposition and grading of soils from the former Rasmussen Lake bed. These fill areas will create new landforms which abut the proposed trail loop at the eastern limits of this project. Refer to the plans for more information. Although the exact construction schedule for NMCCR is unknown at this time, it is expected that the NMCCR filling will occur after the start of this contract. It is highly desirable to complete the Public Access earthwork and grading which is adjacent to the NMCCR fill areas before the NMCCR filling and grading occurs in order to manage new drainage patterns. Therefore, the Contractor shall be required to perform the work in the following sequence:

    A. Perform all tasks typical of site improvements projects, including mobilization, layout, site access improvements, vegetation removal and soil erosion and sediment control measures.
    B. Perform earthwork tasks at the Ethel's Loop Trail (Sta. 400+06 to Sta. 435.52.2), including topsoil stripping and stockpiling, culvert crossing installation, ditching, trail grading and temporary crossings.
    C. Respread topsoil to within 2' of the proposed edge of trail and finish grade to proposed elevations to the construction limits.
    D. Perform seeding, erosion control blanket and hydromulch as per the plans for the entire Ethel's Loop Trail.
    E. Resume work on the other areas of the project.

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ATTACHMENT E
GEOTECHNICAL EXPLORATION AND ANALYSIS

MSET

WWW.MSETINC.COM

MIDLAND STANDARD ENGINEERING & TESTING, INC.

558 Plate Drive, Unit 6 East Dundee, Illinois 60118

(847) 844-1895 f(847) 844-3875

September 14, 2017

Mr. Reid T. Magner, P.E.
Civiltech Engineering, Inc.
Two Pierce Place, Suite 1400
Itasca, Illinois 60143

Re: Geotechnical Exploration and Analysis
Ethel Woods– Millennium Trail Extension
Lake County, Illinois
MSET Project No. 17386

Dear Mr. Magner:

We have completed the field exploration work and analysis of the subgrade conditions for the referenced project. This report was prepared for use in the preparation of the project design plans.

Purpose

The purpose of this exploration was to determine the subgrade conditions a proposed bike path extension. Using this information along with the project data provided, design criteria and recommendations have been prepared for use by the Design Engineers in preparing the plans and specifications.

Scope

The scope of this exploration and analysis included review of the available information from previous work conducted in the area; field and laboratory testing; analysis of the data obtained; formulation of our recommendations and preparation of this report. The field exploration included making twenty-seven (27) soil borings to depths of five (5) to ten (10) feet.

PROJECT LOCATION AND DESCRIPTION

Project Location and Description

The trail alignment proposed for design is located in a forest preserve area on the east side of US Route 45, North of Grass Lake Road in Lake County, Illinois. Within this area, roughly 4100 lineal feet of trail is planned, with an east-west leg off of Route 45, continuing with a north-south leg, and a loop section to the southeast. The majority of the trail runs along the west side of a creek/reservoir alignment (Elmwood Farms Lake). A parking lot is also planned at the south end with access off of West Miller Road.

FIELD EXPLORATION

General

The procedures for this exploration were conducted in accordance with the appropriate Illinois Department of Transportation Standards. The borings were supervised by a field engineer from Midland Standard Engineering & Testing, Inc. The soil specimens were transported to our laboratory for testing and analysis. Our project engineer has directed all phases of this investigation.

Drilling Equipment

The soil boring was drilled using a track mounted geoprobe 7822-drill rig equipped with a rotary head. Hollow stem augers were used to advance the boreholes.

Sampling and Standard Penetration Test Procedures

Representative samples were obtained by the use of split-spoon sampling procedures in accordance with ASTM Procedure D-1586.

During the split-spoon sampling procedures, a standard penetration test was performed in accordance with current ASTM D-1586 Procedures. At sampling intervals, advancement of the boring was stopped and all loose material removed from the borehole. The sampler was than lowered into the borehole and seated in undisturbed soil by pushing or tapping, taking suitable precautions that the rods were reasonably tight. The sampling spoon was then driven using an automatic drop hammer. During the sampling procedure, the standard penetration value (N) of the soil was determined. The standard penetration value (N) is defined as the number of blows of a one hundred-forty pound (140 lb) hammer required to advance the spoon sampler one foot (12") into the soil.

The results of the standard penetration tests indicated the relative density and comparative consistency of the soils and thereby provide a basis for estimating the relative strength and compressibility of the soil profile components. The results of standard penetration tests can be found on the attached boring logs.

Strength Tests

A calibrated hand penetrometer was used to aid in determining the strength and consistency of cohesive soil samples (Qp) in the field. Split spoon samples were subjected to unconfined compressive strength testing (Qu) by the RIMAC Method as modified by IDOT. Consideration must be given to the manner in which the values of the unconfined compressive strength were obtained. Split-spoon sampling techniques provide a representative, but somewhat disturbed soil sample.

Water Level Measurements

Water level observations were made during and immediately after the boring operations and are noted on the attached boring logs. In relatively pervious, sandy soils, the water level elevations would be considered reliable. In relatively impervious, clayey 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.

LABORATORY TESTING

Scope

A supplemental laboratory-testing program was conducted to ascertain additional pertinent engineering characteristics of the foundation materials necessary in analyzing the behavior of the proposed construction. The soils laboratory work was performed in accordance with applicable ASTM standards.

The laboratory-testing program included supplementary visual classification, unconfined compressive strength on cohesive samples, and moisture contents on all samples. The results of laboratory testing are reported on the boring logs that are attached.

SUBSURFACE CONDITIONS

Subgrade Soil Conditions

The shallow depth soil conditions along the proposed alignment were comprised of 4 inches to 18 inches of black Silty CLAY to CLAY TOPSOIL over lying stiff to hard Silty CLAY, and occasionally CLAY and Sandy CLAY natural deposits. Test samples just below the Topsoil ranged from moisture content, Mc of 15 to 29 percent and unconfined compressive strengths, Qu of 1.13 to 6.71 tons per square foot. At B-19, a silty deposit recorded a Mc=26 percent and Qu = 0.62 tsf. At boring B-27, located close to Miller Road for the parking lot, Topsoil FILL and clay FILL were present to a depth of 3 feet..

Details of the soil conditions at each boring location are presented on the attached boring logs.

Groundwater Conditions

Groundwater measurements were made during and immediately after drilling operations were completed. All five-foot deep borings were dry during the field measurements. Boring B-27, made to a depth of ten feet for the parking lot encountered ground water at 7.1 to 9 feet below the surface. Details of the groundwater measurements at each boring location are presented on the attached boring logs.

PEDESTRIAN TRAIL RECOMMENDATIONS

Pavement Design Criteria

Soils encountered as the predominant subgrade materials consisted of very stiff to hard, low plasticity Silty CLAY, however in localized low ground clay with higher plasticity, higher moisture content, and lower strength was present at shallow depth, below the topsoil layer. In general, soils encountered as the predominant subgrade materials are considered to have a Subgrade Support Rating (SSR) of **'POOR'**. An assumed Illinois Bearing Ratio (IBR) of **3.0** is also considered appropriate for pavement design.

Subgrade Preparation

Topsoil and vegetation should be stripped to the suitable subgrade soil along the trail alignment. The alignment should then be filled or cut to the design subgrade elevation and proofrolled with a loaded semi-dump truck, rubber tired end loader or similar equipment with a wheel load sufficient to locate any soft or unstable areas. Soft or unstable subgrade areas that cannot be repaired with discing, drying, and recompaction procedures should be undercut and replaced with a well-graded granular material. Initial project costs should allow for some subgrade undercutting and replacement with stone and geotechnical fabric in wet conditions.

Topsoil Depths

The following is a summary of the measured Topsoil depth at the borehole locations for earthwork estimates. The Topsoil depth is not always easy to determine and in many cases dark colored transitional soil is present just below the rooted soil. The contractor should base his cost estimate on his own measurements.

TABLE 1 – Topsoil Depth

Boring No.	Topsoil Depth, in.	Boring No.	Topsoil Depth, in.
B-1	18	B-15	18
B-2	15	B-16	8
B-3	11	B-17	7
B-4	9	B-18	9
B-5	13	B-19	13
B-6	14	B-20	13
B-7	4	B-21	14
B-8	15	B-22	13
B-9	4	B-23	9
B-10	4	B-24	6
B-11	13	B-25	14
B-12	6	B-26	16
B-13	10	B-27	7
B-14	11		

Embankment Fill

If fill is required to raise the pavement grade, material used as Structural FILL should be a medium to low plasticity cohesive (clay type) material, classified as 'CL' 'CL-ML' or a clean (low fines content) granular material such as 'SP', 'SW', 'GP' or 'GW', in accordance with ASTM D-2487, Classification of Soils for Engineering Purposes. The FILL should be placed in 9-inch maximum lifts loose measure and compacted to 95 percent of the maximum dry density as defined by ASTM D-698.

Subgrade Treatment Areas

The general subgrade soil anticipated to be exposed is very stiff to hard Silty CLAY in most areas. However, lower strength, more plastic CLAYs were present in lower elevation areas of the trail. The following table outlines the lower strength subgrade soils and the recommended soil treatments identified by the soil borings:

Summary of Earthwork Remedial Treatment Areas

Boring	Subgrade Conditions	Treatment Depth	Treatment Material
B-1	Brown & Grey Silty CLAY Qu=2.91 tsf, Mc=27%	8"	Note 2
B-2	Red Brown Silty CLAY Qu=1.59 tsf, Mc=22%	10"	Note 3
B-4	Brown Silty CLAY Qu=2.83 tsf, Mc=25%	8"	Note 2
B-5	Dark Brown CLAY Qu=1.36 tsf, Mc=29%	12"	Note 3
B-11	Dark Brown Silty CLAY Qu=2.68 tsf, Mc=28%	8"	Note 2
B-12	Dark Brown Silty CLAY Qu=4.46 tsf, Mc=25%	8"	Note 2
B-14	Brown Clayey SAND Qu= 1.24, Mc=20%	12"	Note 3
B-15	Red Brown Silty CLAY Qu=1.13 tsf, Mc=25%	12"	Note 3
B-19	Red Brown CLAY Qu=1.59 tsf, Mc=21%	12"	Note 3
B-20	Dark Brown Silty CLAY Qu=1.90 tsf, Mc=25%	8"	Note 2

Notes

1. A 12" thick design pavement section is assumed.

2. Remove surface vegetation, roots, topsoil to the depth encountered, then disk, dry, and compact exposed soil. Then place and compact embankment fill in lifts to design subgrade.

3. Replacement Materials or Treatment:
   Embankment Materials and placement in accordance with Sections 205, 207 and Reoccurring Special Provision
   PGES – Porous Granular Embankment Subgrade / Aggregate Subgrade
   EMB – Suitable Embankment FILL per Section 205

Subgrade Treatment Plan Notes

Porous Granular Embankment Subgrade (PGES) should be specified for use at the locations indicated for soils that tend to be unsuitable or unstable or where additional fill is needed. The actual need for removal and replacement with PGES will be determined in the field at the time of construction by the geotechnical engineer.

All potentially unstable soils should be tested with a static cone penetrometer and treated in accordance with Article 301.04 and the undercut guidelines in the IDOT Subgrade Stability Manual. If unstable and/or unsuitable material is not encountered, then the quantity shall be deducted and no additional compensation will be due to the contractor.

Proposed Parking Lot

Borings B-26 and B-27 were made for a parking lot with access off of West Miller Road. Both of these borings encountered very stiff Silty CLAY just below 16 inches and 7 inches of surficial Topsoil. General Subgrade treatment of cut to grade, inspect with a proof roll and repair as necessary is warranted.

Surface and Groundwater Control

Groundwater was not encountered near the surface at the time of drilling. Excavations to remove topsoil at this site are not expected to expose groundwater.

