

SECTION 00 01 10

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SECTION 00 22 00

GENERAL PROJECT REQUIREMENTS

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
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1.02 SUMMARY OF THE WORK

- A. The Work to be performed under this Contract consists of the complete construction of streambank stabilization and pond enhancements at Community Park, located in Mundelein, Illinois, in accordance with the Plans, Contract Documents and Specifications contained in the Contract. The Work shall also meet the requirements of all permitting agencies. The Work generally includes, but is not limited to streambank stabilization with rock and other natural materials, and installation of native vegetation along the shoreline of an existing pond.
- 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 the 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 their 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 their expense, all required governmental permits as described in Attachment F 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 their 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 provisions 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 otherwise specifically stated. Said component parts are the following:
1. Plans and Addenda to the Plans
 2. Addendum to the Specifications
 4. Specifications
- D. All work shall conform to the following Standard Specifications:
1. "Standard Specifications for Road and Bridge Construction" published by the Illinois Department of Transportation, adopted April 1, 2016 and Supplemental Specifications published by the Illinois Department of Transportation on or before the date of bid opening, hereinafter referred to as the "IDOT Standard Specifications."
 2. "Illinois Urban Manual," latest edition as prepared for the Illinois Environmental Protection Agency by the NRCS.
 3. Lake County Stormwater Management Commission (LCSMC) soil erosion and sediment control requirements.
- 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. AASHTO - American Association of State Highway and Transportation Officials
 - b. ANSI - American National Standard Institute
 - c. ASTM - American Society for Testing and Materials
 - d. FS - Federal Specifications

- e. OSHA - U.S. Department of Labor, Occupational Safety and Health Administration
- f. PS - United States Products Standards
- g. STD.SPEC. - Applicable State Department of Transportation Standard Specifications for Road and Bridge Construction
- h. 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 being rejected and all related payment denied.
- B. The Owner or Engineer shall provide staked control points at various locations throughout the site. Any additional transfer of control points and layout of points, lines and grades required to construct the Work shall be the responsibility of the Contractor. The Contractor shall be responsible for maintaining all layout and staking and shall replace all marks and stakes when required.
- 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 will be quantified, inspected and approved by the Owner. Final payment will 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 their surety.
- C. Special attention is drawn to Article 105.06 of the IDOT Standard Specifications, which requires the Contractor to have a competent English speaking 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 of 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 of 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 their work, in accordance with the Contract.
- F. The Contractor shall indemnify the Engineer, their agents, the Owner and its 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 their expense and replaced with acceptable material unless permitted otherwise by the Owner. No defective materials that have been subsequently corrected shall be reused unless prior 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 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 illustrate 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 the 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 and accepted.
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 00 22 00

SECTION 01 22 00

MEASUREMENT AND PAYMENT

1. GENERAL

1.01 DESCRIPTION

- A. 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 01 22 00. 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.
- B. 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.
- C. 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.
- D. All measurement and payment provisions of the IDOT Standard Specifications are deleted.
- E. 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 Values.

2. MEASUREMENT AND PAYMENT

2.01 MOBILIZATION, TEMPORARY SITE ACCESS AND FACILITIES

- 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 01 50 00. Any costs associated with required bonds shall be paid for under this Pay Item.
- B. Payment
 - 1. This work shall be paid for at the contract unit price per Lump Sum (LS) for MOBILIZATION, TEMPORARY SITE ACCESS AND FACILITIES.

2.02 MISCELLANEOUS EROSION CONTROL

- A. Measurement
 - 1. This work shall not be measured for payment but will be considered complete upon final approval by the Owner, as described in the Contract Documents and as required by the applicable soil erosion sediment control permits, regulations and industry standards. This item includes

DECI required services. Specific requirements are noted on the plans and in Section 31 25 00 of the specifications.

B. Payment

1. This work shall be paid for at the contract unit price per Lump Sum (LS) for MISCELLANEOUS EROSION CONTROL.

2.03 COMPOST FILTER BERM

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 31 25 00. This pay item may be listed multiple times in the Schedule of Values. Full payment shall not be made until the Owners' final approval of the removed compost filter berm and restoration of the work areas.

B. Payment

1. This work shall be paid for at the contract unit price per Lineal Foot (LF) for COMPOST FILTER BERM.

2.04 WATER MANAGEMENT

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. Specific requirements are noted on the plans and in Section 31 25 00 of the specifications.

B. Payment

1. This work shall be paid for at the contract unit price per Lump Sum (LS) for WATER MANAGEMENT.

2.05 FLOATING SILT CURTAIN

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 31 25 00. Full payment will not be made until the Owners' final approval of the removed floating silt curtain barrier and restoration of the work areas.

B. Payment

1. This work shall be paid for at the contract unit price per Lineal Feet (LF) for FLOATING SILT CURTAIN.

2.06 SITE CLEARING AND VEGETATION REMOVAL

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. Specific requirements are noted on the plans and in Section 31 10 00 of the specifications.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard (SY) for SITE CLEARING AND VEGETATION REMOVAL.

2.07 SITE GRADING

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. This work includes any excavation, hauling and placement of earthen materials not specified in any other pay item. Specifications are included in Section 31 22 00.

B. Payment

1. This work shall be paid for at the contract unit price per Lump Sum (LS) for SITE GRADING.

2.08 EMBANKMENT OVERFLOW ENERGY DISSIPATION AND GRADE CONTROL LOCATION 1 (COMPLETE) – (40 SY)

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. This work includes the supply (where applicable), transfer (where applicable) and installation of stone as outlined in Article 1.01 of Specification Section 31 37 00 and any other incidental work required to construct this item to the lines and grades shown on the plans.

B. Payment

1. This work shall be paid for at the contract unit price per Lump Sum (LS) for EMBANKMENT OVERFLOW ENERGY DISSIPATION AND GRADE CONTROL LOCATION 1 (COMPLETE) – (40 SY).

