

Lueder Haus Parking Lot
Jefferson County Human Services
Jefferson, WI

BID PACKAGE NO. 1
CONSTRUCTION DOCUMENTS

August 13, 2019

**SECTION 00 0101
PROJECT DIRECTORY**

LUEDER HAUS PARKING LOT
JEFFERSON, WISCONSIN

OWNER:

JEFFERSON COUNTY

1541 ANNEX ROAD

JEFFERSON, WI 53549

CONTACT: RYAN MUNDT

PHONE: 920-390-0340

EMAIL: ryanmu@jeffersoncountywi.gov

END OF SECTION

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SECTION 00200
ADVERTISEMENT FOR BIDS

Invitation to Bid
Lueder Haus Parking Lot
Jefferson, WI

See Jefferson County Request for Proposal:

If you have any questions about the proposals, please contact Ryan Mundt at the contact information above.

END OF SECTION

SECTION 01 1000 PROJECT SUMMARY

PART 1 GENERAL

1.01.1 PROJECT

- A. Project Name: Lueder Haus Parking Lot
- B. Location: Jefferson, WI
- C. Owner's Name: Jefferson County
- D. Owner's Contact: Ryan Mundt
- E. The project consists of removal of existing paving, excavating, grading, compacting, testing, drain installation, paving and striping.

1.02 CONTRACT DESCRIPTION

- A. Owner will be accepting Contractor bids for all portions of the work as described in Project Documents.

1.03 DESCRIPTION OF WORK

- A. The work of this Project is shown on the drawings
- B. The Drawings are complimentary and what is required by any one shall be binding as if required by all
- C. All awarded bidders shall cooperate to the fullest extent possible, to coordinate and limit their activities to the area of this proposed construction and minimize interference with other properties, other construction and Owner operations.

1.04 OWNER OCCUPANCY

- A. Schedule the Work to accommodate facility's existing operations.

1.05 LOCAL PERMITS AND CONNECTION FEES

- A. The Owner shall provide the General Contractor with Plans.
- B. It is the responsibility of each trade contractor to secure and pay for all local permits and connection fees applicable to their trade work.

1.06 SPECIFICATION SECTIONS APPLICABLE TO ALL CONTRACTS

- A. Unless otherwise notes, all provisions of the sections listed below apply to all contracts. Specific items of work listed under individual contract descriptions constitute exceptions.
- B. Section 01 3000 – Administrative Requirements
- C. Section 01 4000 – Quality Requirements
- D. Section 01 4150 - Testing & Inspection Services
- E. Section 01 5600 – Temporary Barriers and Enclosures
- F. Section 01 7000 - Execution and Closeout Requirements
- G. Section 01 7400 – Final Cleaning
- H. Section 01 7419 – Construction Waste Management and Disposal

1.07 PROJECT TIMELINE

- A. RFP Available: August 13, 2019
- B. Required Site Visit: August 12-27, 2019
- C. Bids received until 2:00 p.m.: August 27, 2019
- D. Vendor selected by JCHS: September 5, 2019
- E. Vendor approved by Building and Grounds: September 11, 2019
- F. Project approved by Jefferson County Board: September 11, 2019
- G. Installation Begins: September 12, 2019
- H. Project completion: November 1, 2019
- I. ALL DATES ARE ESTIMATED EXCEPT DATE THAT PROPOSALS ARE DUE

SECTION 01 3000 ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Progress photographs and documentation.

1.02 RELATED REQUIREMENTS

- A. Section 01 4000 – Quality Requirements

PART 2 EXECUTION

3.01 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

- A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF) format and transmitted via email or similar electronic media.
- B. Besides submittals for review, information, and closeout, this procedure applies to requests for information (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes and any other document any participant wishes to make part of the project record.
 - 1. It is the Contractor's responsibility to submit documents in PDF format that allow for Adobe stamps and mark-ups to be attached to documents.
 - 2. Subcontractors and suppliers will be required to use this electronic format.
 - 3. Users need an email address, internet access and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, www.adobe.com, or Bluebeam PDF Revu, www.bluebeam.com).
 - 4. Paper document submittals will not be reviewed.
 - 5. Only emailed PDF documents will be reviewed.
 - 6. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.