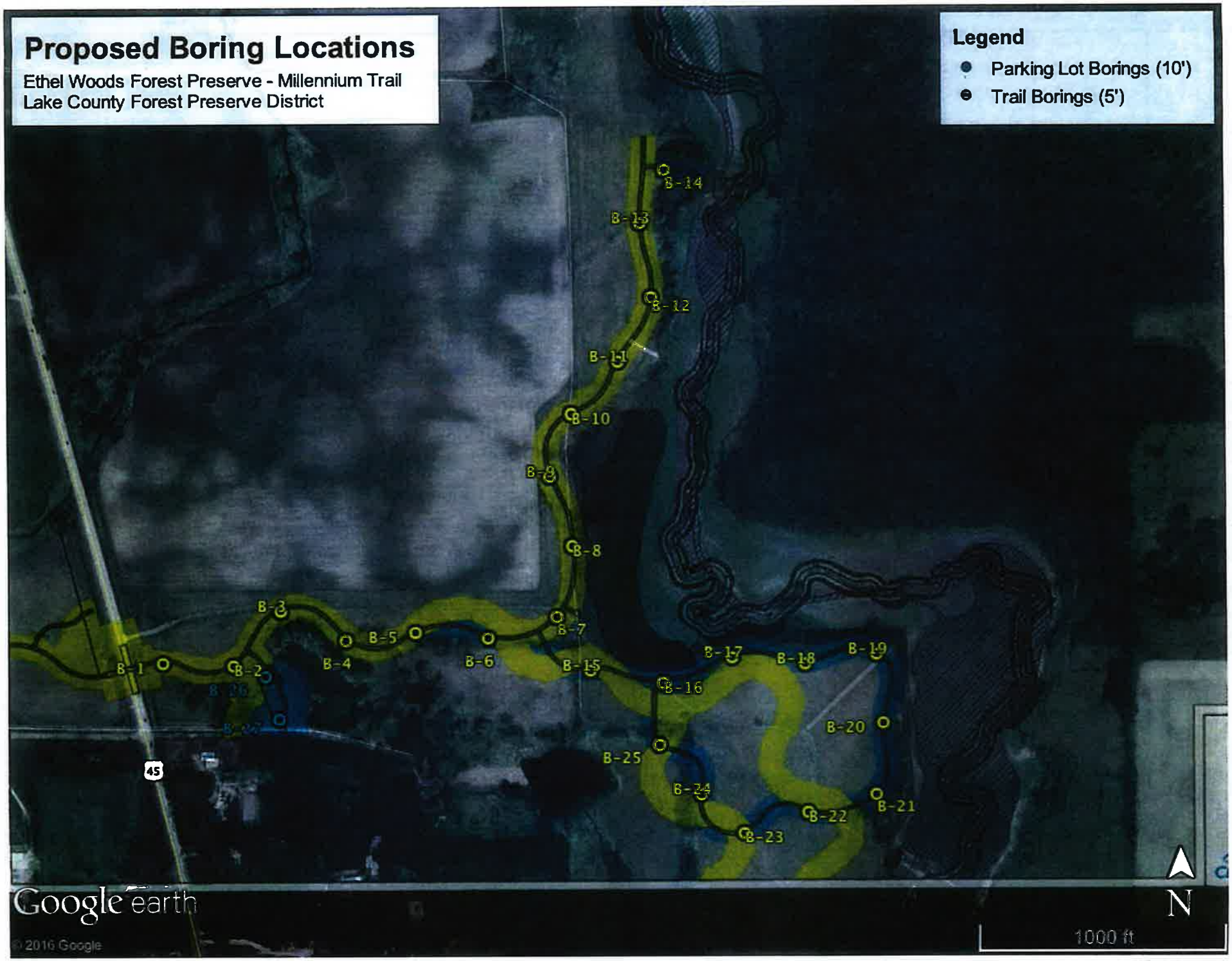
Closure

The report is based on the information available at this time and as the design progresses, we would be happy to review the soil conditions relevant to the proposed construction. Thank you for the opportunity to offer our services. If you should have any questions regarding this report, please feel free to call.

Very truly yours,
MIDLAND STANDARD ENGINEERING & TESTING, INC.

William J. Wyzgala, P.E.
Principal

Attachments: Boring Location Diagram
Boring Logs (B-1 through B-27)
Laboratory Test Data
General Notes


Proposed Boring Locations
Ethel Woods Forest Preserve - Millennium Trail
Lake County Forest Preserve District
Legend
Parking Lot Borings (10')
Trail Borings (5')
B-1
B-2
B-3
B-4
B-5
B-6
B-7
B-8
B-9
B-10
B-11
B-12
B-13
B-14
B-15
B-16
B-17
B-18
B-19
B-20
B-21
B-22
B-23
B-24
B-25
45
Google earth
© 2016 Google
N
1000 ft

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-1	Page 1 of 1
PROJECT: Ethel Woods - Trail	SITE LOCATION: Lake County, Illinois	
BORING LOCATION: See Location Map	CLIENT: Civiltech Engineering, Inc.	

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Black Silty CLAY Topsoil 18"	0.0							
				SS	1A	6	26			
		Brown & Grey Silty CLAY, trace Sand, trace Gravel, CL very stiff	-1.5							
2.5					1B	8	27	93	2.91	
				SS	2	6	24	90	2.41	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.			BORING STARTED:	7/24/17
DURING DRILLING:	None	MSET	BORING COMPLETED:	7/24/17
IMMEDIATELY AFTER DRILLING:	Dry		LOGGED BY:	GPF
DELAYED READING AFTER			BORING METHOD:	HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-2	Page 1 of 1
PROJECT: Ethel Woods - Trail	SITE LOCATION: Lake County, Illinois	
BORING LOCATION: See Location Map	CLIENT: Civiltech Engineering, Inc.	

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Black Silty CLAY, Topsoil 15"	0.0							
		Red Brown Silty CLAY, little Sand, CL, stiff	-1.3	SS	1	7	22	87	1.59	
2.5		Brown & Grey Silty CLAY, some Sand, little Gravel, SC, very stiff	-3.0	SS	2	14	11	122	3.5 Qp	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: dRY
DELAYED READING AFTER

MSET

BORING STARTED: 7/24/17
BORING COMPLETED: 7/24/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-3	Page 1 of 1

PROJECT: **Ethel Woods - Trail**

SITE LOCATION: **Lake County, Illinois**

BORING LOCATION: **See Location Map**

CLIENT: **Civiltech Engineering, Inc.**

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Black Silty CLAY Topsoil 11"	0.0							
		Brown, Grey, & Dark Grey Silty CLAY, trace Sand, CL, very stiff	-0.9	SS	1	5	18	98	2.10	
2.5		Dark Grey Silty CLAY, trace Sand, trace Gravel, CL stiff	-3.0	SS	2	5	26	94	1.94	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/24/17
BORING COMPLETED: 7/24/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-4	Page 1 of 1

PROJECT: Ethel Woods - Trail

SITE LOCATION: Lake County, Illinois

BORING LOCATION: See Location Map

CLIENT: Civiltech Engineering, Inc.

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Black Silty CLAY Topsoil 9"	0.0							
		Brown to Brown & Grey Silty CLAY, trace to little Sand, trace Gravel, CL very stiff	-0.8	SS	1	5	25	92	2.83	
2.5										
				SS	2	8	18	107	2.17	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/24/17
BORING COMPLETED: 7/24/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-5	Page 1 of 1

PROJECT: **Ethel Woods - Trail** SITE LOCATION: **Lake County, Illinois**

BORING LOCATION: **See Location Map** CLIENT: **Civiltech Engineering, Inc.**

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Black Silty CLAY Topsoil 13"	0.0							
		Dark Brown CLAY trace Sand, trace Gravel, CH, stiff	-1.1	SS	1	6	29	82	1.36	pH = 7.30
2.5		Brown & Grey Silty CLAY to Clayey SILT, little Sand, trace Gravel, CL-ML, stiff	-2.5							
				SS	2	11	18	126	1.63	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/24/17
BORING COMPLETED: 7/24/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-6	Page 1 of 1

PROJECT: Ethel Woods - Trail

SITE LOCATION: Lake County, Illinois

BORING LOCATION: See Location Map

CLIENT: Civiltech Engineering, Inc.

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Black Silty CLAY Topsoil 14"	0.0							
		Brown & Grey Silty CLAY, little Sand, trace Gravel, CL, very stiff to hard	-1.2	SS	1	8	23	101	3.96	
2.5										
				SS	2	16	16	107	6.95	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING:
IMMEDIATELY AFTER DRILLING:
DELAYED READING AFTER

MSET

BORING STARTED: 7/24/17
BORING COMPLETED: 7/24/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-7	Page 1 of 1
PROJECT: Ethel Woods - Trail	SITE LOCATION: Lake County, Illinois	
BORING LOCATION: See Location Map	CLIENT: Civiltech Engineering, Inc.	

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Dark Brown Silty CLAY Topsoil 4"	0.0							
		Brown & Grey Silty CLAY, little Sand, trace Gravel, CL very stiff to hard	-0.3							
				SS	1	8	16	108	3.69	
2.5										
				SS	2	22	14	117	7.42	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/24/17
BORING COMPLETED: 7/24/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-8	Page 1 of 1

PROJECT: Ethel Woods - Trail

SITE LOCATION: Lake County, Illinois

BORING LOCATION: See Location Map

CLIENT: Civiltech Engineering, Inc.

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Dark Brown Silty CLAY Topsoil 2"	0.0							
		Brown & Grey Silty CLAY, little Sand, trace Gravel, CL, hard to very hard	-0.2	SS	1	15	17	101	4.66	
2.5										
				SS	2	18	15	114	8.85	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/24/17
BORING COMPLETED: 7/24/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-9	Page 1 of 1

PROJECT: **Ethel Woods - Trail** SITE LOCATION: **Lake County, Illinois**

BORING LOCATION: **See Location Map** CLIENT: **Civiltech Engineering, Inc.**

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Dark Brown Silty CLAY Topsoil 4"	0.0							
		Brown & Grey Silty CLAY, little Sand, trace Gravel, CL hard to very stiff	-0.3	SS	1	9	19	107	5.08	
2.5										
				SS	2	14	18	100	2.52	
5		End of Boring at 5 feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/24/17
BORING COMPLETED: 7/24/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-10	Page 1 of 1

PROJECT: Ethel Woods - Trail

SITE LOCATION: Lake County, Illinois

BORING LOCATION: See Location Map

CLIENT: Civiltech Engineering, Inc.

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Dark Brown Silty CLAY Topsoil 4"	0.0							
		Brown & Grey Silty CLAY, little Sand, trace Gravel, CL hard	-0.3							
				SS	1	10	17	107	5.12	
2.5										
				SS	2	15	17	104	6.05	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/24/17
BORING COMPLETED: 7/24/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-11	Page 1 of 1

PROJECT: Ethel Woods - Trail

SITE LOCATION: Lake County, Illinois

BORING LOCATION: See Location Map

CLIENT: Civiltech Engineering, Inc.

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Dark Brown Silty CLAY Topsoil 13"	0.0							
		Dark Brown Silty CLAY, little Sand, trace Gravel, CL very stiff to hard	-1.1	SS	1	5	28	90	2.68	
2.5										
				SS	2	14	16	108	5.28	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/24/17
BORING COMPLETED: 7/24/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-12	Page 1 of 1

PROJECT: Ethel Woods - Trail

SITE LOCATION: Lake County, Illinois

BORING LOCATION: See Location Map

CLIENT: Civiltech Engineering, Inc.

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Dark Brown Silty CLAY Topsoil 6"	0.0							
		Dark Brown Silty CLAY, trace to little Sand, trace Gravel, CL hard	-0.5							
		to Brown & Grey		SS	1	6	25	93	4.46	
2.5										
				SS	2	8	24	92	4.35	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/24/17
BORING COMPLETED: 7/24/17
LOGGED BY: GPF
BORING METHOD: HSA

Midland Standard Engineering & Testing, Inc. 558 Plate Drive Unit 6, East Dundee, IL 60118 (847) 844-1895 f(847) 844-3875

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-13	Page 1 of 1
PROJECT: Ethel Woods - Trail	SITE LOCATION: Lake County, Illinois	
BORING LOCATION: See Location Map	CLIENT: Civiltech Engineering, Inc.	

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Dark Grey to Black Silty CLAY Topsoil 10"	0.0							
		Brown & Grey Silty CLAY, little Sand, trace Gravel, CL hrad to very stiff	-0.8	SS	1	8	18	108	4.85	
2.5										
				SS	2	8	18	101	3.26	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/24/17
BORING COMPLETED: 7/24/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-14	Page 1 of 1

PROJECT: Ethel Woods - Trail

SITE LOCATION: Lake County, Illinois

BORING LOCATION: See Location Map

CLIENT: Civiltech Engineering, Inc.

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Black Silty CLAY Topsoil 11"	0.0							
		Brown Clayey SAND, trace Gravel, SC stiff	-0.9	SS	1	5	20	95	1.24	pH = 6.89
2.5		Brown, trace Grey Silty CLAY, little Sand, trace Gravel, CL hard	-3.0	SS	2	13	15	114	4.15	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/24/17
BORING COMPLETED: 7/24/17
LOGGED BY: GPF
BORING METHOD: HSA

Midland Standard Engineering & Testing, Inc. 558 Plate Drive Unit 6, East Dundee, IL 60118 (847) 844-1895 f(847) 844-3875

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-15	Page 1 of 1

PROJECT: **Ethel Woods - Trail**

SITE LOCATION: **Lake County, Illinois**

BORING LOCATION: **See Location Map**

CLIENT: **Civiltech Engineering, Inc.**

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Black Silty CLAY Topsoil 18"	0.0							
		Red Brown and Dark Grey Silty CLAY, little Sand, CL stiff	-1.5	SS	1A	4	25	90	2.13	pH = 7.17
2.5					1B	5	25	93	1.13	
		Brown & Grey Silty CLAY, little Sand, trace Gravel, CL very stiff	-3.0	SS	2	7	19	103	2.02	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/26/17
BORING COMPLETED: 7/26/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-16	Page 1 of 1
PROJECT: Ethel Woods - Trail	SITE LOCATION: Lake County, Illinois	
BORING LOCATION: See Location Map	CLIENT: Civiltech Engineering, Inc.	

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Dark Brown Silty CLAY Topsoil 8"	0.0							
		Brown, trace Grey Silty CLAY, little Sand, trace Gravel, CL very stiff to hard	-0.7	SS	1	10	16	100	3.46	
2.5										
				SS	2	16	15	114	6.79	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/26/17
BORING COMPLETED: 7/26/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-17	Page 1 of 1
PROJECT: Ethel Woods - Trail	SITE LOCATION: Lake County, Illinois	
BORING LOCATION: See Location Map	CLIENT: Civiltech Engineering, Inc.	

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Dark Brown Silty CLAY Topsoil 7"	0.0							
		Brown & Grey Silty CLAY, little Sand, trace Gravel, CL very stiff to hard	-0.6	SS	1	10	16	100	3.80	
2.5										
				SS	2	16	16	116	7.14	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/26/17
BORING COMPLETED: 7/26/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-18	Page 1 of 1
PROJECT: Ethel Woods - Trail	SITE LOCATION: Lake County, Illinois	
BORING LOCATION: See Location Map	CLIENT: Civiltech Engineering, Inc.	