2.09 IN-STREAM ENERGY DISSIPATION AND GRADE CONTROL LOCATION 1 (COMPLETE) – (15 SY)

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. This work includes the supply (where applicable), transfer (where applicable) and installation of stone as outlined in Article 1.01 of Specification Section 31 37 00 and any other incidental work required to construct this item to the lines and grades shown on the plans.

B. Payment

1. This work shall be paid for at the contract unit price per Lump Sum (LS) for IN-STREAM ENERGY DISSIPATION AND GRADE CONTROL LOCATION 1 (COMPLETE) – (15 SY)
- 2.10 IN-STREAM ENERGY DISSIPATION AND GRADE CONTROL LOCATION 2 (COMPLETE) – (4 SY)
- 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. This work includes the supply (where applicable), transfer (where applicable) and installation of stone as outlined in Article 1.01 of Specification Section 31 37 00 and any other incidental work required to construct this item to the lines and grades shown on the plans.
 - B. Payment
 1. This work shall be paid for at the contract unit price per Lump Sum (LS) for EMBANKMENT OVERFLOW ENERGY DISSIPATION AND GRADE CONTROL LOCATION 2 (COMPLETE) – (4 SY).
- 2.11 STORM SEWER ENERGY DISSIPATION AND GRADE CONTROL LOCATION 1 (COMPLETE) – (15 SY)
- 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. This work includes the supply (where applicable), transfer (where applicable) and installation of stone as outlined in Article 1.01 of Specification Section 31 37 00 and any other incidental work required to construct this item to the lines and grades shown on the plans.
 - B. Payment
 1. This work shall be paid for at the contract unit price per Lump Sum (LS) for EMBANKMENT OVERFLOW ENERGY DISSIPATION AND GRADE CONTROL LOCATION 1 (COMPLETE) – (15 SY).
- 2.12 STORM SEWER ENERGY DISSIPATION AND GRADE CONTROL LOCATION 2 (COMPLETE) – (21 SY)
- 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. This work includes the supply (where applicable), transfer (where applicable) and installation of stone as outlined in Article 1.01 of Specification Section 31 37 00 and any other incidental work required to construct this item to the lines and grades shown on the plans.
 - B. Payment
 1. This work shall be paid for at the contract unit price per Lump Sum (LS) for EMBANKMENT OVERFLOW ENERGY DISSIPATION AND GRADE CONTROL LOCATION 2 (COMPLETE) – (21 SY).

2.13 STREAMBANK STABILIZATION LOCATION 1 (COMPLETE) – (25 LF)

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. This work includes the supply (where applicable), transfer (where applicable) and installation of stone as outlined in Article 1.01 of Specification Section 31 37 00 and any other incidental work required to construct this item to the lines and grades shown on the plans.

B. Payment

1. This work shall be paid for at the contract unit price per Lump Sum (LS) for STREAMBANK STABILIZATION LOCATION 1 (COMPLETE) – (25 LF)

2.14 STREAMBANK STABILIZATION LOCATION 2 (COMPLETE) – (60 LF)

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. This work includes the supply (where applicable), transfer (where applicable) and installation of stone as outlined in Article 1.01 of Specification Section 31 37 00 and any other incidental work required to construct this item to the lines and grades shown on the plans.

B. Payment

1. This work shall be paid for at the contract unit price per Lump Sum (LS) for STREAMBANK STABILIZATION LOCATION 2 (COMPLETE) – (60 LF)

2.15 STREAMBANK STABILIZATION LOCATION 3 (COMPLETE) – (65 LF)

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. This work includes the supply (where applicable), transfer (where applicable) and installation of stone as outlined in Article 1.01 of Specification Section 31 37 00 and any other incidental work required to construct this item to the lines and grades shown on the plans.

B. Payment

1. This work shall be paid for at the contract unit price per Lump Sum (LS) for STREAMBANK STABILIZATION LOCATION 3 (COMPLETE) – (65 LF)

2.16 STREAMBANK STABILIZATION LOCATION 4 (COMPLETE) – (30 LF)

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. This work includes the supply (where applicable), transfer (where applicable) and installation of stone as outlined in Article 1.01 of Specification Section 31 37 00 and any other incidental work required to construct this item to the lines and grades shown on the plans.

B. Payment

1. This work shall be paid for at the contract unit price per Lump Sum (LS) for STREAMBANK STABILIZATION LOCATION 4 (COMPLETE) – (30 LF).

2.17 STREAMBANK STABILIZATION LOCATION 5 (COMPLETE) – (20 LF)

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. This work includes the supply (where applicable), transfer (where applicable) and installation of stone as outlined in Article 1.01 of Specification Section 31 37 00 and any other incidental work required to construct this item to the lines and grades shown on the plans.

B. Payment

1. This work shall be paid for at the contract unit price per Lump Sum (LS) for STREAMBANK STABILIZATION LOCATION 5 (COMPLETE) – (20 LF)

2.18 STREAMBANK STABILIZATION LOCATION 6A (COMPLETE) – (20 LF)

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. This work includes the supply (where applicable), transfer (where applicable) and installation of stone as outlined in Article 1.01 of Specification Section 31 37 00 and any other incidental work required to construct this item to the lines and grades shown on the plans.

B. Payment

1. This work shall be paid for at the contract unit price per Lump Sum (LS) for STREAMBANK STABILIZATION LOCATION 6A (COMPLETE) – (20 LF).

2.19 STREAMBANK STABILIZATION LOCATION 6B (COMPLETE) – (30 LF)

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. This work includes the supply (where applicable), transfer (where applicable) and installation of stone as outlined in Article 1.01 of Specification Section 31 37 00 and any other incidental work required to construct this item to the lines and grades shown on the plans.

B. Payment

1. This work shall be paid for at the contract unit price Lump Sum (LS) for STREAMBANK STABILIZATION LOCATION 6A (COMPLETE) – (30 LF).

2.20 LWD STABILIZATION (COMPLETE)

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. This work includes the installation of large woody debris (LWD) from Owner Supply to the lines and grades shown on the plans.