3.06 PROGRESS PHOTOGRAPHS

- A. Contractor is responsible for providing photographic documentation of the construction progress. Maintain one set of all photographs at project site for reference; same copies to be submitted to Owner for review.
- B. In addition to periodic, recurring views, take photographs of each of the following events:
 - 1. Completion of site clearing.
 - 2. Excavations in progress.
 - 3. Final completion, minimum of five (5) photos.
- C. Views:
 - 1. Provide non-aerial photographs from four cardinal views.
 - 2. Provide factual presentation and identify work in progress.
 - 3. Delivery Medium: Via email
 - 4. File Naming: Include project identification, date and time of view, and view identification.
 - 5. PDF File: Assemble all photos into printable pages in PDF format, with 2 to 3 photos per page, each photo labeled with file name, one PDF file per submittal.

SECTION 01 4000 QUALITY REQUIREMENTS

PART 1 GENERAL

A. SECTION INCLUDES

- A. Control of installation
- B. Tolerances.
- C. Testing and inspection services

1.05 TESTING AND INSPECTION AGENCIES

- A. Contractor shall employ and pay for services of an independent testing agency to perform other specified testing.
- B. Employment of agency in no way relieves of obligation to perform work in accordance with requirements of contract documents.
- C. Contractor Employed Agency:
 - 1. Testing agency: Comply with requirements of ASTM E329, ASTM E543, ASTM C1021, ASTM C1077 and ASTM C1093.
 - 2. Inspection agency: Comply with requirements of ASTM D3740 and ASTM E329.
 - 3. Laboratory: Authorized to operate in the State in which the project is located.
 - 4. Laboratory Staff: Owner maintenance staff will review services
 - 5. Testing Equipment: Calibrated at reasonable intervals either by NIST or using and NIST established Measurement Assurance program, under a laboratory measurement quality assurance program.

PART 2 EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions and workmanship to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with contract documents, request clarification from owner before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration physical distortion and disfigurement.

3.04 TESTING AND INSPECTION

- A. See individual specification sections for testing required.
- B. Testing Agency Duties:
 - 1. Provide qualified personnel at site. Cooperate with Owner in performance of services.
 - 2. Perform specified sampling and testing of projects in accordance with specified standards.
 - 3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 - 4. Promptly notify owner and contractor of observed irregularities or non-conformance of work or products.
 - 5. Submit reports of all tests/inspections specified.
- C. Limits on Testing/Inspection Agency Authority:
 - 1. Agency may not release, revoke, alter or enlarge on requirements of contract documents.
 - 2. Agency may not approve or accept any portion of the work.
 - 3. Agency may not assume any duties of contractor.
 - 4. Agency has no authority to stop the work.
- D. Contractor Responsibilities:

1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
 2. Cooperate with laboratory personnel and provide access to the work and to manufacturers' facilities.
 3. Provide incidental labor and facilities:
 - a. To provide access to work to be tested/inspected.
 - b. To obtain and handle samples at the site or at source of products to be tested/inspected.
 - c. To facilitate tests/inspections.
 - d. To provide storage and curing of test samples.
 4. Notify owner and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests and inspections required by contractor beyond specified requirements.
 6. Arrange with owner's agency and pay for additional samples, tests and inspections required by contractor beyond specified requirements.
- E. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by owner.
- F. Re-testing required because of non-conformance to specified requirements shall be paid for by the contractor.

3.06 DEFECT ASSESSMENT

- A. Replace work or portions of the work not conforming to specified requirements.
- B. If, in the opinion of owner, it is not practical to remove and replace the work, owner will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 01 4150 TESTING & INSPECTION SERVICES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Construction and building inspection services include lab or field testing, analysis and monitoring of structures and building materials such as pavement, asphalt, concrete or soils.
 - 1. Sitework:
 - a. Subsoil verification and classification
 - b. Testing/Evaluation of Sand Gravel materials
 - c. Compaction and Density Testing for excavated areas if required by owner
 - d. Proof Rolling, (5 passes, quad axel loaded with minimum 20 ton), approved by owner during normal business hours
 - e. Soil Stabilization Inspection and Testing if required by owner
 - 2. Concrete:
 - a. Concrete cylinders
 - b. Air Entrainment verification
 - c. Concrete Compression Testing and reports
 - 3. Asphalt:
 - a. Asphalt lay-down inspections by owner
 - b. Thickness to be verified by owner at intervals
- B. All work as outlined in various specification sections applicable to work by this section.