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Dark Brown & Black Silty CLAY Topsoil 9"	0.0							
		Brown to Brown & Grey Silty CLAY, little Sand, trace Gravel, CL very stiff to hard	-0.8	SS	1	8	22	106	3.03	
2.5										
				SS	2	17	13	109	5.74	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/26/17
BORING COMPLETED: 7/26/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-19	Page 1 of 1
PROJECT: Ethel Woods - Trail	SITE LOCATION: Lake County, Illinois	
BORING LOCATION: See Location Map	CLIENT: Civiltech Engineering, Inc.	

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Black Silty CLAY Topsoil 13"	0.0							pH = 7.06
		Red Brown CLAY, trace Sand, CH stiff	-1.1	SS	1A	4	27	93	1.59	
2.5		Brown & Grey Silty CLAY to Clayey SILT, CL-ML moist	-2.0		1B	2	26	93	0.62	
				SS	2	11	21	109	1.47	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/26/17
BORING COMPLETED: 7/26/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-20	Page 1 of 1
PROJECT: Ethel Woods - Trail	SITE LOCATION: Lake County, Illinois	
BORING LOCATION: See Location Map	CLIENT: Civiltech Engineering, Inc.	

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Black Silty CLAY Topsoil 13"	0.0							
		Dark Brown Silty CLAY, little Sand, trace Roots, CL	-1.1	SS	1	7	25	92	1.90	
2.5		Red Brown Silty SAND & GRAVEL, GM-SM medium dense	-3.0	SS	2	10	11			
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/26/17
BORING COMPLETED: 7/26/17
LOGGED BY: GPF
BORING METHOD: HSA

Midland Standard Engineering & Testing, Inc. 558 Plate Drive Unit 6, East Dundee, IL 60118 (847) 844-1895 f(847) 844-3875

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-21	Page 1 of 1
PROJECT: Ethel Woods - Trail	SITE LOCATION: Lake County, Illinois	
BORING LOCATION: See Location Map	CLIENT: Civiltech Engineering, Inc.	

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Dark Brown Silty CLAY Topsoil 14"	0.0							
		Brown & Grey Silty CLAY, little Sand, trace Gravel, Cl very stiff to hard	-1.2	SS	1	7	16	110	2.75	
2.5										
				SS	2	16	16	108	6.09	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/26/17
BORING COMPLETED: 7/26/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-22	Page 1 of 1
PROJECT: Ethel Woods - Trail	SITE LOCATION: Lake County, Illinois	
BORING LOCATION: See Location Map	CLIENT: Civiltech Engineering, Inc.	

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Black Silty CLAY Topsoil 13"	0.0							
		Brown & Grey Silty CLAY, little Sand, trace Gravel, CL very stiff to hard	-1.1	SS	1	7	17	101	2.95	
2.5										
				SS	2	13	16	112	4.69	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/26/17
BORING COMPLETED: 7/26/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-23	Page 1 of 1
PROJECT: Ethel Woods - Trail	SITE LOCATION: Lake County, Illinois	
BORING LOCATION: See Location Map	CLIENT: Civiltech Engineering, Inc.	

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO:	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Black Silty CLAY Topsoil 9"	0.0							
		Brown, trace Grey Silty CLAY, little Sand, trace Gravel, CL very stiff to hard	-0.8	SS	1	10	13		2.0 Qp	
2.5										
				SS	2	11	16	106	4.69	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/26/17
BORING COMPLETED: 7/26/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-24	Page 1 of 1

PROJECT: Ethel Woods - Trail
SITE LOCATION: Lake County, Illinois
BORING LOCATION: See Location Map
CLIENT: Civiltech Engineering, Inc.

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Dark Brown Silty CLAY, little Sand,	0.0							
		trace Gravel, CL hard	-0.5							
		Brown & Grey Silty CLAY, little Sand, trace Gravel, CL hard		SS	1	10	15	109	4.81	
2.5										
				SS	2	14	15	111	5.63	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/26/17
BORING COMPLETED: 7/26/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-25	Page 1 of 1

PROJECT: **Ethel Woods - Trail**

SITE LOCATION: **Lake County, Illinois**

BORING LOCATION: **See Location Map**

CLIENT: **Civiltech Engineering, Inc.**

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Black Silty CLAY Topsoil 14"	0.0							
		Brown & Grey Silty CLAY, little Sand, trace Gravel, CL hard to very stiff	-1.2	SS	1	6	16	114	6.71	
2.5										
				SS	2	12	17	100	2.48	
5		End of Boring at 5 Feet	-5.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/26/17
BORING COMPLETED: 7/26/17
LOGGED BY: GPF
BORING METHOD: HSA

MSET PROJECT NO.: 17386	LOG OF BORING NO. B-26	Page 1 of 1
PROJECT: Ethel Woods - Trail	SITE LOCATION: Lake County, Illinois	
BORING LOCATION: See Location Map	CLIENT: Civiltech Engineering, Inc.	

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Black Silty CLAY, Topsoil 16"	0.0							
		Brown to Brown & Grey Silty CLAY, little Sand, trace Gravel, CL very stiff to hard	-1.3	SS	1	5	22	96	3.07	
2.5										
				SS	2	11	14	120	3.96	
5										
				SS	3	19	17	117	8.92	
7.5										
				SS	4	19	17	108	5.98	
10		End of Boring at 10 feet	-10.0							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: None
IMMEDIATELY AFTER DRILLING: Dry
DELAYED READING AFTER

MSET

BORING STARTED: 7/24/17
BORING COMPLETED: 10 Feet
LOGGED BY: GPF
BORING METHOD: HSA

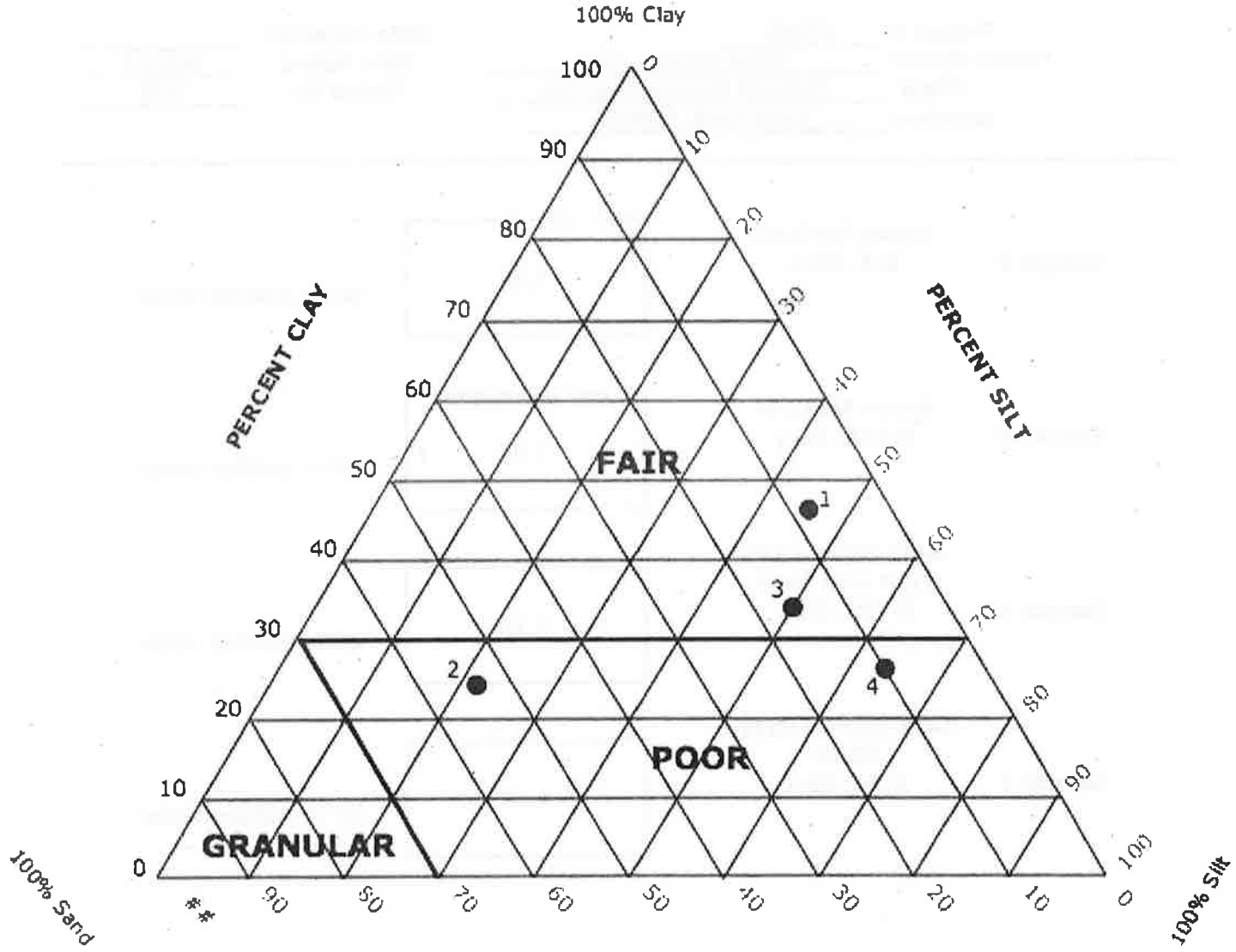
MSET PROJECT NO.: 17386	LOG OF BORING NO. B-27	Page 1 of 1
PROJECT: Ethel Woods - Trail	SITE LOCATION: Lake County, Illinois	
BORING LOCATION: See Location Map	CLIENT: Civiltech Engineering, Inc.	

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		Black to Dark Grey Silty CLAY	0.0							
		Topsoil 7"	-0.6							
		FILL: Brown & Grey, trace Black Silty CLAY, little Sand, trace Gravel, CL very stiff		SS	1	9	20	103	3.96	
2.5		Black Silty CLAY, trace Sand, CL	-3.0							
				SS	2A	6	23	94	2.95	
		Brown & Black Silty CLAY, trace Sand, CL, firm	-4.0		2B	8	23	97	0.70	
5										
		Brown to Brown & Grey Silty CLAY, little Sand, trace Gravel, CL very stiff to hard	-6.0	SS	3	6	21			
7.5										
				SS	4	12	20	99	5.43	
10		End of Boring at 10 Feet	-10.0							

WATER LEVEL OBSERVATIONS, ft.			BORING STARTED:	7/24/17
DURING DRILLING:	▽	9.0'	BORING COMPLETED:	7/24/17
IMMEDIATELY AFTER DRILLING:	▽	7.1'	LOGGED BY:	GPF
DELAYED READING AFTER 6 hrs	▽	8.1'	BORING METHOD:	HSA

MSET

SUBGRADE SUPPORT RATING DIAGRAM



	Boring	Samole	Depth	Classification
1.	B-5	SS-1	1-2.5'	Dark Brown CLAY, trace Sand, CH
2.	B-14	SS-1	1-2.5'	Dark Brown Clayey SAND, SC
3.	B-15	SS-1B	1.5 -2.5'	Red Brn & Dk Grey Silty CLAY, little Sand, CL
4.	B-19	SS-1A	1-2'	Red Brown CLAY, trace Sand, CH