B. Payment

1. This work shall be paid for at the contract unit price Lineal Feet (LF) for LWD STABILIZATION (COMPLETE)

2.21 OVERLOOK 1 (COMPLETE)

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. This work includes the supply (where applicable), transfer (where applicable) and installation of stone as outlined in Article 1.01 of Specification Section 31 37 00 and any other incidental work required to construct this item to the lines and grades shown on the plans.

B. Payment

1. This work shall be paid for at the contract unit price Lineal Feet (LF) for OVERLOOK 1 (COMPLETE)

2.22 OVERLOOK 2 (COMPLETE)

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. This work includes the supply (where applicable), transfer (where applicable) and installation of stone as outlined in Article 1.01 of Specification Section 31 37 00 and any other incidental work required to construct this item to the lines and grades shown on the plans.

B. Payment

1. This work shall be paid for at the contract unit price Lineal Feet (LF) for OVERLOOK 2 (COMPLETE)

2.23 OVERLOOK 3 (COMPLETE)

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.

This work includes the supply (where applicable), transfer (where applicable) and installation of stone as outlined in Article 1.01 of Specification Section 31 37 00 and any other incidental work required to construct this item to the lines and grades shown on the plans.

B. Payment

1. This work shall be paid for at the contract unit price Lineal Feet (LF) for OVERLOOK 3 (COMPLETE)

2.24 FINISH GRADING

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 31 22 19.

B. Payment

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

2.25 SEEDING, TURFGRASS

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. This pay item may be listed multiple times in the Schedule of Values. Specifications are included in Section 32 92 00.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard (SY) for SEEDING, TURFGRASS.

2.26 SEEDING, NATIVE MIX – TYPE 1

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. This pay item may be listed multiple times in the Schedule of Values. Specifications are included in Section 32 92 00.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard (SY) for SEEDING, NATIVE MIX – TYPE 1.

2.27 SEEDING, NATIVE MIX – TYPE 2

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.

This pay item may be listed multiple times in the Schedule of Values.
Specifications are included in Section 32 92 00.

B. Payment

1. This work shall be paid for at the contract unit price per Square Yard (SY) for SEEDING – NATIVE MIX - TYPE 2

2.28 PLANTING – TYPE 1

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. Different species are included within this pay item in the Schedule of Values. Specifications are included in Section 32 93 00.

B. Payment

1. This work shall be paid for at the contract unit price per Each (EA) for PLANTING – TYPE 1.

2.29 EROSION CONTROL BLANKET

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 32 92 00.

B. Payment

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

END OF SECTION 01 29 00

SECTION 01 50 00

TEMPORARY SITE ACCESS AND FACILITIES

1. **GENERAL**

1.01 DESCRIPTION

- A. Work under this Section includes:
 - 1. Temporary site access and facilities.
- B. Other specification sections which directly relate to the work of this section include, but are not limited to, the following:
 - 1. Section 01 55 26 – Temporary Traffic Control
 - 2. Section 01 57 00 – Site and Natural Resource Protection
 - 3. Section 31 25 00 – Soil Erosion and Sediment Control
 - 4. Section 31 22 19 – Finish Grading and Topsoil
 - 5. Section 32 92 00 – Seeding
- C. The Contractor shall, at their sole expense, procure and furnish all bonds required by other agencies and jurisdictions in order to access the work site.

2. **PRODUCTS**

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 or other on-site direction 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 the 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 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.

3.04 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 31 22 19 – Finish Grading and Topsoil and 32 92 00 – Seeding and measured for payment.

END OF SECTION 01 50 00

SECTION 01 57 00

SITE AND NATURAL RESOURCE PROTECTION

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 31 25 00 – Soil Erosion and Sediment Control
 - 2. Section 31 10 00 – Site Clearing and Vegetation Removal
 - 3. Section 31 22 00 – Site Grading
 - 4. Section 31 22 19 – Finish Grading and Topsoil

2. PRODUCTS

2.01 TEMPORARY CONSTRUCTION FENCING

- A. Fencing shall be heavy duty orange polyethylene snow fence, 48" in height. Steel posts shall be heavy duty "T" posts, minimum 5' in length.

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 01 50 00 – 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 interior roads, parking areas, and public 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 interior roads and parking areas, and public 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 FENCING

- A. The Contractor shall erect the temporary construction fence 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 with plastic ties 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 RESOURCE PROTECTION ZONES

- A. Areas outside of the primary construction zone which are separated by temporary construction fence are designated as Natural Resource Protection Zones. These areas contain trees, vegetation, soils and/or other sensitive natural 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 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 or pruner so that ripping or tearing is avoided.

3.09 NATURAL RESOURCE DAMAGE OR LOSS AND OWNERS' COMPENSATION

- A. The Contractor shall be liable for any damage or loss of any natural resource, including, but not limited to, trees, shrubs, herbaceous plants, soils, wetlands, streams, rivers, lakes, ponds 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 01 57 00

SECTION 31 10 00

SITE CLEARING AND VEGETATION REMOVAL

1. **GENERAL**

1.01 DESCRIPTION

- A. Work under this section includes:
 - 1. Removal of vegetation and in-channel debris jams required to construct the Work.
- B. Other specification sections which directly relate to the work of this section include, but are not limited to, the following:
 - 1. Section 01 57 00 – Site and Natural Resource Protection
 - 2. Section 31 25 00 – Soil Erosion and Sediment Control

1.02 PREBID AND PRECONSTRUCTION REVIEW

- A. General information regarding the location and extent of site clearing and vegetation removal requirements is shown on the Plans. However, it is imperative that the Contractor and clearing personnel conduct a thorough site inspection with the Owner to determine the exact scope, location, limitations and preferred clearing techniques for the Work. It is the desire of the Owner to only remove those native trees and other types of vegetation necessary to construct the project safely and successfully. The final determination of the extent of clearing required, the preservation of specific trees and plants and the manner in which trees and other plants shall be marked for removal or preservation will be made in the field by the Owner and communicated to the Contractor and clearing foreman.