1.02 RELATED REQUIREMENTS

- A. Section 01 1000 – Summary: Contract descriptions, description of alterations work and work by others, future work, occupancy conditions, use of site and premises, work sequence.
- B. Section 01 2100 – Allowances: Cash, testing and contingency allowances.
- C. Section 01 2300 – Alternates: Descriptions of items, administrative requirements.
- D. Section 01 3000 – Administrative Requirements: Submittal procedures, project meetings, progress schedules and documentation, reports, coordination.
- E. Section 01 4000 – Quality Requirements: Procedures for testing, inspection, mock-ups, reports, certificates; use of reference standards.
- F. Section 01 6000 – Product Requirements: Fundamental product requirements, substitutions and product options, delivery, storage and handling.
- G. Division 31 – Earthwork
- H. Division 32 – Exterior Improvements

1.03 PRICE AND PAYMENT PROCEDURES

- A. Allowances: See Section 01 2100 – Allowances, for cash allowances affecting this section.
- B. Alternates: See Section 01 2300 – Alternates, for product alternatives affecting this section.

1.04 REFERENCE STANDARDS

- A. ASTM E329:
 - 1. All work to be performed will be performed will be per ASTM E329-11c “Standard Specification for Agencies Engaged in Construction Inspection, Testing or Special Inspection Services”
- B. ASTM C1077: Practice for Agencies Testing Concrete and Concrete Aggregates for use in Construction and Criteria for Testing Agency Evaluation.
- C. ASTM C1093: Practice for Accreditation of Testing Agencies for Masonry.
- D. ASTM D3666: Specification for minimum requirements for agencies testing and inspecting road and paving materials.
- E. ASTM D3740: Practice for minimum requirements for agencies engaged in testing and/or inspection of soil and rock as used in engineering design and construction.
- F. ASTM E4: Practices for force verification of testing machines.

G. ASTM E543: Specification for agencies performing nondestructive testing.

1.05 SUBMITTALS

A. See Section 01 3000 – Administrative Requirements for submittal procedures.

1.06. QUALITY ASSURANCE

A. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section

PART 2 PRODUCTS

2.01. See Section 01 6000 for additional requirements.

2.02. APPLICATIONS

- A. Testing agency to perform all work and supply all testing equipment and suppliers required to complete work of this section.
- B. General contractor shall provide a minimum of 48-hour notice of all construction operations where site inspection of verification work is required.
- C. Testing agency to supply owner and general contractor with copies of all inspection reports, testing reports, and other critical evaluation information within 24 hours of work conducted. Electronic notification and reporting is acceptable with hard copies bound in a permanent binder at the completion of the project.
- D. All work to be completed per approved fee schedules and will be billed against the appropriate “Testing Allowance” as set forth in other specification sections. Owner will be responsible to pay testing service contractor directly on a monthly billing cycle for work performed and approved to date.

PART 3 EXECUTION

3.01. See Section 01 7000 for additional requirements.

3.02. EXAMINATION

A. Verification of Conditions: Verify that site conditions are acceptable to continue work.

3.03. FIELD QUALITY CONTROL

A. See Section 01 4000 – Quality Requirements, for additional requirements.

SECTION 01 5600 TEMPORARY BARRIERS & ENCLOSURES

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. Temporary barriers
- B. Temporary dust partitions
- C. Temporary stairs

1.02. ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate the installation of protective enclosures and barriers with size, location and installation of work to be protected.
- B. Provide OSHA approved protective covers and enclosures on work in progress to ensure worker safety.
- C. Provide OSHA approved means of access and egress.
- D. Provide OSHA approved temporary stairs and ladders during construction operations.

PART 2 PRODUCTS

2.01. MATERIALS

- A. All materials to be construction grade where required.
- B. Provide proper sizing and thicknesses of material to provide for structurally sound enclosures.
- C. Provide necessary temporary hardware for operation of temporary doors including automatic door closing systems.
- D. Provide required fasteners to properly anchor material in place.

PART 3 EXECUTION

3.01. Installation

- A. Install all barriers so that final finished products are not damaged.
- B. Inspect enclosures and protective covers as required to ensure integrity.