MIDLAND STANDARD ENGINEERING TESTING, INC.
558 PLATE DRIVE, UNIT 6, EAST DUNDEE, IL 60118 (847) 844-1895 F(847) 844-3875

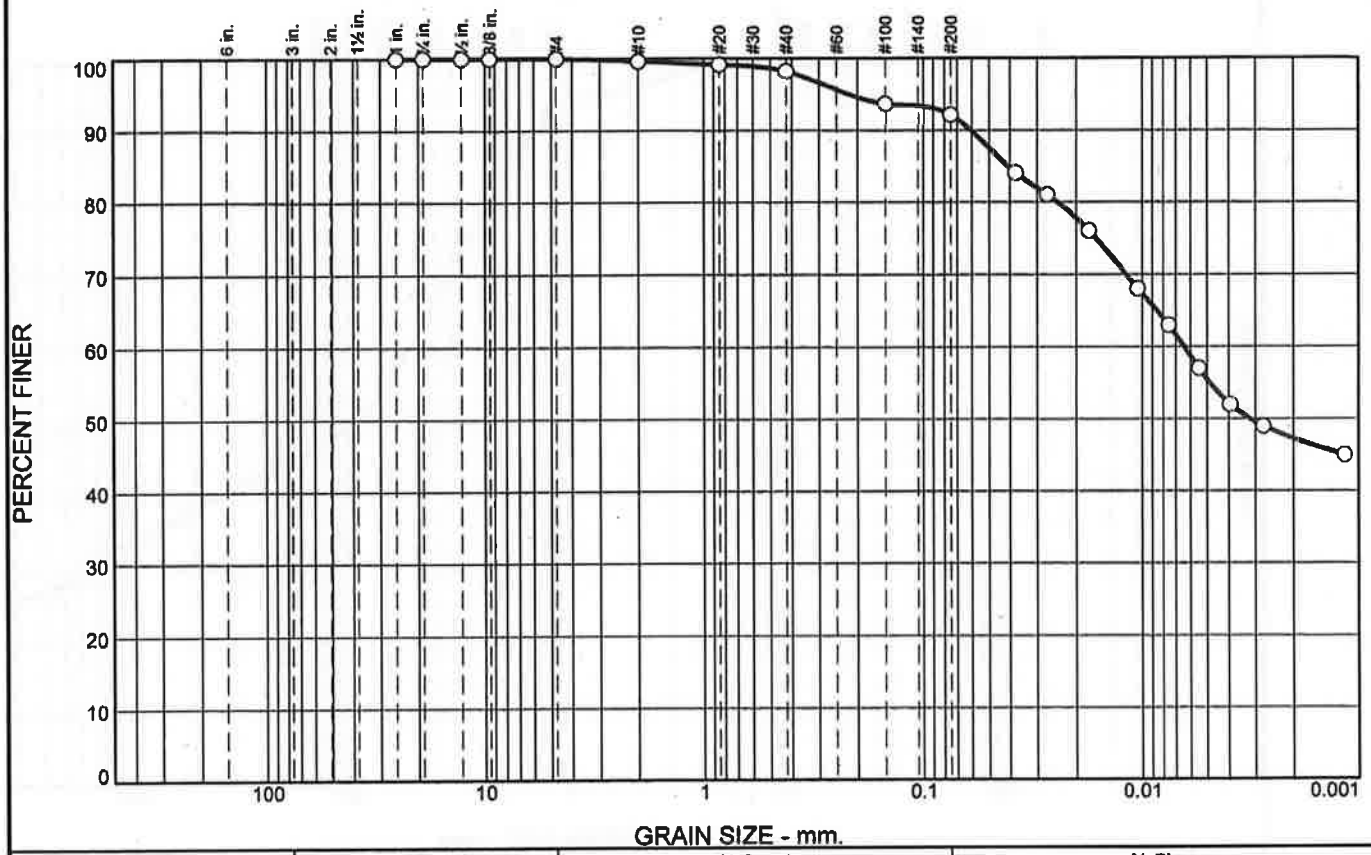
pH of Soil
ASTM D 4972 / AASHTO T289

Project # 17386
Project Name: Ethel Woods- Trail
Client: Civiltech Engineering, Inc.
Location: Lake Cook, Illinois

Date Received:
Date Tested: 9/8/17
Tested by: JDS

Sample #	Brown Fat CLAY B-5, SS-1	7.30	pH in distilled water
Sample #	Brown Fat CLAY B-19A, SS-1	7.06	pH in distilled water
Sample #	Light Brown Lean CLAY with Sand B-15B, SS-1	7.17	pH in distilled water
Sample #	Dark Brown Clayey SAND B-14, SS-1	6.89	pH in distilled water

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	2	6	45	47

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100		
3/4"	100		
1/2"	100		
3/8"	100		
#4	100		
#10	100		
#20	99		
#40	98		
#100	94		
#200	92		
0.0378 mm.	84		
0.0271 mm.	81		
0.0175 mm.	76		
0.0105 mm.	68		
0.0076 mm.	63		
0.0055 mm.	57		
0.0039 mm.	52		
0.0028 mm.	49		
0.0012 mm.	45		

* (no specification provided)

Soil Description

Brown Fat CLAY

Atterberg Limits

PL= 19 LL= 55 PI= 36

Coefficients

D_{90}= 0.0606 D_{85}= 0.0411 D_{60}= 0.0064
D_{50}= 0.0032 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CH AASHTO= A-7-6(36)

Remarks

Location: B-5
Sample Number: SS-1

Date:

Midland Standard Engineering & Testing

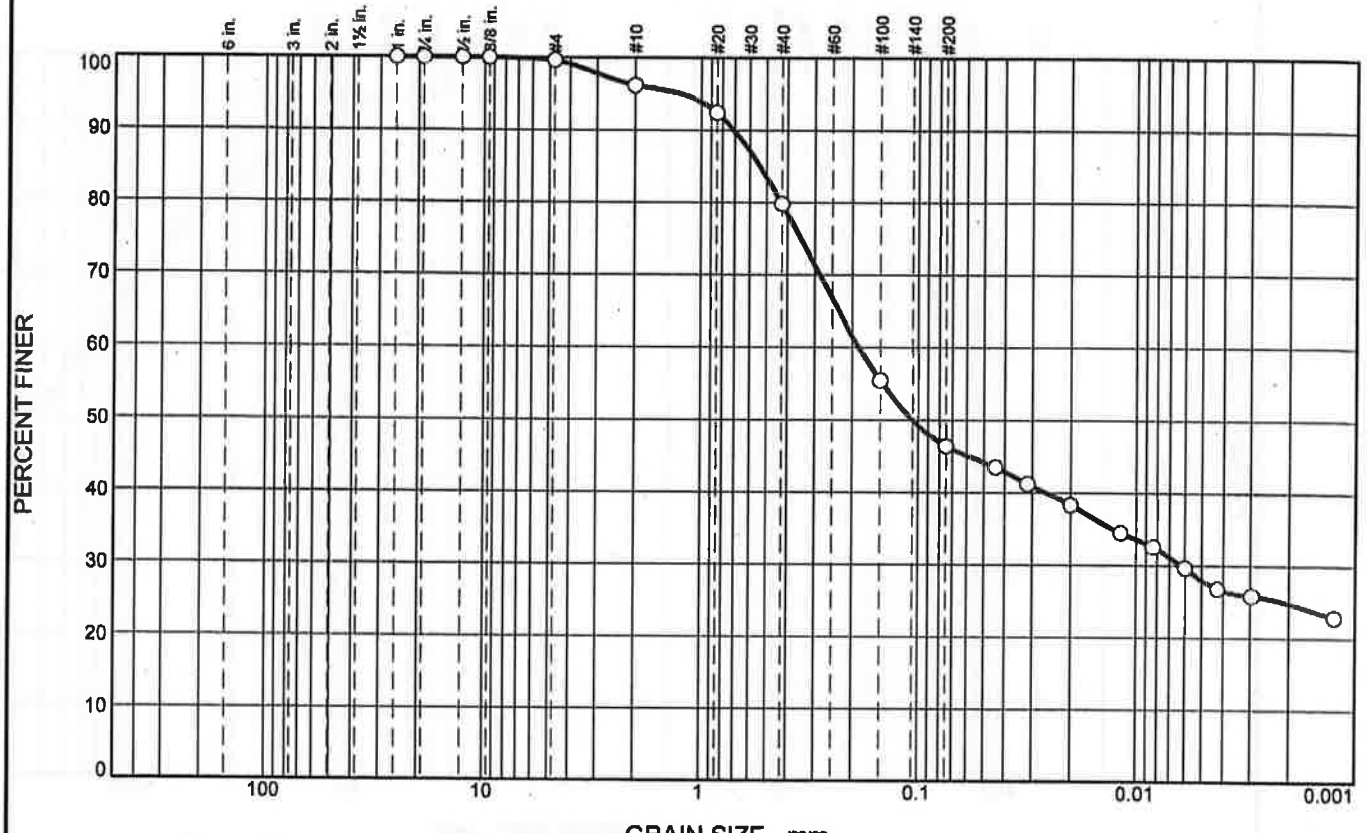
East Dundee, IL

Client: Civiltech Engineering, Inc.
Project: Ethel Woods - Trail

Project No: 17386 **Figure**

Tested By: JDS **Checked By:** KP

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	4	16	34	21	25

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100		
3/4"	100		
1/2"	100		
3/8"	100		
#4	100		
#10	96		
#20	92		
#40	80		
#100	55		
#200	46		
0.0442 mm.	44		
0.0315 mm.	41		
0.0201 mm.	38		
0.0118 mm.	34		
0.0084 mm.	33		
0.0060 mm.	30		
0.0043 mm.	27		
0.0030 mm.	26		
0.0012 mm.	23		

* (no specification provided)

Soil Description

Dark Brown Clayey SAND

Atterberg Limits

PL= 14 LL= 44 PI= 30

Coefficients

D_{90}= 0.7089 D_{85}= 0.5382 D_{60}= 0.1872
D_{50}= 0.1064 D_{30}= 0.0062 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-7-6(9)

Remarks

Location: B-14
Sample Number: SS-1

Date:

Midland Standard Engineering & Testing

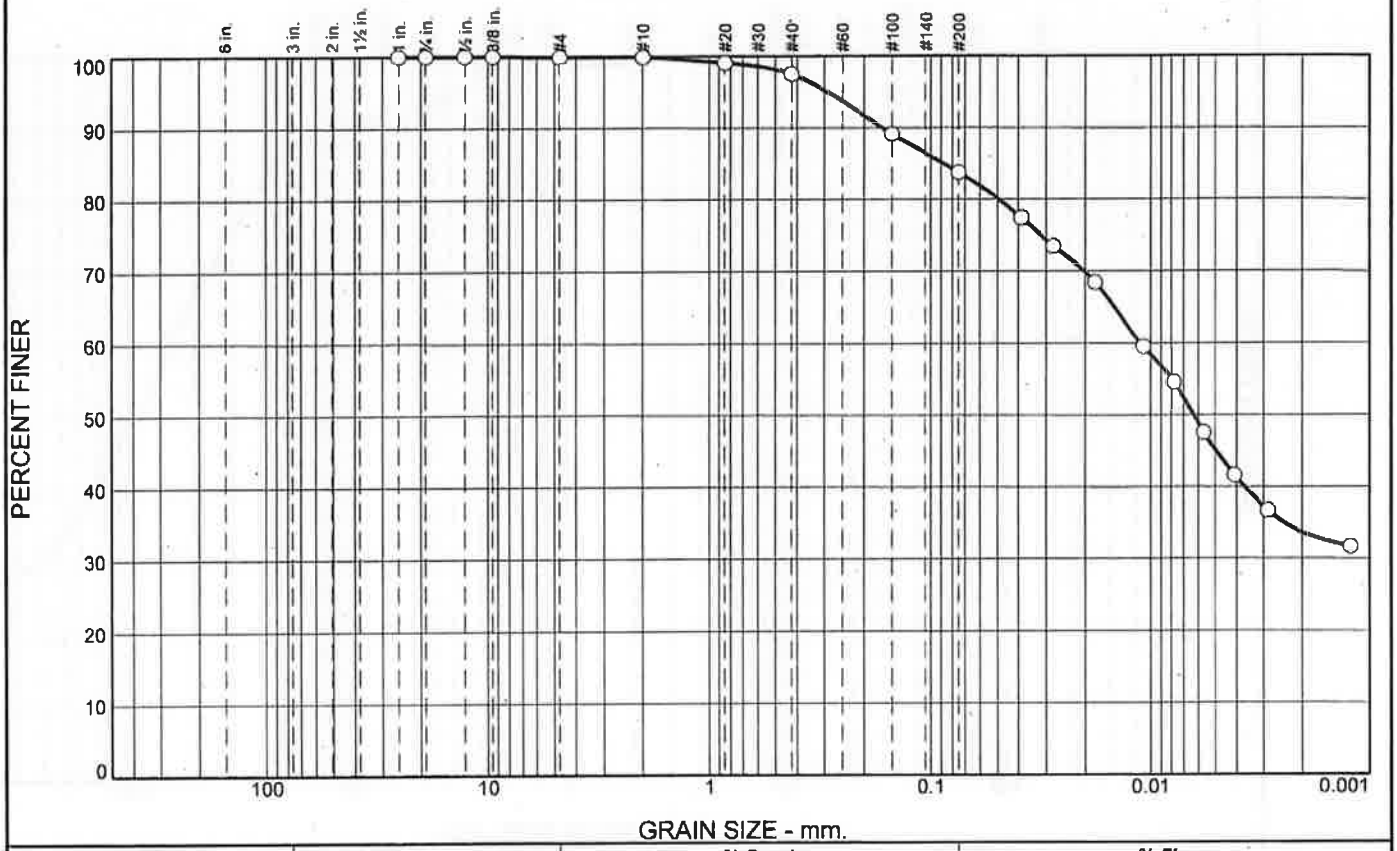
East Dundee, IL

Client: Civiltech Engineering, Inc.
Project: Ethel Woods - Trail

Project No: 17386 **Figure**

Tested By: JDS **Checked By:** KP

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.0	2.5	13.7	50.1	33.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100.0		
3/4"	100.0		
1/2"	100.0		
3/8"	100.0		
#4	99.9		
#10	99.9		
#20	99.0		
#40	97.4		
#100	89.1		
#200	83.7		
0.0389 mm.	77.4		
0.0280 mm.	73.4		
0.0181 mm.	68.4		
0.0108 mm.	59.5		
0.0078 mm.	54.5		
0.0057 mm.	47.6		
0.0041 mm.	41.6		
0.0029 mm.	36.7		
0.0012 mm.	31.7		

* (no specification provided)

Soil Description

Red Brown & Dark Grey Silty CLAY

Atterberg Limits

PL= 17 LL= 41 PI= 24

Coefficients

D_{90}= 0.1670 D_{85}= 0.0885 D_{60}= 0.0112
D_{50}= 0.0063 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-7-6(20)