2. **PRODUCTS – Not Used**

2.01 HERBICIDES

- A. Woody tree and brush stumps to remain:
 - 1. Stumps occurring outside of the limits of wetlands shall preferentially be treated with triclopyr, trade name Garlon 4 or approved equal, using methylated seed oil as a carrier. The use of diesel, fuel oil, and kerosene will not be permitted.
 - 2. The stumps of species not controlled by triclopyr, stumps occurring within the limits of wetlands, and all stump resprouts shall be treated with glyphosate in a form labeled for use in wetlands and over open water, trade name AquaMaster or approved equal.
- B. Pre-seeding treatment:
 - 1. Existing vegetation occurring within areas to be seeded shall be treated with glyphosate in a form labeled for use in wetlands and over open water, trade name AquaMaster or approved equal.

3. **EXECUTION**

3.01 GENERAL

- A. Areas to be cleared are indicated on the Plans. Refer to the notes, dimensions and other instructions to determine area quantities. A partial tree survey may be shown on the plans, but no species list or tree size range is provided by the Owner. The Contractor shall determine the extent of work during the site inspection described above.
- B. Absolutely no site clearing or vegetation removal shall begin until the preconstruction site meeting is conducted between the Owner, Contractor and designated clearing foreman. Before commencement of work, any required construction layout and staking which affects the clearing work shall be performed.
- C. All work must be conducted under the direct supervision of the original designated clearing foreman.
- D. During the performance of the clearing 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.
- E. After the site clearing and vegetation removal has been completed according to the conditions determined at the preconstruction site meeting, the Owner and Contractor shall meet for a final review of the work area as it affects subsequent construction. During subsequent construction of the project, if the Contractor determines that any additional vegetation removal is required, it shall be the sole responsibility of the Contractor to perform such work at no additional cost to the Owner.

3.02 CLEARING SEQUENCE

- A. Clear all areas as designated on the Plans.
- B. Removal all cut material for the work site unless otherwise indicated.

3.03 HERBICIDE APPLICATION

- A. The stumps of all woody trees and shrubs that remain after removal shall be treated with an appropriate herbicide within 24 hours of cutting.
 - 1. Apply herbicide directly to cut stump. Avoid damages to neighboring non-target vegetation. Follow manufacturer's label directions at all times.
- B. Areas to be seeded shall be treated with herbicide prior to seeding.
 - 1. Avoid damages to non-target vegetation. Follow manufacturer's label directions at all times. Apply herbicide a minimum of 10 calendar days prior to removing existing vegetation. If after 10 days the herbicide application was unsuccessful in controlling the existing vegetation as determined by the Owner, the Contractor must reapply and wait a minimum of 10 additional days.

END OF SECTION 31 10 00

SECTION 31 22 00

SITE GRADING

1. **GENERAL**

1.01 DESCRIPTION

- A. Work under this Section includes:
1. All mass earthwork and rough grading for pavements, structures and landscape areas.
- B. Other specification sections which may directly relate to the Work in this section include, but are not limited to the following:
1. Section 01 57 00 – Site and Natural Resource Protection
 2. Section 31 25 00 – Soil Erosion and Sediment Control
 3. Section 31 10 00 – Site Clearing and Vegetation Removal

2. **PRODUCTS**

2.01 SUITABLE ON-SITE FILL MATERIAL

- A. On-site excavated soil and borrow material 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.

2.02 FURNISHED EXCAVATION MATERIAL

- 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 prior to delivery to the work site.

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, as distributed by:
Hanes Geo Components
925 N, Oaklawn Ave.
Elmhurst, IL 60126
(847) 899-9965
www.hanesgeo.com
 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. The Contractor shall inspect the site and become familiar with the prevailing site conditions prior to bidding.
- B. The Contractor shall be solely responsible for determining all earthwork quantities based on the existing and proposed elevations provided on the plans. 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. The Contractor is responsible for collecting any additional geotechnical or survey data they deem necessary to complete an accurate estimate of earthwork quantities.
- C. 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. Excess soils shall be deposited and spread on site as directed by the Owner. When soil or fill deficits occur, borrow areas shall be indicated on the plans or identified in the field by the Owner. 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. Contingency quantities for on-site structural fill shall be for replacement of unsuitable soils only.
- D. No allowance will be made for additional materials placed beyond the lines and grades shown on the Contract Drawings unless the placing of such additional material is approved by the Owner. No allowance will be made for overhaul, shrinkage, or any additive or water applied to the embankment material to obtain compaction.
- E. No site grading shall begin until all required soil erosion and sediment control measures are in place and the in-stream work plan has been approved.
- F. 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.
- G. The Contractor shall remove and dispose of any additional organic material, debris, trash, rock, boulders or other unnecessary materials from areas to be graded. Trees measuring less than 6" in diameter at breast height (DBH), shrubs and herbaceous plant materials shall be removed and disposed. The removal and disposal of these 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.
- H. Backfill all holes made by demolition, clearing, grubbing, and other site preparation work with suitable materials from on site.

- I. Fill Material
 - 1. 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.
 - 2. Fill material and the surface to be filled shall be free of any frozen material. If, in the opinion of the Owner, fill already placed has loosened as a result of frost action, the fill shall be recompact prior to placing additional lifts. Compacted material that has been flooded and no longer meets the density specified shall be removed and replaced.
- J. Excavation and embankment construction shall conform to the applicable requirements of Sections 202, 203, 204, 205 and 502 of the IDOT Standard Specifications. Suitable material from excavation that is used as embankment or other structural fills shall be free from large dirt clods, rocks, roots, sticks, and other foreign bodies.
- K. Material that is to be excavated is assumed to be earth or other material that can be moved with mechanical equipment. Should any material that cannot be moved with mechanical equipment or that is not suitable for fill be encountered, notify the Owner before proceeding with the work.
- L. 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.
- M. 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.
- N. Site Drainage
 - 1. During construction operations the Contractor shall insure positive site drainage at the conclusion of each day.
 - 2. All earthwork shall be done in a manner that provides drainage and prevents surface water from entering excavations. Provide berms or channels to prevent flooding of subgrades. Promptly remove all water collecting in depressions.
 - 3. 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.