3.02. Removal

- A. Remove and properly dispose of all materials required for work.
- B. Inspect all finished work to verify no damage has resulted. Replace as necessary.

END OF SECTION

SECTION 01 7000 EXECUTION AND CLOSE-OUT REQUIREMENTS

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. Examination, preparation and general installation procedures.
- B. Requirements for alterations work, including selective demolition, except removal, disposal, and/or remediation of hazardous materials and toxic substances.
- C. Cutting and patching.
- D. Staking.
- E. Surveying for laying out work.
- F. Cleaning and protection.
- G. Demonstration and instruction of Owner personnel.
- H. Closeout procedures, except payment procedures.
- I. General requirements for maintenance service.

1.02. RELATED REQUIREMENTS

- A. Section 01 5719 – Temporary Erosion and Sedimentation Control: Additional erosion and sedimentation control requirements.
- B. Section 01 7419 – Construction Waste Management and Disposal: Additional procedures for trash/waste removal, recycling, salvage and refuse.
- C. Section 01 7800 – Closeout Submittals: Project record documents, operation and maintenance data, warranties and bonds.

1.03 PROJECT CONDITIONS

- A. Grade site to drain. Maintain excavations free of water. Provide, operate and maintain pumping equipment.
- B. Protect site from pooling or running water. Provide water barriers as required to protect site from soil erosion.
- C. Ventilate enclosed areas to assist cure of materials, to dissipate humidity and to prevent accumulation of dust, fumes, vapors or gases.
- D. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
- E. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
- F. Noise Control: Provide methods, means and facilities to minimize noise produced by construction operations.
- G. Pest and Rodent Control: Provide methods, means and facilities to prevent pests and insects from damaging the work.
- H. Pollution Control: Provide methods, means and facilities to prevent contamination of soil, water and atmosphere from discharge of noxious, toxic substances and pollutants produced by construction operations. Comply with federal, state and local regulations.

1.04 COORDINATION

- A. Coordinate scheduling, submittals and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.
- C. Coordinate completion and clean-up of work of separate sections.
- D. Coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

- B. Type and Quality of Existing Products: Determined by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or improper fabrication.
- E. Verify that utility services are available, of the correct characteristics and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer or conditioner prior to applying any new material or substance in contact or bond.

3.03 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify owner of any discrepancies discovered.
- C. Contractor shall locate and protect survey control and reference points.
- D. Control datum for survey is that established by Owner provided survey.
- E. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- F. Promptly report to owner the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- G. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to owner.
- H. Utilize recognized engineering survey practices.
- I. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes and invert elevations.
 - 2. Grid or axis for structures.
 - 3. Building foundation, column locations, ground floor elevations.
- J. Periodically verify layouts by same means.
- K. Maintain a complete and accurate log of control and survey work as it progresses.

3.04. GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

3.05. ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as shown.
 - 2. Report discrepancies to owner before disturbing existing installation.
 - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- B. Keep areas in which alterations are being conducted separated from other areas that are still occupied.
- C. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove items indicated on drawings.
- D. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal of work.
- E. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
 - 1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to owner.
- F. Remove demolition debris and abandoned items from alteration areas and dispose of off-site; do not burn or bury.
- G. Do not begin new construction in alteration areas before demolition is complete.
- H. Comply with all other applicable requirements of this section.

3.07. CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.
 - 3. Provide openings for penetration of mechanical, electrical and other services.
 - 4. Match work that has been cut to adjacent work.
 - 5. Repair areas adjacent to cuts to required condition.
 - 6. Repair new work damaged by subsequent work.
 - 7. Remove samples of installed work for testing when requested.
 - 8. Remove and replace defective and non-conforming work.
- C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- D. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval
- E. Restore work with new products in accordance with requirements of contract documents.
- F. Patching.
 - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 - 2. Match color, texture and appearance.
 - 3. Repair patched surfaces that are damaged, lifted, discolored or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.08. PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris and rubbish. Maintain site in a clean and orderly condition.
- B. Collect and remove waste materials, debris and trash/rubbish from site periodically and dispose off-site, do not burn or bury.