Remarks

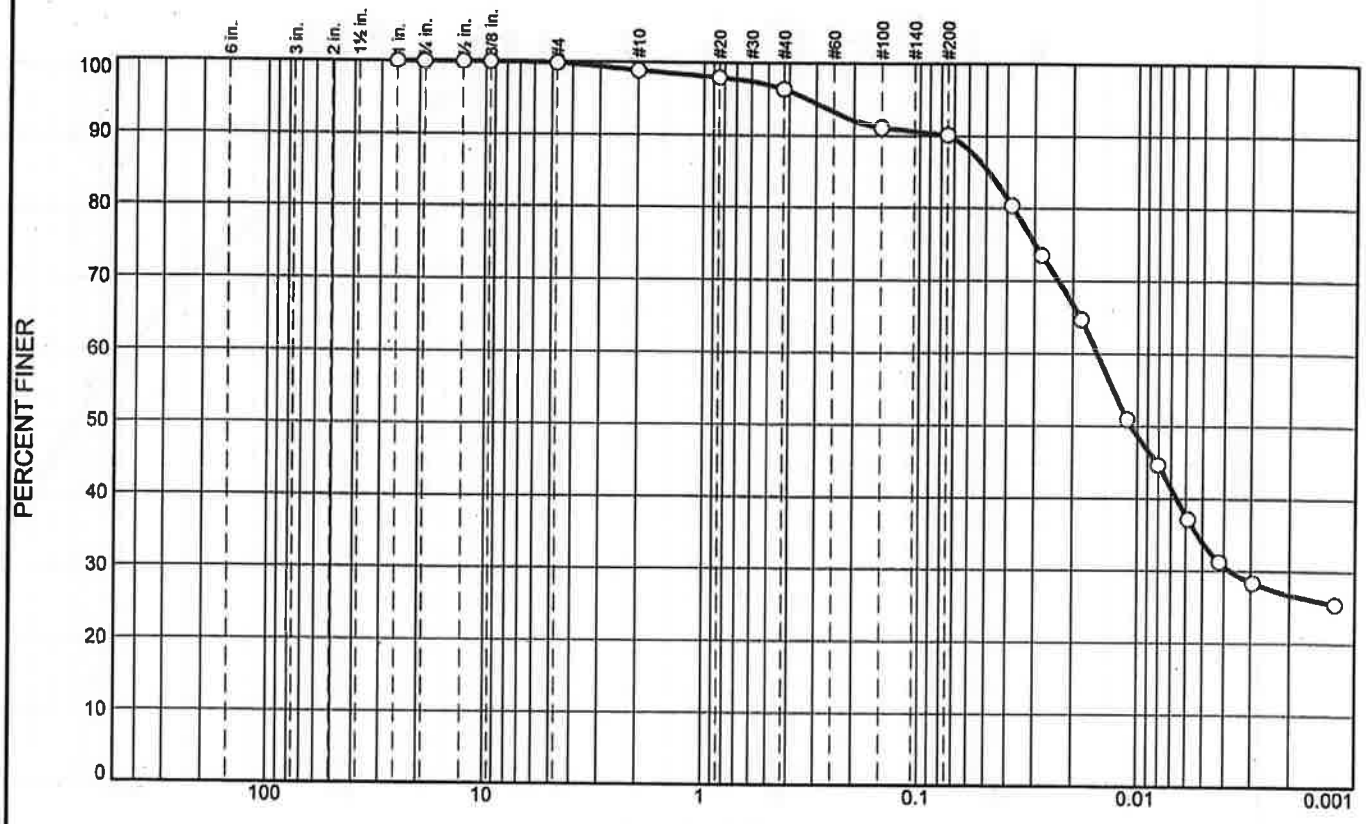
Location: B-15B
Sample Number: SS-1

Date:

Midland Standard Engineering & Testing	**Client:** Civiltech Engineering, Inc.
	Project: Ethel Woods - Trail
East Dundee, IL	**Project No:** 17386 **Figure**

Tested By: JDS **Checked By:** KP

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	1	3	6	63	27

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100		
3/4"	100		
1/2"	100		
3/8"	100		
#4	100		
#10	99		
#20	98		
#40	96		
#100	91		
#200	90		
0.0382 mm.	80		
0.0278 mm.	73		
0.0183 mm.	65		
0.0111 mm.	51		
0.0081 mm.	45		
0.0059 mm.	37		
0.0042 mm.	31		
0.0030 mm.	28		
0.0012 mm.	25		

(no specification provided)

Soil Description

Brown Fat CLAY

Atterberg Limits

PL= 17 LL= 68 PI= 51

Coefficients

D_{90}= 0.0733 D_{85}= 0.0487 D_{60}= 0.0155
D_{50}= 0.0107 D_{30}= 0.0037 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CH AASHTO= A-7-6(49)

Remarks

Location: B-19A
Sample Number: SS-1

Date:

Midland Standard Engineering & Testing

East Dundee, IL

Client: Civiltech Engineering, Inc.
Project: Ethel Woods - Trail

Project No: 17386 **Figure**

Tested By: JDS **Checked By:** KP

GENERAL NOTES

PARTICLE SIZE DESCRIPTION & TERMINOLOGY

Coarse Grained or Granular 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 or clayey silts if they are cohesive and silts if they are non-cohesive. In addition to gradation, granular soils are defined on the basis of their relative in-place density and the fine grained soils on the basis of their strength or consistency and their plasticity.

Major Component of Sample	Size Range
Boulders	Over 8 in. (200 mm)
Cobbles	8 inches to 3 inches (200 mm to 75mm)
Gravel	3 inches to #4 sieve (75mm to 4.75mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt	Passing #200 sieve (0.075mm to 0.002mm)
Clay	Smaller than 0.002mm

Descriptive Term of Components Also Present in Sample	Approximate Quantity (Percent)
Trace	1 - 9
Little	10 - 19
Some	20 - 34
And	35 - 50

RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION

GRANULAR SOILS

DENSITY CLASSIFICATION	APPROXIMATE RANGE OF N *
Very Loose	0 - 3
Slightly Dense	4 - 9
Medium Dense	10 - 29
Dense	30 - 49
Very Dense	50 - 80
Extremely Dense	80 +

COHESIVE SOILS

CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH, Qu - TSF	APPROXIMATE RANGE OF N *
Very Soft	0.25	0 - 2
Soft	0.25 - 0.49	3 - 4
Firm	0.50 - 0.99	5 - 8
Stiff	1.00 - 1.99	9 - 15
Very Stiff	2.00 - 3.99	16 - 30
Hard	4.00 - 8.00	31 - 50
Very Hard	8.00 +	Over 50

* STANDARD PENETRATION TEST (ASTM D1586) - A 2.0" outside-diameter, split barrel sampler is driven into undisturbed soil by means of a 140 pound weight falling freely through a vertical distance of 30 inches. The sampler is normally driven 3 successive 6 inch increments. The total number of blows required for the final 12 inches of penetration is the Standard Penetration Resistance (N).

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APPENDIX 1
PREVAILING WAGE ORDINANCE

General Offices 1899 West Winchester Road Libertyville Illinois 60048 Telephone 847-367-6640 Fax 847-367-6649

LAKE COUNTY FOREST PRESERVES
www.LCFPD.org

Preservation, Restoration, Education and Recreation

DATE: June 8, 2017 Agenda Item # 9.1

MEMO TO: S. Michael Rummel, Chair
Finance Committee

FROM: Steve Neaman
Director of Finance

RECOMMENDATION: Recommend approval of an Ordinance ascertaining the 2017/2018 Prevailing Wage Rates for Lake County.

STRATEGIC DIRECTION SUPPORTED: Organizational Sustainability

FINANCIAL DATA: No impact.

BACKGROUND: Annually, the District is required by the Prevailing Wage Act, 820 ILCS 130/0.01 et seq., to adopt the Prevailing Wage Rates for Lake County. A copy of the Ordinance must then be filed with the Secretary of State Index Division and the Department of Labor of the State of Illinois and published in a newspaper of general circulation.

REVIEW BY OTHERS: Chief Operations Officer, Purchasing Manager, Corporate Counsel

STATE OF ILLINOIS)
) SS
COUNTY OF LAKE)

BOARD OF COMMISSIONERS
LAKE COUNTY FOREST PRESERVE DISTRICT
REGULAR JUNE MEETING
JUNE 13, 2017

MADAM PRESIDENT AND MEMBERS OF THE BOARD OF COMMISSIONERS:

Your **FINANCE COMMITTEE** presents herewith "An Ordinance Ascertaining Prevailing Wage Rates", and requests its approval.

FINANCE COMMITTEE:

Date: 6/8/2017 ☐ Roll Call Vote: Ayes: ___ Nays: _____

☑ Voice Vote Majority Ayes; Nays: 0

LAKE COUNTY FOREST PRESERVE DISTRICT
LAKE COUNTY ILLINOIS

AN ORDINANCE ASCERTAINING PREVAILING WAGE RATES

WHEREAS, the Prevailing Wage Act, 820 ILCS 130/0.01 et seq. (1993) (the "Act"), provides that laborers, workers and mechanics that are directly employed by contractors or subcontractors that are engaged in the construction or demolition of public works on behalf of public bodies shall be paid no less than the general prevailing hourly rate in the locality where the work is performed; and

WHEREAS, Section 4 of the Act requires that a public body awarding any contract for public works or otherwise undertaking any public works "shall ascertain the general prevailing rate of hourly wages in the locality in which the work is to be performed" for the various categories of work; and

WHEREAS, the Finance Committee has reviewed the prevailing wage rate determinations of the State of Illinois Department of Labor for the County of Lake as of June 8, 2017, a copy of which is hereby incorporated in and made a part of this ordinance as Exhibit A, and has ascertained and determined that the general prevailing rate of wages for public works projects within the Lake County Forest Preserve District (the "District") is the same as stated in Exhibit A;

NOW, THEREFORE, BE IT ORDAINED by the Board of Commissioners of the Lake County Forest Preserve District, Lake County, Illinois, THAT:

Section 1: Recitals. The recitals set forth above are incorporated as a part of this Ordinance by this reference.

Section 2: Prevailing Wage Rates. The general prevailing rate of wages for public works projects within the District is hereby ascertained and determined to be the same as stated in Exhibit A. As required by the Act, any and all revisions of the prevailing rate of wages in Lake County by the Illinois Department of Labor shall supersede the determination in Exhibit A and shall apply to any and all public works construction undertaken by the District.

Section 3: Public Works. Nothing in this Ordinance shall be construed to apply the general prevailing rate of wages for Lake County to any work or employment except public works of the District conducted in the District to the extent required by the Act.

Section 4: Public Posting. The Secretary of the District is hereby directed to publicly post or keep available for inspection by any interested party in the main office of the District the determination of the prevailing rate of wages for Lake County as set forth in this ordinance.

Section 5: Filing, Publication and Notification. The Executive Director is hereby directed to:

A. Promptly file a certified copy of this Ordinance with the Illinois Secretary of State and the Illinois Department of Labor; and

B. Cause this Ordinance to be published in a newspaper of general circulation within the District within thirty (30) days of its filing with the Illinois Secretary of State or the Illinois Department of Labor; and

C. Mail a copy of any determination made in this Ordinance to any employer, and to any association of employers, and to any person or association of employees who have filed their names and addresses with the District requesting copies of any determination stating the particular rates and the particular class of workers whose wages will be affected by such rates; and

D. Where a public work has been awarded with a public bid, contract or project specification, list the rates stated in Exhibit A in bid specifications for all public works contracts to be awarded, and where a public work has been awarded without a public bid, contract or project specification, provide written notice on the purchase order related to the work or on a separate document that not less than the rates stated in Exhibit A must be paid to all laborers, workers, and mechanics performing work on the project.

Section 6: Effective Date. This Ordinance shall be in full force and effect from and after its passage and approval in the manner provided by law.

PASSED this 13th day of JUNE, 2017.

AYES: 21

NAYS: 0

APPROVED this 13th day of JUNE, 2017.