O. Soil Moisture

1. When soil moisture is excessive or inadequate, the surfaces shall be disked, wetted or dried as required, and recompact. Where soil has been softened or eroded by flooding or placement during unfavorable weather, remove all affected areas and recompact as specified.
 2. Provide and maintain at all times during construction ample means and devices with which to promptly remove and dispose of all water from every source entering the excavations or other parts of the Work.
 3. When necessary, dewater by means that will ensure dry excavations and the preservation of the final lines and grades of bottoms of excavations. Prior approval by the Owner of all erosion and sediment control measures shall be required before any dewatering operations proceed.
 4. Do not place, spread, fill or roll during unfavorable weather conditions. Do not resume operations until the soil moisture content and fill density are as specified. The Contractor may scarify the surface to accelerate drying to required moisture content and recompact to required density.
- P. When there is excess on-site topsoil, the Contractor shall, at the direction of Owner, 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.

3.02 SITE GRADING

- 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 revegetation 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 resspreading at a later time. Topsoil stockpiles shall not be driven upon or otherwise compacted. Protect all topsoil stockpiles from contamination by other materials or harmful substances.
- C. After topsoil stripping, should the Contractor encounter unsuitable material in areas that require structural fill, the Contractor shall notify the Owner prior to placement of any fill material.
- D. Spread fill material in layers not exceeding 8" in uncompacted thickness. Compact each soil layer to at least the specified minimum requirements. Repeat the filling and compacting until rough subgrade is attained.
- E. Areas proposed for new pavement or pavement repair shall be compacted to a minimum ninety-five percent (95%) of maximum density based on a Standard Proctor (ASTM D-698).

- F. Areas proposed for structural fills shall be compacted to a minimum of 95 percent (95%) based on a Modified Proctor (ASTM D-1557).
- G. 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.
- H. 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.
- I. Areas proposed for landscaping, planting, seeding or revegetation shall receive a minimum of 6" of topsoil from on-site stockpiles unless otherwise specified. Before placement of topsoil, the Contractor shall ensure 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" 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.

END OF SECTION 31 22 00

SECTION 31 22 19

FINISH GRADING AND TOPSOIL

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 31 22 00 – Site Grading
 2. Section 32 92 00 – 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:

<u>Sieve Designation</u>	<u>Percent Passing</u>
1" screen	100
¼" screen	97 – 100
No. 10 U.S.S. mesh sieve	95 – 100
No. 140 U.S.S. mesh sieve	60 – 90

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 will be required due to steep slopes and other accessibility issues.

- 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 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 1-½ inches in diameter.
- 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 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.

3.03 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.

END OF SECTION 31 22 19

SECTION 31 25 00

SOIL EROSION AND SEDIMENT CONTROL

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 directly relate to the work of this section include, but are not limited to, the following:
 - 1. Section 01 50 00 – Temporary Site Access and Facilities
 - 2. Section 01 57 00 – Site and Natural Resource Protection
 - 3. Section 31 10 00 – Site Clearing and Vegetation Removal
 - 4. Section 31 22 00 – Site Grading
 - 5. Section 31 22 19 – Finish Grading and Topsoil
 - 6. Section 32 92 00 – 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 soil erosion and sediment control measures. 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 within 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

- 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 – “Strom Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices” (EPA).
- C. Watershed Development Ordinance – Lake County Stormwater Management Commission.
- 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

2.01 TEMPORARY VEGETATIVE STABILIZATION

- A. Seed for temporary vegetative stabilization conducted between March 1 and June 15 shall be 200 pounds per acre of the following mix.

SPECIES	WEIGHT	% GERMINATION (MIN.)
Spring Oats	150 lbs.	90
Annual Rye Grass	50 lbs.	90

- B. Seed for temporary vegetative stabilization conducted after June 15 shall be 200 pounds per acre of the following mix.

SPECIES	WEIGHT	% GERMINATION (MIN.)
Western Wheat Grass	150 lbs.	90
Annual Rye Grass	50 lbs.	90

- C. Hydromulch shall be
1. Mat-Blend Plus, a 60% wood fiber / 40% clean recycled newsprint hydraulic seeding mulch with 3% added tackifier by weight, as provided by:

Mat, Inc.
12402 Hwy 2
Floodwood, MN 55736
(888) 477-3028
www.matinc.biz

2. or approved equal.

2.02 SOIL STABILIZER

- A. Soil Stabilizer shall be:
1. Biocover: 100% Recycled and Thermally Refined® Wood Fibers (minimum) – 70% ± 3% > 50 psi (345 kPa) with steam and heat treated in a pressurized vessel for 5 minutes at > 380° F (193° C). Naturally Derived Formulation of Biopolymers and Activators – 20% ± 1%. Moisture Content – 10% ± 3%. 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

and available from:

Hanes Geo Components
925 N. Oaklawn Ave.
Elmhurst, IL 60126
(847) 899-9965
www.hanesgeo.com

2.03 COMPOST FILTER BERMS

- A. Compost filter berms shall be Siltworm® polypropylene geotextile tubes filled with recycled wood products as manufactured by Moore & Moore Erosion Control (www.siltworm.com) and as distributed by:

Erin Koertgen
Sales & Marketing Manager
Siltworm Erosion Control
847-409-8168
erink@siltworm.com

- B. or approved equal

2.04 FLOATING SILT CURTAIN

- A. Floating silt curtain shall be 48" tall Tough Guy Floating Barrier or approved equal. Floating silt curtain shall have sewn-in buoyant logs and a ballast chain.

Floating silt curtain shall be supported by metal T-posts spaced not farther apart than 10 feet on center.

2.05 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 wherever seeding occurs.
- 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, wetland 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 (eg. 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 VEGETATIVE STABILIZATION (IF REQUIRED)

- A. Perform temporary vegetative stabilization 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 conforming to the requirements above concurrent with temporary seeding.

3.04 COMPOST FILTER BERM

- A. Install compost filter berm where indicated on the plans.
- B. The Contractor shall provide maintenance of the compost filter berm including removal and disposal of any materials caught by the compost filter berms. After final stabilization, all accumulated sediment shall be removed or respread, without interrupting drainage, and graded, seeded and stabilized per Sections 31 22 19 – Finish Grading and Topsoil and 32 92 00 – Seeding.
- C. The compost filter berms shall remain in place until all contributing upslope areas and swales have been stabilized, at which time the compost filter berms shall be removed by the Contractor. The wood chips within the compost filter berms may be distributed on site in designated locations as directed by and with prior approval from Owner.

3.05 SOIL STABILIZATION (IF REQUIRED)

- A. Apply soil stabilizer on all areas as designated on the plans or indicated in the field.

- B. Strictly comply with equipment manufacturer's installation instructions and recommendations. Use approved mechanically agitated, hydro-spraying machines with fan-type nozzle (50-degree tip).
- C. To achieve optimum soil surface coverage, apply material from opposing directions to the soil surface. Rough surfaces (rocky terrain, cat tracks and ripped soils) may require higher application rates to achieve proper cover. Slope interruption devices or water diversion techniques are recommended when slope lengths exceed 40 feet. Maximum slope length is based on a 3H:1V slope. For applications on steeper slopes, the maximum slope length may need to be reduced based on actual site conditions. Not recommended for channels or areas with concentrated water flow.
- D. Mix and apply material at a rate of 50 lb per 180 gallons (23 kg/757 liters) of water. Confirm loading rates with equipment manufacturer. Do not apply if precipitation is imminent.
- E. Apply 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

3.06 WATER MANAGEMENT

- A. The Contractor must submit an in-stream work plan for approval prior to commencing stream or shoreline work per Drawing No. C1.1, C3.0 and C3.1.
- B. 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.
- C. 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.

END OF SECTION 31 25 00

SECTION 31 37 00

STONE

1. **GENERAL**

1.01 DESCRIPTION

- A. Work under this section includes:
1. Supply of STONE TYPE 1, 2 and 4.
 2. Transfer of STONE TYPE 3A and 3B from Owner Supply.
 3. Installation of stone (complete), including: excavation, bedding (where required), and incidental items required to construct the following:
 - a) Embankment Overflow Energy Dissipation and Grade Control Location 1
 - b) In-Stream Energy Dissipation and Grade Control Locations 1 and 2
 - c) Storm Sewer Outlet Energy Dissipation and Grade Control Locations 1 and 2
 - d) Streambank Stabilization Locations 1, 2, 3, 4, 5, 6A and 6B
 - e) Overlooks 1, 2 and 3
- 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 31 22 00 – Site Grading
 2. Section 31 22 19 – Finish Grading and Topsoil

2. **PRODUCTS**

2.01 STONE – TYPE 1

- A. Stone – Type 1 shall meet the gradation requirements of RR3, in conformance with Article 1005.01 of the IDOT Standard Specifications except as noted below. Stone Type 1 shall be natural field stone cobbles of mixed geologic origin primarily granite, as is typically found in 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.

2.02 STONE – TYPE 2

- A. Stone – Type 2 shall meet the gradation requirements of RR4, in conformance with Article 1005.01 of the IDOT Standard Specifications except as noted below. Stone Type 2 shall be natural field stone cobbles of mixed geologic origin primarily granite, as is typically found in 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.

2.03 STONE – TYPE 3A (FROM OWNER SUPPLY)

- A. Stone – Type 3A shall be natural field stone boulders with a minimum diameter of 18-inches (18") and a maximum diameter of 24-inches (24") from Owner supply.

2.04 STONE – TYPE 3B (FROM OWNER SUPPLY)

- A. Stone – Type 3B shall be natural field stone boulders with a minimum diameter of 12-inches (12") and a maximum diameter of 24-inches (24") from Owner supply.

2.05 STONE – TYPE 4

- A. Stone – Type 4 shall be CA 2, Class 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.

3. EXECUTION

3.01 GENERAL

- A. Stone Type and thickness shall be as designated on the Plans.
- B. Contractor shall install and maintain erosion control measures and their approved in-stream work plan prior to the commencement of any construction activities in accordance with the Construction Drawings.

3.02 SUBGRADE PREPARATION

- A. Existing topsoil within stone area shall be stripped and stockpiled, subgrade shall be excavated to the required lines and grades as shown on the Construction Drawings. The subgrade shall be compacted to a minimum of 95% density based on a Standard Proctor (ASTM D-698).

3.03 STONE

- A. Stone shall be installed at the locations and in the dimensions shown on the Plans. The stone shall be placed to a depth shown on the Plans and set in bedding when so indicated.
- B. Stone shall be placed in accordance with Articles 281.03 and 281.04 of the IDOT Standard Specifications except that filter fabric and bedding shall not be required under Stone – Type 2. Hand work, including placement and/or adjustment of individual stones, will also be required.

END OF SECTION 31 37 00

SECTION 32 92 00

SEEDING

1. **GENERAL**

1.01 DESCRIPTION

- A. This section includes:
 - 1. Installation of 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 31 10 00 – Site Clearing and Vegetation Removal
 - 2. Section 31 25 00 – Soil Erosion and Sediment Control
 - 3. Section 31 22 00 – Site Grading
 - 4. Section 31 22 19 – Finish Grading and Topsoil

1.02 QUALITY ASSURANCE

- A. 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.

1.03 SUBMITTALS

- A. Prior to delivery of any materials to the site, submit a complete list of all seed including botanic and common name to be used during this portion of the work. Include complete data on source, quantity and quality. Seed shall not be delivered to project site until this submittal has been approved.