Ann B. Maine

Ann B. Maine, President
Lake County Forest Preserve District

ATTEST:

Julie Gragnani

Julie Gragnani, Secretary
Lake County Forest Preserve District

Exhibit No. 5265

Prevailing Wage rates for Lake County effective Sept. 1, 2017

Trade Title	Region	Type	Class	Base Wage	Fore-man Wage	M-F OT	OSA	OSH	H/W	Pension	Vacation	Training
ASBESTOS ABT-GEN	ALL	ALL		41.20	42.20	1.5	1.5	2	14.65	12.32	0.00	0.50
ASBESTOS ABT-MEC	ALL	BLD		37.46	39.96	1.5	1.5	2	11.62	11.06	0.00	0.72
BOILERMAKER	ALL	BLD		48.49	52.86	2	2	2	6.97	19.61	0.00	0.90
BRICK MASON	ALL	BLD		45.38	49.92	1.5	1.5	2	10.45	16.68	0.00	0.90
CARPENTER	ALL	ALL		46.35	48.35	1.5	1.5	2	11.79	18.87	0.00	0.63
CEMENT MASON	ALL	ALL		44.98	46.98	2	1.5	2	10.00	20.88	0.00	0.50
CERAMIC TILE FNSHER	ALL	BLD		38.96	38.56	1.5	1.5	2	10.35	11.18	0.00	0.68
COMMUNICATION TECH	ALL	BLD		36.54	38.94	1.5	1.5	2	11.72	13.23	2.17	0.55
ELECTRIC PWR EQMT OP	ALL	ALL		0.00	0.00	0	0	0	0.00	0.00	0.00	0.00
ELECTRIC PWR EQMT OP	ALL	HWY		41.45	56.38	1.5	1.5	2	5.50	12.87	0.00	0.73
ELECTRIC PWR GRNDMAN	ALL	ALL		30.33	53.29	1.5	1.5	2	5.00	9.40	0.00	0.30
ELECTRIC PWR GRNDMAN	ALL	HWY		32.00	56.38	1.5	1.5	2	5.50	9.92	0.00	0.66
ELECTRIC PWR LINEMAN	ALL	ALL		45.36	51.48	1.5	1.5	2	5.00	14.06	0.00	0.45
ELECTRIC PWR LINEMAN	ALL	HWY		49.67	56.38	1.5	1.5	2	5.50	15.40	0.00	0.88
ELECTRIC PWR TRK DRV	ALL	ALL		30.34	51.48	1.5	1.5	2	5.00	9.40	0.00	0.30
ELECTRIC PWR TRK DRV	ALL	HWY		33.14	56.38	1.5	1.5	2	5.50	10.29	0.00	0.59
ELECTRICIAN	ALL	BLD		40.00	44.00	1.5	1.5	2	14.10	19.74	4.00	0.65
ELEVATOR CONSTRUCTOR	ALL	BLD		51.94	58.43	2	2	2	14.43	14.96	4.16	0.90
FENCE ERECTOR	ALL	ALL		39.58	41.58	1.5	1.5	2	13.40	13.90	0.00	0.40
GLAZIER	ALL	BLD		42.45	43.95	1.5	1.5	2	14.04	20.14	0.00	0.94
HT/FROST INSULATOR	ALL	BLD		50.50	53.00	1.5	1.5	2	12.12	12.96	0.00	0.72
IRON WORKER	ALL	ALL		47.33	49.33	2	2	2	14.15	22.39	0.00	0.35
LABORER	ALL	ALL		41.20	41.95	1.5	1.5	2	14.65	12.32	0.00	0.50
LATHER	ALL	ALL		46.35	48.35	1.5	1.5	2	11.79	18.87	0.00	0.63
MACHINIST	ALL	BLD		45.35	47.85	1.5	1.5	2	7.26	8.95	1.85	0.00

MARBLE FINISHERS	ALL	ALL		33.95	33.95	1.5	1.5	2	10.45	15.52	0.00	0.47
MARBLE MASON	ALL	BLD		44.63	49.09	1.5	1.5	2	10.45	16.28	0.00	0.59
MATERIAL TESTER I	ALL	ALL		31.20	31.20	1.5	1.5	2	14.65	12.32	0.00	0.50
MATERIALS TESTER II	ALL	ALL		36.20	36.20	1.5	1.5	2	14.65	12.32	0.00	0.50
MILLWRIGHT	ALL	ALL		46.35	48.35	1.5	1.5	2	11.79	18.87	0.00	0.63
OPERATING ENGINEER	ALL	BLD	1	50.10	54.10	2	2	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	BLD	2	48.80	54.10	2	2	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	BLD	3	46.25	54.10	2	2	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	BLD	4	44.50	54.10	2	2	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	BLD	5	53.85	54.10	2	2	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	BLD	6	51.10	54.10	2	2	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	BLD	7	53.10	54.10	2	2	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	FLT	1	55.90	55.90	1.5	1.5	2	18.05	13.60	1.90	1.30
OPERATING ENGINEER	ALL	FLT	2	54.40	55.90	1.5	1.5	2	18.05	13.60	1.90	1.30
OPERATING ENGINEER	ALL	FLT	3	48.40	55.90	1.5	1.5	2	18.05	13.60	1.90	1.30
OPERATING ENGINEER	ALL	FLT	4	40.25	55.90	1.5	1.5	2	18.05	13.60	1.90	1.30
OPERATING ENGINEER	ALL	FLT	5	57.40	55.90	1.5	1.5	2	18.05	13.60	1.90	1.30
OPERATING ENGINEER	ALL	FLT	6	38.00	55.90	1.5	1.5	2	18.05	13.60	1.90	1.30
OPERATING ENGINEER	ALL	HWY	1	48.30	52.30	1.5	1.5	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	HWY	2	47.75	52.30	1.5	1.5	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	HWY	3	45.70	52.30	1.5	1.5	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	HWY	4	44.30	52.30	1.5	1.5	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	HWY	5	43.10	52.30	1.5	1.5	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	HWY	6	51.30	52.30	1.5	1.5	2	18.80	14.35	2.00	1.30
OPERATING ENGINEER	ALL	HWY	7	49.30	52.30	1.5	1.5	2	18.80	14.35	2.00	1.30
ORNAMNTL IRON WORKER	ALL	ALL		46.75	49.25	2	2	2	13.90	19.79	0.00	0.75
PAINTER	ALL	ALL		45.55	51.24	1.5	1.5	1.5	11.56	11.44	0.00	1.87
PAINTER SIGNS	ALL	BLD		37.45	42.05	1.5	1.5	2	2.60	3.18	0.00	0.00
PILEDRIVER	ALL	ALL		46.35	48.35	1.5	1.5	2	11.79	18.87	0.00	0.63
PIPEFITTER	ALL	BLD		47.50	50.50	1.5	1.5	2	9.55	17.85	0.00	2.07

PLASTERER	ALL	BLD		44.85	44.85	2	1.5	2	10.00	21.18	0.00	0.50
PLUMBER	ALL	BLD		49.25	52.20	1.5	1.5	2	14.34	13.35	0.00	1.28
ROOFER	ALL	BLD		42.30	45.30	1.5	1.5	2	9.08	12.14	0.00	0.58
SHEETMETAL WORKER	ALL	BLD		43.50	46.98	1.5	1.5	2	11.03	23.43	0.00	0.78
SIGN HANGER	ALL	BLD		31.31	33.81	1.5	1.5	2	4.85	3.28	0.00	0.00
SPRINKLER FITTER	ALL	BLD		47.20	49.20	1.5	1.5	2	12.25	11.55	0.00	0.55
STEEL ERECTOR	ALL	ALL		42.07	44.07	2	2	2	13.45	19.59	0.00	0.35
STONE MASON	ALL	BLD		45.38	49.92	1.5	1.5	2	10.45	16.68	0.00	0.90
TERRAZZO FINISHER	ALL	BLD		40.54	40.54	1.5	1.5	2	10.65	12.76	0.00	0.73
TERRAZZO MASON	ALL	BLD		44.38	47.88	1.5	1.5	2	10.65	14.15	0.00	0.82
TILE MASON	ALL	BLD		45.49	49.49	1.5	1.5	2	10.65	13.88	0.00	0.86
TRAFFIC SAFETY WRKR	ALL	HWY		32.75	34.35	1.5	1.5	2	8.45	6.05	0.00	0.50
TRUCK DRIVER	ALL	ALL	1	37.05	37.60	1.5	1.5	2	9.50	7.50	0.00	0.15
TRUCK DRIVER	ALL	ALL	2	37.20	37.60	1.5	1.5	2	9.50	7.50	0.00	0.15
TRUCK DRIVER	ALL	ALL	3	37.40	37.60	1.5	1.5	2	9.50	7.50	0.00	0.15
TRUCK DRIVER	ALL	ALL	4	37.60	37.60	1.5	1.5	2	9.50	7.50	0.00	0.15
TUCKPOINTER	ALL	BLD		45.42	46.42	1.5	1.5	2	8.32	15.42	0.00	0.80

Legend

M-F OT Unless otherwise noted, OT pay is required for any hour greater than 8 worked each day, Mon through Fri. The number listed is the multiple of the base wage.

OSA Overtime pay required for every hour worked on Saturdays

OSH Overtime pay required for every hour worked on Sundays and Holidays

H/W Health/Welfare benefit

Explanations LAKE COUNTY

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day and Veterans Day in some classifications/counties. Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration. If in doubt, please check with IDOL.

EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date.

ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

CERAMIC TILE FINISHER

The grouting, cleaning, and polishing of all classes of tile, whether for interior or exterior purposes, all burned, glazed or unglazed products; all composition materials, granite tiles, warning detectable tiles, cement tiles, epoxy composite materials, pavers, glass, mosaics, fiberglass, and all substitute materials, for tile made in tile-like units; all mixtures in tile like form of cement, metals, and other materials that are for and intended for use as a finished floor surface, stair treads, promenade roofs, walks, walls, ceilings, swimming pools, and all other places where tile is to form a finished interior or exterior. The mixing of all setting mortars including but not limited to thin-set mortars, epoxies, wall mud, and any other sand and cement mixtures or adhesives when used in the preparation, installation, repair, or maintenance of tile and/or similar materials. The handling and unloading of all sand, cement, lime, tile, fixtures, equipment, adhesives, or any other materials to be used in the preparation, installation, repair, or maintenance of tile and/or similar materials. Ceramic Tile Finishers shall fill all joints and voids regardless of method on all tile work, particularly and especially after installation of said tile work. Application of any and all protective coverings to all types of tile installations including, but not be limited to, all soap compounds, paper products, tapes, and all polyethylene coverings, plywood, masonite, cardboard, and any new type of products that may be used to protect tile installations, Blastrac equipment, and all floor scarifying equipment used in preparing floors to receive tile. The clean up and removal of all waste and materials. All demolition of existing tile floors and walls to be re-tiled.

COMMUNICATION TECHNICIAN

Low voltage construction, installation, maintenance and removal of telecommunication facilities (voice, sound, data and video) including outside plant, telephone, security systems and data inside wire, interconnect, terminal equipment, central offices, PABX, fiber optic cable and equipment, micro waves, V-SAT, bypass, CATV, WAN (wide area network), LAN (local area networks), and ISDN (integrated system digital network), pulling of wire in raceways, but not the installation of raceways.

MARBLE FINISHER

Loading and unloading trucks, distribution of all materials (all stone, sand, etc.), stocking of floors with material, performing all rigging for heavy work, the handling of all material that may be needed for the installation of such materials, building of scaffolding, polishing if needed, patching, waxing of material if damaged, pointing up, caulking, grouting and cleaning of marble, holding water on diamond or Carborundum blade or saw for setters cutting, use of tub saw or any other saw needed for preparation of material, drilling of holes for wires that anchor material set by setters, mixing up of molding plaster for installation of material, mixing up thin set for the installation of material, mixing up of sand to cement for the installation of material and such other work as may be required in helping a Marble Setter in the handling of all material in the erection or installation of interior marble, slate, travertine, art marble, serpentine, alberene stone, blue stone, granite and other stones (meaning as to stone any foreign or domestic materials as are specified and used in building interiors and exteriors and customarily known as stone in the trade), carrara, sanionyx, vitrolite and similar opaque glass and the laying of all marble tile, terrazzo tile, slate tile and precast tile, steps, risers treads, base, or any other materials that may be used as substitutes for any of the aforementioned materials and which are used on interior and exterior which are installed in a similar manner.

MATERIAL TESTER I: Hand coring and drilling for testing of materials; field inspection of uncured concrete and asphalt.

MATERIAL TESTER II: Field inspection of welds, structural steel, fireproofing, masonry, soil, facade, reinforcing steel, formwork, cured concrete, and concrete and asphalt batch plants; adjusting proportions of bituminous mixtures.

OPERATING ENGINEER - BUILDING

Class 1. Asphalt Plant; Asphalt Spreader; Autograde; Backhoes with Caisson Attachment; Batch Plant; Benoto (requires Two Engineers); Boiler and Throttle Valve; Caisson Rigs; Central Redi-Mix Plant; Combination Back Hoe Front End-loader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Conveyor (Truck Mounted); Concrete Paver Over 27E cu. ft; Concrete Paver 27E cu. ft. and Under: Concrete Placer; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes, All; Cranes, Hammerhead; Cranes, (GCI and similar Type); Creter Crane; Spider Crane; Crusher, Stone, etc.; Derricks, All; Derricks, Traveling; Formless Curb and Gutter Machine; Grader, Elevating; Grouting Machines; Heavy Duty Self-Propelled Transporter or Prime Mover; Highlift Shovels or Front Endloader 2-1/4 yd. and over; Hoists, Elevators, outside type rack and pinion and similar machines; Hoists, One, Two and Three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment); Locomotives, All; Motor Patrol; Lubrication Technician; Manipulators; Pile Drivers and Skid Rig; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram; Pump Cretes: Squeeze Cretes-Screw Type Pumps; Gypsum Bulker and Pump; Raised and Blind Hole Drill; Roto Mill Grinder; Scoops - Tractor Drawn; Slip-Form Paver; Straddle Buggies; Operation of Tie Back Machine; Tournapull; Tractor with Boom and Side Boom; Trenching Machines.

Class 2. Boilers; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Forklift Trucks; Highlift Shovels or Front Endloaders under 2-1/4 yd.; Hoists, Automatic; Hoists, Inside Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum;

Laser Screed; Rock Drill (Self-Propelled); Rock Drill (Truck Mounted); Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller; Winch Trucks with "A" Frame.

Class 3. Air Compressor; Combination Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators (remodeling or renovation work); Hydraulic Power Units (Pile Driving, Extracting, and Drilling); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Low Boys; Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 4. Bobcats and/or other Skid Steer Loaders; Oilers; and Brick Forklift.

Class 5. Assistant Craft Foreman.

Class 6. Gradall.

Class 7. Mechanics; Welders.