2. **PRODUCTS**

2.01 FERTILIZER

- A. Fertilizer for all areas designated as turfgrass seed mixes shall have a nitrogen-phosphorous-potassium composition as follows:
 - 1. 18-18-18 with a minimum of 50% of the nitrogen component being slow release.
 - 2. or approved equal
- B. Provide fertilizer 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. E-Staples, 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:

American Excelsior Company
 Arlington, Texas
 (800) 777-7645
 www.curlex.com
 2. or approved equal

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

- 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**

1. Turfgrass seed mix shall be as follows:

TURFGRASS SEED MIX

SPECIES OR MIX	RATE (Lbs./Acre)	%
Kentucky Bluegrass Mix	110	50%
Improved Creeping Red Fescue	70	30%
Perennial Rye Mix	40	20%
TOTAL	220 lbs./Acre	100%

- a. Kentucky Bluegrass Mix shall be a blend of at least three improved cultivars selected for low maintenance applications.
- b. Improved Creeping Red Fescue shall be an improved cultivar or blend of cultivars.

- c. Perennial Rye Mix shall be a blend of at least three improved cultivars selected for disease resistance.
2. Native mixes shall contain the species identified on the plans.
 - a. All native seed shall be provided as pure live seed (PLS) in the quantities specified.

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. The prepared surface shall be free from crusting and caking.

3.02 HERBICIDE APPLICATION

- A. Areas to be seeded which contain undesirable or weed species at the time of seeding shall be treated with herbicide as described in Section 31 10 00.
- B. The Contractor shall not commence seeding work until that time that the undesirable species have been eliminated and according to the seeding recommendation of the herbicide manufacturer. Application of herbicide shall be considered incidental to the seeding work and no additional compensation is due.

3.03 FERTILIZATION FOR TURFGRASS

- A. The specified fertilizer shall be applied a rate of 6 pounds per 1000 square feet 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. Fertilization shall be considered incidental to the seeding work and no additional compensation is due.
- C. Fertilizer shall not be used with Native Seed Mixes.

3.04 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.

3.05 SEEDING METHOD

- A. All seed mixes shall be sown with mechanical equipment which places the seed in direct contact with the soil, covers or packs the seed and rolls the seed bed to a firm condition in one continuous operation.
- B. Seed shall be sown in two passes; the second pass oriented approximately 45 degrees relative to the first pass. In restricted width areas, seed shall be sown in two passes of approximately the same direction.
- C. All seeding equipment shall be approved by the Owner prior to seeding. Use of any seeding equipment which does not include a roller or cultipacker attachment will require the Contractor to perform rolling or cultipacking of the seed bed in a separate operation. Seeding equipment shall be properly calibrated to the required seeding rates.
- D. Alternate methods of seeding such as broadcasting will only be approved by the Owner when unfavorable site conditions such as steep slopes, limited access, or where narrow dimensions occur at the seeding areas.
- E. When a broadcast seeding method is approved the seed shall be deposited using only a dedicated broadcast spreader. Hand cast seeding shall not be acceptable. The seed shall be broadcast in two passes approximately 90 degrees from each other. After all seed has been broadcast the contractor shall rake and roll the area to assure proper seeding depth and soil contact.

3.06 SEEDING SCHEDULES

- A. Seeding of turfgrass mixes is recommended to be performed between April 1 and May 15 or from August 1 and September 15. 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.
- B. Seeding of native mixes shall be performed during the dormant season, generally after October 31 and before May 1, but not when the ground is frozen or covered with snow. 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.

3.07 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 seed from the specified seed mix. Erosion control blanket shall be restapled, reapplied or otherwise reset as specified as often as necessary until stabilization has been achieved.

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 MOWING – TURFGRASS

- A. Maintain a mowed height of 3” until achieving the performance and guaranty criteria for seeded areas. Mow turf promptly when it reaches 6” in height.
- B. All mowing shall be incidental to the project and no further payment is due.

3.10 MOWING – NATIVE MIXES

- A. Mow native seeding areas to a height of not less than 6” when growth reaches 12”.
- B. Two mowings of native seeding areas shall be incidental to the project and no further payment is due.

3.11 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. 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. The minimum ground coverage shall be achieved within 90 days of the original seeding, excluding the winter months of November through March. The Contractor shall promptly remove any erosion control blanket and reseed the bare areas according to the specifications as necessary until the minimum coverage is achieved. When weed species interfere with proper turf establishment, the Contractor shall apply an appropriate herbicide to reduce the competition. After each reseeded, the Contractor shall reinstall new erosion control blanket as originally indicated on the plans.
- C. 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 32 92 00

SECTION 32 93 00
NATIVE PERENNIAL PLANTING

1. GENERAL

1.01 DESCRIPTION

- A. This section includes:
 - 1. Installation of native plant plugs and temporary herbivory protection.
 - 2. Maintenance of planting 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 31 10 00 – Site Clearing and Vegetation Removal
 - 2. Section 31 25 00 – Soil Erosion and Sediment Control
 - 3. Section 31 22 00 – Site Grading
 - 4. Section 31 22 19 – Finish Grading and Topsoil

1.02 QUALITY ASSURANCE

- A. 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.

1.03 SUBMITTALS

- A. Prior to delivery of any materials to the site, submit a complete list of all plants including botanic and common name to be used during this portion of the work. Include complete data on source, quantity, and quality. Plants shall not be delivered to project site until this submittal has been approved.

2. PRODUCTS

2.01 PLANT MATERIALS

- A. Species mixes shall be as indicated in the Plans.
- B. All plant materials shall have a provenance (origin) within 150 miles of the project site. Exceptions may be granted by the Owner if the Contractor can show the specified plant materials meeting this requirement are not available in the native nursery trade within the term of the contract.
- C. All plant material must meet the following requirements:
 - 1. All plants shall be guaranteed by the Contractor to be true to the botanic genus and species name specified.
 - 2. Plant materials shall comply with governmental regulations prevailing at the source of supply and the job site. All plant materials shall be nursery propagated in accordance with good horticultural practice. Collected stock of nursery-grown wild plants will not be permitted. All planting stock shall be healthy and exhibit adequate root growth. Plants shall be free of detrimental fungi and bacteria, pathogens, physical damages, and deformities. The Owner reserves the right to refuse any plants that do not meet these criteria.