OPERATING ENGINEERS - HIGHWAY CONSTRUCTION

Class 1. Asphalt Plant; Asphalt Heater and Planer Combination; Asphalt Heater Scarfire; Asphalt Spreader; Autograder/GOMACO or other similar type machines: ABG Paver; Backhoes with Caisson Attachment; Ballast Regulator; Belt Loader; Caisson Rigs; Car Dumper; Central Redi-Mix Plant; Combination Backhoe Front Endloader Machine, (1 cu. yd. Backhoe Bucket or over or with attachments); Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver over 27E cu. ft.; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Tower Cranes of all types: Creter Crane: Spider Crane; Crusher, Stone, etc.; Derricks, All; Derrick Boats; Derricks, Traveling; Dredges; Elevators, Outside type Rack & Pinion and Similar Machines; Formless Curb and Gutter Machine; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver Truck Mounted; Hoists, One, Two and Three Drum; Heavy Duty Self-Propelled Transporter or Prime Mover; Hydraulic Backhoes; Backhoes with shear attachments up to 40' of boom reach; Lubrication Technician; Manipulators; Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill - Crawler or Skid Rig; Rock Drill - Truck Mounted; Rock/Track Tamper; Roto Mill Grinder; Slip-Form Paver; Snow Melters; Soil Test Drill Rig (Truck Mounted); Straddle Buggies; Hydraulic Telescoping Form (Tunnel); Operation of Tieback Machine; Tractor Drawn Belt Loader; Tractor Drawn Belt Loader (with attached pusher - two engineers); Tractor with Boom; Tractaire with Attachments; Traffic Barrier Transfer Machine; Trenching; Truck Mounted Concrete Pump with Boom; Raised or Blind Hole Drills (Tunnel Shaft); Underground Boring and/or Mining Machines 5 ft. in diameter and over tunnel, etc; Underground Boring and/or Mining Machines under 5 ft. in diameter; Wheel Excavator; Widener (APSCO).

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (Less than 1 cu. yd. Backhoe Bucket or over or with attachments); Compressor and Throttle Valve; Compressor, Common Receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S Series to and including 27 cu. ft.;

Concrete Spreader; Concrete Curing Machine, Burlap Machine, Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or Similar Type); Drills, All; Finishing Machine - Concrete; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All Attachments); Hydro-Blaster; Hydro Excavating (excluding hose work); Laser Screed; All Locomotives, Dinky; Off-Road Hauling Units (including articulating) Non Self-Loading Ejection Dump; Pump Cretes: Squeeze Cretes - Screw Type Pumps, Gypsum Bulker and Pump; Roller, Asphalt; Rotary Snow Plows; Rototiller, Seaman, etc., self-propelled; Self-Propelled Compactor; Spreader - Chip - Stone, etc.; Scraper - Single/Twin Engine/Push and Pull; Scraper - Prime Mover in Tandem (Regardless of Size); Tractors pulling attachments, Sheeps Foot, Disc, Compactor, etc.; Tug Boats.

Class 3. Boilers; Brooms, All Power Propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer (Two Bag and Over); Conveyor, Portable; Farm-Type Tractors Used for Mowing, Seeding, etc.; Forklift Trucks; Grouting Machine; Hoists, Automatic; Hoists, All Elevators; Hoists, Tugger Single Drum; Jeep Diggers; Low Boys; Pipe Jacking Machines; Post-Hole Digger; Power Saw, Concrete Power Driven; Pug Mills; Rollers, other than Asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with "A" Frame; Work Boats; Tamper-Form-Motor Driven.

Class 4. Air Compressor; Combination - Small Equipment Operator; Directional Boring Machine; Generators; Heaters, Mechanical; Hydraulic Power Unit (Pile Driving, Extracting, or Drilling); Light Plants, All (1 through 5); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Vacuum Trucks (excluding hose work); Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 5. SkidSteer Loader (all); Brick Forklifts; Oilers.

Class 6. Field Mechanics and Field Welders

Class 7. Dowell Machine with Air Compressor; Gradall and machines of like nature.

OPERATING ENGINEER - FLOATING

Class 1. Craft Foreman; Master Mechanic; Diver/Wet Tender; Engineer; Engineer (Hydraulic Dredge).

Class 2. Crane/Backhoe Operator; Boat Operator with towing endorsement; Mechanic/Welder; Assistant Engineer (Hydraulic Dredge); Leverman (Hydraulic Dredge); Diver Tender.

Class 3. Deck Equipment Operator, Machineryman, Maintenance of Crane (over 50 ton capacity) or Backhoe (115,000 lbs. or more); Tug/Launch Operator; Loader/Dozer and like equipment on Barge, Breakwater Wall, Slip/Dock, or Scow, Deck Machinery, etc.

Class 4. Deck Equipment Operator, Machineryman/Fireman (4 Equipment Units or More); Off Road Trucks; Deck Hand, Tug Engineer, Crane Maintenance (50 Ton Capacity and Under) or Backhoe Weighing (115,000 pounds or less); Assistant Tug Operator.

Class 5. Friction or Lattice Boom Cranes.

Class 6. ROV Pilot, ROV Tender

TRAFFIC SAFETY - work associated with barricades, horses and drums used to reduce lane usage on highway work, the installation and removal of temporary lane markings, and the installation and removal of temporary road signs.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION

Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors; Self-propelled Chip Spreader; Skipman; Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; Teamsters; Unskilled Dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

Class 2. Four axle trucks; Dump Crets and Adgetors under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-mix Plant Hopper Operator, and Winch Trucks, 2 Axles.

Class 3. Five axle trucks; Dump Crets and Adgetors 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnatrailers or turnapulls when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, 1-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long; Slurry trucks, 1-man operation; Winch trucks, 3 axles or more; Mechanic--Truck Welder and Truck Painter.

Class 4. Six axle trucks; Dual-purpose vehicles, such as mounted crane trucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front.

TERRAZZO FINISHER

The handling of sand, cement, marble chips, and all other materials that may be used by the Mosaic Terrazzo Mechanic, and the mixing, grinding, grouting, cleaning and sealing of all Marble, Mosaic, and Terrazzo work, floors, base, stairs, and wainscoting by hand or machine, and in addition, assisting and aiding Marble, Masonic, and Terrazzo Mechanics.

Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 217-782-1710 for wage rates or clarifications.

LANDSCAPING

Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape plantsman and landscape laborer is covered by the existing classification of laborer. The work performed by landscape operators (regardless of equipment used or its size) is covered by the classifications of operating engineer. The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the classifications of truck driver.

MATERIAL TESTER & MATERIAL TESTER/INSPECTOR I AND II

Notwithstanding the difference in the classification title, the classification entitled "Material Tester I" involves the same job duties as the classification entitled "Material Tester/Inspector I". Likewise, the classification entitled "Material Tester II" involves the same job duties as the classification entitled "Material Tester/Inspector II".

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Bond #1243111

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that Campanella & Sons, Inc., 39207 N. Magnetics Blvd., Wadsworth, Illinois 60083, as Principal, hereinafter called Contractor, and Cincinnati Insurance Company, 6200 S. Gilmore Road, Fairfield, Ohio 45014, as Surety, a corporation organized and existing under the laws of the State of Ohio, hereinafter called Surety, are held and firmly bound unto Lake County Forest Preserve District, 1899 West Winchester Road, Libertyville, Illinois 60048, as Obligee, hereinafter called Owner, in the full and just sum of $824,522.45 Dollars for the payment of which sum of money well and truly to be made, Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents, said amount to include payment of actual costs and damages and for attorneys' fees, architectural fees, design fees, engineering fees, accounting fees, testing fees, consulting fees, administrative costs, court costs, interest and any other fees and expenses resulting from or occurred by reason of Contractor's failure to promptly and faithfully perform its Contract with Owner, said Contract being more fully described below, and to include attorneys' fees, court costs and administrative and other expenses necessarily paid or incurred in successfully enforcing performance of the obligation of Surety under this bond.

WHEREAS, Contractor has entered into a written agreement dated February 27, 2018, with Owner entitled "Contract Between Lake County Forest Preserve District and Campanella & Sons, Inc., for PUBLIC ACCESS IMPROVEMENTS, ETHEL'S WOODS FOREST PRESERVE (the "Contract"), the terms and conditions of which are by this reference incorporated herein as though fully set forth herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT if Contractor shall well, truly, and promptly perform all the undertakings, covenants, terms, conditions and agreements of said Contractor under the Contract, including, but not limited to, Contractor's obligations under the Contract: (1) to provide, perform, and complete at the Work Site and in the manner specified in the Contract all necessary work, labor, services, transportation, equipment, materials, apparatus, machinery, tools, fuels, gas, electric, water, waste disposal, information, data and other means and items necessary for PUBLIC ACCESS IMPROVEMENTS, ETHEL'S WOODS FOREST PRESERVE; (2) to procure and furnish all permits, licenses and other governmental approvals and authorizations necessary in connection therewith except as otherwise expressly provided in the Supplemental Schedule of Contract Terms; (3) to procure and furnish all bonds, certificates and policies of insurance specified in the Contract; (4) to pay all applicable federal, state and local taxes; (5) to do all other things required of Contractor by the Contract; and (6) to provide, perform, and complete all of the foregoing in a proper and workmanlike manner and in full compliance with and as required by and pursuant to the Contract, all of which is herein referred to as the "Work," whether or not any of said Work enter into and become component parts of the improvement contemplated, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Surety, for value received, hereby stipulates and agrees that no changes, modifications, alterations, omissions, deletions, additions, extension of time or forbearance on the part of either Owner or Contractor to the other in or to the terms of said Contract; in or to the schedules, plans, drawings or specifications; in or to the method or manner of performance of the Work; in or to Owner-furnished facilities, equipment, materials, service or sites; or in or to the mode or manner of payment therefor, shall in any way release Contractor and Surety or either or any of them, or any of their heirs, executors, administrators, successors or assigns or affect the obligations of Surety on this bond, all notice of any and all of the foregoing changes, modifications, alterations, omissions, deletions, additions, extensions of time or forbearances, and notice of any and all defaults by Contractor or of Owner's termination of Contractor being hereby waived by Surety.

777Notwithstanding anything to the contrary in the foregoing paragraph, in no event shall the obligations of Surety under this bond, in the event of Contractor's default, be greater than the obligations of Contractor under the Contract in the absence of such Contractor default.

In the event of a default or defaults by Contractor, Owner shall have the right to take over and complete the Work upon thirty (30) calendar days' written notice to Surety, in which event Surety shall pay Owner all costs incurred by Owner in taking over and completing the Contract. At its option, Owner may instead request that Surety take over and complete the Contract, in which event Surety shall take reasonable steps to proceed promptly with completion no later than thirty (30) calendar days from the date on which Owner notifies Surety that Owner wants Surety to take over and complete the Contract.

Owner shall have no obligation to actually incur any expense or correct any deficient performance of Contractor to be entitled to receive the proceeds of this bond.

No right of action shall accrue on this bond to or for the use of any person or corporation other than Owner of the heirs, executors, administrators, or successors of Owner.

Signed and sealed this 16th day of February, ~~2017~~ 2018

Attest/Witness

By: Mary Kenar
Mary Kenar

Title: Executive Secretary/ Treasurer

PRINCIPAL: CAMPANELLA & SONS, INC.

By: Suzanne Zupec
Suzanne Zupec

Title: President

Attest/Witness

By: Kelley R Eccles

Title: Kelley R. Eccles/Attorney in Fact

SURETY: CINCINNATI INSURANCE COMPANY

By:

Title: Andrew J. Condon/Attorney in Fact

The Cincinnati Insurance Company CORPORATE SEAL OHIO

SEE GENERAL INSTRUCTIONS TO BIDDERS, SECTION 7
FOR SIGNATURE REQUIREMENTS

PUBLIC ACCESS IMPROVEMENTS
ETHEL'S WOODS FOREST PRESERVE
BID SPEC NUMBER: 18006

Bond #1243111

LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that Campanella & Sons, Inc., 39207 N. Magnetics Blvd., Wadsworth, Illinois 60083, as Principal, hereinafter called Contractor, and Cincinnati Insurance Company, 6200 S. Gilmore Road, Fairfield, Ohio 45014, as Surety, a corporation organized and existing under the laws of the State of Ohio, hereinafter called Surety, are held and firmly bound unto Lake County Forest Preserve District, 1899 West Winchester Road, Libertyville, Illinois 60048, as Obligee, hereinafter called Owner, for the use and benefit of itself and of claimants as hereinafter defined, in the full and just sum of $824,522.45 Dollars, to be paid to it or the said claimants or its or their assigns, to which payment well and truly to be made, Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents, said amount to include attorneys' fees, court costs, and administrative and other expenses necessarily paid or incurred in successfully enforcing performance of the obligation of Surety under this bond.

WHEREAS, Contractor has entered into a written agreement dated February 27, 2018 with Owner entitled "Contract Between Lake County Forest Preserve District and Campanella & Sons, Inc., for PUBLIC ACCESS IMPROVEMENTS, ETHEL'S WOODS FOREST PRESERVE (the "Contract"), the terms and conditions of which are by this reference incorporated herein as though full set forth herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT if Contractor shall promptly pay or cause to be paid all sums of money that may be due to any claimant with respect to Contractor's obligations under the Contract: (1) to provide, perform, and complete at the Work Site, and in the manner specified in the Contract, all necessary work, labor, services, transportation, equipment, materials, apparatus, machinery, tools, fuels, gas, electric, water, waste disposal, information, data and other means and items necessary for PUBLIC ACCESS IMPROVEMENTS, ETHEL'S WOODS FOREST PRESERVE; (2) to procure and furnish all permits licenses and other governmental approvals and authorizations necessary in connection therewith except as otherwise expressly provided in the Supplemental Schedule of Contract Terms; (3) to procure and furnish all bonds, certificates and policies of insurance specified in the Contract; (4) to pay all applicable federal, state and local taxes; (5) to do all other things required of Contractor by the Contract; and (6) to provide, perform, and complete all of the foregoing in a proper and workmanlike manner and in full compliance with and as required by and pursuant to the Contract, all of which is herein referred to as the "Work," whether or not any of said work enter into and become component parts of the improvement contemplated, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

For purpose of this bond, a claimant is defined as one having a direct contract with Contractor or with a subcontractor of Contractor to provide, perform, or complete any part of the Work.