3. Plants shall be provided in standard containers with dimensions approximately 2.5" x 2.5" square by 3.5" deep, consisting of 32 plants per flat. Grow-Tube trays of 38 plugs (GT-38s) will also be acceptable. Potted plants with equivalent or larger containers may be acceptable; smaller containers, bare root plants, and root stock will not be acceptable.
4. All plant materials shall have at least one full growing season prior to the year in which they are to be installed. First-year plants will not be accepted unless the Contractor can demonstrate that the specified material is not available and that the first-year materials are of comparable size and quality when compared to the specified material.
5. Plant materials shall be shipped with legible labels stating the correct name of the plant, securely attached to individual plants or flats.
6. The Owner may consider substitutions, and reserves the right to make additions and/or deletions of quantities and species depending upon availability at the time of planting.

2.02 TEMPORARY HERBIVORY PROTECTION

- A. Temporary herbivory protection shall consist of plastic or metal fencing at least 24" in height attached to wood or metal stakes.
 1. Contractor to provide a shop drawing of temporary herbivory protection for Owner's review prior to commencement of planning operations. Planting shall not commence until after the Contractor has received approval of their temporary herbivory protection submittal from the Owner.

3. **EXECUTION**

3.01 EXAMINATION

- A. The Contractor shall visit the site of the proposed work to thoroughly familiarize themselves with the prevailing conditions under which the work is to be completed, and acquaint themselves with soil conditions, hydrology, utilities, access, and any other conditions which may affect the Work.
- B. The Contractor's failure to fully inform themselves will not relieve them from any obligations to fully comply with the terms of the Contract, and no allowances will be made for the Contractor's failure to accurately understand the extent and type of work that is to be completed under the prevailing conditions.
- C. Do not proceed with planting operations until any unsatisfactory conditions have been corrected.
- D. Verify planting areas are ready to receive work.
- E. The Contractor must notify the Owner in writing of any concerns related to existing conditions or project design prior to commencement of planting operations. Later claims of non-performance resulting from foreseeable conditions or project design will be summarily rejected if concerns were not thoroughly and specifically described in writing by the Contractor prior to the commencement of planting operations.

3.02 PREPARATION

- A. Remove existing turf and weeds from area to be planted.
- B. Verify all related work has been completed and accepted.

- C. The Contractor shall be responsible for the layout of the limits of planting, and the location of individual species within each planting area.
 - 1. Layout individual species considering soil moisture and inundation potential. Place wetland species at lower elevations and mesic species at higher elevations.
 - 2. The Owner reserves the right to make minor adjustments to layout without any adjustment to time or compensation for completion.
 - 3. Planting shall not begin until the Contractor has received the Owner's approval of planting layout.

3.03 PLANTING

- A. Plant materials shall be installed per the approved planting layout. Any deviations from the approved layout are subject to the Owner's review.
- B. Plants shall be handled, transported, and stored at all times in accordance with best horticultural practices. Plants handled otherwise shall be subject to rejection by the Owner.
- C. All plants shall be healthy, vigorous, leafed out, and ready for immediate installation upon delivery. The Contractor shall replace any plants that are deemed inconsistent with these characteristics. No substitutions shall be permitted without prior approval from the Owner.
- D. If planting is delayed more than 4 hours, keep plant materials in refrigerated container or set plants in shade protected from weather and mechanical damage, and keep moist and cool. All plant materials shall be subject to Owner's inspection and approval prior to installation.
- E. Excavate plat pits with hand tools. When conditions detrimental to plant growth are encountered, notify the Owner immediately prior to continuing with planting operations. Install all plant materials straight, true, and plumb. Remove container from container grown plant stock prior to planting. If container grown stock is root bound, gently score sides and bottom of root mass. All plants shall be adequately heeled in to prevent desiccation or upheaval. All plant material shall be thoroughly watered by the Contractor immediately following planting.
- F. Temporary herbivory protection must be installed concurrent with planting. It shall be the Contractor's responsibility to replace any loses due to herbivory at no additional cost to the Owner.

3.04 PLANTING SCHEDULE

- A. Planting shall be completed between May 15 and June 15 or between August 15 and September 15. If the Contractor elects to plant outside of the specified planting windows, the Period of Establishment shall be extended by not less than 30 days.

3.05 PERIOD OF ESTABLISHMENT

- A. Maintenance of all plantings shall be the Contractor's responsibility for not less than 60 days. This shall be known as the Period of Establishment.
- B. The Period of Establishment shall commence immediately after all of the perennial planting work has been completed and initially accepted by the Owner.

- C. During the Period of Establishment, the Contractor shall provide supplemental irrigation, pesticide application, weed control, and replanting as necessary to ensure 100% survival of all perennial plants.
 - 1. The Contractor must replace any plants that are not present, alive, and thriving within 14 calendar days of the discovery of such condition during the Period of Establishment. The cost of plant replacements shall be incidental to the initial planting, and no additional compensation will be allowed.
 - 2. If the Contractor fails to provide adequate weed control, irrigation, or other such required maintenance throughout the Period of Establishment, or if 100% all perennial plants are not present, alive, and thriving at the end of the Period of Establishment, the Period of Establishment shall be extended until such conditions are met. The minimum extension shall be 30 days.
- D. The Contractor may invoice for up to 50% of the total value of Native Perennial Planting work after initial planting operations, including installation of temporary herbivory protection, has been completed and accepted by the Owner. The balance shall not become due until all requirements of the Period of Establishment have been met.

END OF SECTION 32 93 00