Contractor and Surety hereby jointly and severally agree that every claimant who has not had all just claims for the furnishing of any part of the Work paid in full, including, without limitation, all claims for amounts due for materials, lubricants, oil, gasoline, rentals of, or service or repairs on, machinery, equipment, and tools consumed or used in connection with the furnishing of any part of the Work, may sue on this bond for the use of such claimant, may prosecute the suit to final judgment for such sum or sums as may be justly due such claimant, and may have execution therein; provided, however, that Owner shall not be liable for the payment of any costs or expenses of any such suit. The provisions of 30 ILCS 550/1 and 30 ILCS 550/2 shall be deemed inserted herein, including the time limits within which notices of claim must be filed and actions brought under this bond.

Contractor and Surety hereby jointly agree that Owner may sue on this bond if Owner is held liable to or voluntarily agrees to pay any claimant directly, but nothing in this bond shall create any duty on the part of Owner to pay any claimant.

Surety, for value received, hereby stipulates and agrees that no changes, modifications, alterations, omissions, deletions, additions, extensions of time or forbearance on the part of Owner or Contractor to the other in or to the terms of said Contract; in or to the schedules, plans, drawings or specifications; in or to the method or manner of performance of the Work; in or to Owner-furnished facilities, equipment, material, services or sites; or in or to the mode or manner of payment therefor shall in any way release Contractor and Surety or either or any of them, or any of their heirs, executors, administrators, successors or assigns, or affect the obligations of said Surety on this bond, all notice of any and all of the foregoing changes, modifications, alterations, omissions, deletions, additions, extensions of time or forbearances and notice of any and all defaults by Contractor or of Owner's termination of Contractor being hereby waived by Surety.

Signed and sealed this 16th day of February, 2017 2018

Attest/Witness

By: Mary Kenar
Mary Kenar

Title: Executive Secretary/ Treasurer

PRINCIPAL: CAMPANELLA & SONS, INC.

By: Suzanne Zupec
Suzanne Zupec

Title: President

Attest/Witness

By: Kelley R. Eccles

Title: Kelley R. Eccles/Attorney in Fact

SURETY: CINCINNATI INSURANCE COMPANY

By: Andrew J. Condon

Title: Andrew J. Condon/Attorney in Fact

The Cincinnati Insurance Company CORPORATE SEAL OHIO

SEE GENERAL INSTRUCTIONS TO BIDDERS, SECTION 7
FOR SIGNATURE REQUIREMENTS

THE CINCINNATI INSURANCE COMPANY

Fairfield, Ohio

Bond #1243111

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That THE CINCINNATI INSURANCE COMPANY, a corporation organized under the laws of the State of Ohio, and having its principal office in the City of Fairfield, Ohio, does hereby constitute and appoint

James W. Leech; Michael K. Best; Kelley R. Eccles; Andrew J. Condon and/or Amber D. Schultz

of Zion, Illinois its true and lawful Attorney(s)-in-Fact to sign, execute, seal and deliver on its behalf as Surety, and as its act and deed, any and all bonds, policies, undertakings, or other like instruments, as follows:

Any such obligations in the United States, up to
Fifteen Million and No/100 Dollars ($15,000,000.00).

This appointment is made under and by authority of the following resolution passed by the Board of Directors of said Company at a meeting held in the principal office of the Company, a quorum being present and voting, on the 6th day of December, 1958, which resolution is still in effect:

"RESOLVED, that the President or any Vice President be hereby authorized, and empowered to appoint Attorneys-in-Fact of the Company to execute any and all bonds, policies, undertakings, or other like instruments on behalf of the Corporation, and may authorize any officer or any such Attorney-in-Fact to affix the corporate seal; and may with or without cause modify or revoke any such appointment or authority. Any such writings so executed by such Attorneys-in-Fact shall be binding upon the Company as if they had been duly executed and acknowledged by the regularly elected officers of the Company."

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company at a meeting duly called and held on the 7th day of December, 1973.

"RESOLVED, that the signature of the President or a Vice President and the seal of the Company may be affixed by facsimile on any power of attorney granted, and the signature of the Secretary or Assistant Secretary and the seal of the Company may be affixed by facsimile to any certificate of any such power and any such power of certificate bearing such facsimile signature and seal shall be valid and binding on the Company. Any such power so executed and sealed and certified by certificate so executed and sealed shall, with respect to any bond or undertaking to which it is attached, continue to be valid and binding on the Company."

IN WITNESS WHEREOF, THE CINCINNATI INSURANCE COMPANY has caused these presents to be sealed with its corporate seal, duly attested by its Vice President this 8th day of March, 2017.

The Cincinnati Insurance Company CORPORATE SEAL OHIO

THE CINCINNATI INSURANCE COMPANY

Stephen A. [illegible]

Vice President

STATE OF OHIO) ss:
COUNTY OF BUTLER)

On this 8th day of March, 2017, before me came the above-named Vice President of THE CINCINNATI INSURANCE COMPANY, to me personally known to be the officer described herein, and acknowledged that the seal affixed to the preceding instrument is the corporate seal of said Company and the corporate seal and the signature of the officer were duly affixed and subscribed to said instrument by the authority and direction of said corporation.

NOTARIAL SEAL STATE OF OHIO

Mark J. Huller

MARK J. HULLER, Attorney at Law
NOTARY PUBLIC - STATE OF OHIO
My commission has no expiration date. Section 147.03 O.R.C.

I, the undersigned Secretary or Assistant Secretary of THE CINCINNATI INSURANCE COMPANY, hereby certify that the above is a true and correct copy of the Original Power of Attorney issued by said Company, and do hereby further certify that the said Power of Attorney is still in full force and effect.

GIVEN under my hand and seal of said Company at Fairfield, Ohio.
this 16th day of February, 2017 .

The Cincinnati Insurance Company CORPORATE SEAL OHIO

Steven D. [illegible]

Secretary

BN-1005 (3/17)

Purchasing Department
1899 West Winchester Road Libertyville, Illinois 60048 Telephone 847-367-6640 Fax 847-367-6645

LAKE COUNTY FOREST PRESERVES

Preservation, Restoration, Education and Recreation

DATE: December 6, 2017

ADDENDUM NO. 1

INVITATION FOR BID NO. 18006

PROJECT: Public access Improvements – Ethel's Woods Forest Preserve

BID OPENING DATE: December 19, 2017

BID OPENING TIME: 10:00 a.m. CST

Please note the following clarifications, revisions, and additions to the bid documents:

1. See attached for the meeting minutes from the Non-Mandatory Pre-Bid Conference.
2. See attached for the attendance sheet from the Non-Mandatory Pre-Bid Conference.
3. QUESTION: During the Pre-Bid Conference held on 12/5/17 it was discussed per the marked up drawing that the attached area circled in RED potentially will need to be graded by the contractor of this contract Bid #18006. We are requesting a further clarification on grading scope of this particular area as discussed during the Pre-Bid Conference.

   ANSWER: See attached sheet for a correction to the marked-up drawing submitted for question. The area circled in RED is a temporary crossing. The area that potentially will need to be graded is circled in yellow on the plan. See the callout on Sheet No. 12, located between stations 163 + 164 for the area and respective topography. The current slope is too abrupt for truck travel and may need to be adjusted to accommodate truck travel for the channel restoration haul route.
4. A non-mandatory site visit has been scheduled for Friday, December 8 beginning at 10:00 a.m. Those interested in attending should meet inside the construction entrance on Highway 45, north of Miller Road. This is an undeveloped access route not suitable for passenger vehicles. Passenger vehicles may park on the shoulder of MILLER ROAD – do not park on Highway 45. This is an active construction site; appropriate PPE should be worn.

Please **sign** this form and **return original** with your **bid**.

Sincerely,

Christine F. Miller

Christine F. Miller
Purchasing Manager

Acknowledged and Accepted:

Signature: _____

Company: Campanella & Sons, Inc.

_____

Purchasing Department
1899 West Winchester Road Libertyville, Illinois 60048 Telephone 847-367-6640 Fax 847-367-6645

LAKE COUNTY FOREST PRESERVES

Preservation, Restoration, Education and Recreation

DATE: December 13, 2017

ADDENDUM NO. 2

INVITATION FOR BID NO. 18006

PROJECT: Public Access Improvements – Ethel's Woods Forest Preserve

BID OPENING DATE: December 19, 2017

BID OPENING TIME: 10:00 a.m.

Please note the following clarifications, revisions, and additions to the bid documents:

1. QUESTION: The contour file provided by the engineer seems to be corrupt.

   ANSWER: The files are located at the following link (see Addenda No. 1)
   https://civiltechftp.exavault.com/share/view/2116-b7qxvm4u

   The Contours_Ex.dgn file is an updated version replacing the old copy with the same name.
   The Jorgensen_Svy.tin file is the existing ground TIN as provided by the surveyor.

2. QUESTION: The proposed path profile on Sheets 9, 13, 14, 15, and 16 indicate areas of Excavation Of Unsuitable Materials at depths between 3' and 6' depth below the proposed profile. Is the intent in these areas to excavate to those depths to expose this material to determine if the material needs to be removed and replaced and/or the depth of undercut needed in these areas. Answer to Question j) did not indicate over excavation to these depths to determine in the field if the material is unsuitable, then re-filling, discing, and compacting these areas to meet the proposed subgrade.

   ANSWER: Refer to Addendum #1 – Meeting Minutes – 8) Questions:

   > *"j) QUESTION: Do you know where the undercut areas are and where the unsuitable disposal will be? ANSWER: Excavation of unsuitable materials will be determined in the field during construction. Refer to Specification Section 03110, 3.03. Base Bid Item B3 is provided as contingency as needed. A disposal location will be designated on site."*

   In addition, disregard the callout, "EXCAVATION OF UNSUITABLE MATERIALS", indicated in the profiles on drawing sheets: 9, 10, 13, 14, 15, and 16. No over-excavation will be needed, unless identified in the field.

3. QUESTION: Can excess topsoil be used as fill in non-structural areas (1:1 slope from edge of gravel on trails and parking lot)?

   ANSWER: Yes, topsoil can be used as non-structural fill. The respread depth indicated in the details refers to a <u>minimum</u> 4" depth.

Purchasing Department
1899 West Winchester Road Libertyville, Illinois 60048 Telephone 847-367-6640 Fax 847-367-6645

4. QUESTION: What size pipe is required at the temporary crossings?

   ANSWER: Pipe size is left to the discretion of the contractor's judgment in evaluating the crossing location and installing a pipe that will maintain adequate flow for the duration of the temporary crossing.

Please **sign** this form and **return original** with your **bid**.

Sincerely,

Christine F. Miller

Christine F. Miller
Purchasing Manager

Acknowledged and Accepted:

Signature: Mary Bruno

Company: Campanella & Sons, Inc.

CAMPA-1 OP ID: AC

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 02/21/2018

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Leech Bridges, Inc. 1717 Lewis Avenue Zion, IL 60099 James W. Leech	CONTACT NAME: James W. Leech PHONE (A/C, No, Ext): 847-872-4982 FAX (A/C, No): 847-872-2528 E-MAIL ADDRESS:
INSURED Campanella & Sons, Inc. P.O. Box 32 39207 North Magnetics Blvd Wadsworth, IL 60083	INSURER(S) AFFORDING COVERAGE / NAIC # INSURER A : BITCO INSURER B : QBE Specialty INSURER C : INSURER D : INSURER E : INSURER F :

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	GENERAL LIABILITY X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR	X		CLP 3650334	03/01/2017	03/01/2018	EACH OCCURRENCE	$ 1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 100,000
							MED EXP (Any one person)	$ 10,000
A	X OCP			CLP 3650334	03/01/2017	03/01/2018	PERSONAL & ADV INJURY	$ 1,000,000
							GENERAL AGGREGATE	$ 2,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 2,000,000
							OCP	$ 1,000,000
A	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS / SCHEDULED AUTOS HIRED AUTOS / NON-OWNED AUTOS			CAP 3650338	03/01/2017	03/01/2018	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
							BODILY INJURY (Per person)	$
							BODILY INJURY (Per accident)	$
							PROPERTY DAMAGE (PER ACCIDENT)	$
								$
B	X UMBRELLA LIAB X OCCUR X EXCESS LIAB CLAIMS-MADE DED RETENTION $	X		MQSX00005527-01	03/01/2017	03/01/2018	EACH OCCURRENCE	$ 8,000,000
							AGGREGATE	$ 8,000,000
								$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N: N If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		WC 3650332	03/01/2017	03/01/2018	X WC STATU-TORY LIMITS OTH-ER	
							E.L. EACH ACCIDENT	$ 1,000,000
							E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000
A	Builders Risk	X		CLP 3650334	03/01/2017	03/01/2018	Builders Risk	824,522

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

ETHEL'S WOODS FOREST PRESERVE
40345 N. Highway 45
Antioch, Illinois 60002
Lake County Forest Preserve District (Owner) and Civiltech Engineering, Inc. (Engineer) are listed as Additional Insured.

CERTIFICATE HOLDER

Lake County Forest
Preserve District
1899 West Winchester Rd.
Libertyville, IL 60048

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

J. W. Leech