3.09. PROTECTION ON INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Prohibit traffic from landscaped areas.
- E. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.10. FINAL CLEANING

- A. Execute final cleaning prior to final project assessment.
- B. Use cleaning materials that are no hazardous
- C. Cleaning materials shall be appropriate to the surface and material being cleaned.
- D. Clean debris from roofs, gutters, downspouts and drainage systems.
- E. Clean site; sweep paved areas, rake clean landscaped surfaces.
- F. Remove waste, surplus materials, trash/rubbish and construction facilities from the site; dispose of in legal manner; do not burn or bury.

END OF SECTION

SECTION 01 7400 FINAL CLEANING

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. Final construction cleaning.

1.02. RELATED REQUIREMENTS

- A. Section 01 3000 – Administrative Requirements: Submittal procedures, project meetings, progress schedules and documentation, reports, coordination.
- B. Section 01 4000 – Quality Requirements: Procedures for testing, inspection, mock-ups, reports, certificates; use of reference standards.
- C. Section 01 6000 – Product Requirements: Fundamental product requirements, substitutions and product options, delivery, storage and handling.
- D. See Section 01 7419 – Construction Waste Management and Disposal

1.03. ADMINISTRATIVE REQUIREMENTS

- A. Start of work shall not commence until such time as construction trade work is complete and areas are ready for occupancy by owner.

1.04. FIELD CONDITIONS

- A. Do not start work until all construction debris and operations have been removed and completed.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01. CLEANING

- A. Verification of Conditions: Verify that construction work is complete prior to starting cleaning operations.
- B. Notify the owner of any defects or damage found during the cleaning operations.
- C. Remove all excess material, garbage and construction debris.
- D. Sweep entire area prior to starting final cleaning to minimize dust.
- E. Clean project site including areas disturbed by construction activities and landscaping.
- F. Protect cleaned areas from subsequent construction operations.

END OF SECTION

SECTION 01 7419 CONSTRUCTION WASTE MANAGEMENT & DISPOSAL

PART 1 GENERAL

1.01. WASTE MANAGEMENT REQUIREMENTS

- A. Good environmental practices require that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- D. Construction manager shall develop and follow a Waste Management Plan designed to implement these requirements.
- E. The following sources may be useful in developing the Waste Management Plan.
- F. Methods of trash/waste disposal that are not acceptable are:
 - 1. Burning on the project site.
 - 2. Burying on the project site.
 - 3. Dumping or burying on other property, public or private.
 - 4. Other illegal dumping or burying.
- G. Regulatory Requirements: Each contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.
- H. The construction manager is responsible to assign a contractor responsible for all trash removal for the entire duration of this project. This includes, but is not limited to FF&E packaging, framing debris, MEP packaging, etc.

1.02. RELATED REQUIREMENTS

- A. Section 01 3000 – Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures and project documentation.
- B. Section 01 6000 – Product Requirements: Waste prevention requirements related to delivery, storage and handling.
- C. Section 01 7000 – Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection and cleaning.

1.03. DEFINITIONS

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk or the like.
- B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris and rubble resulting from construction, remodeling, repair and demolition operations.
- C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.
- D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.
- E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
- F. Recyclable: The ability of a project or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.
- H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating or thermally destroying waste.
- I. Return: To give back reusable items or unused products to vendors for credit.
- J. Reuse: To reuse a construction waste material in some manner on the project site.
- K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
- L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.

- M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- N. Toxic: Poisonous to humans either immediately or after a long period of exposure.
- O. Trash: Any product or material unable to be reused, returned, recycled or salvaged.
- P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable and reusable material.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01. WASTE MANAGEMENT PROCEDURES

- A. See Section 01 3000 for additional requirements for project meetings, reports, submittal procedures and project documentation.
- B. See Section 01 6000 for waste prevention requirements related to delivery, storage and handling.
- C. See Section 01 7000 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection and cleaning.

3.02. WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Contractor: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
- B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor and owner.
- C. Instruction: Provide on-site instruction of appropriate separation, handling and recycling, salvage, reuse and return methods to be used by all parties at the appropriate stages of the project.
- D. Meetings: Discuss trash/waste management goals and issues at project meetings.
 - 1. Pre-bid meeting.
 - 2. Pre-construction meeting.
 - 3. Regular job-site meetings.
- E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return and trash disposal, for use by all contractors and installers.
 - 1. Provide containers as required.
 - 2. Locate enclosures out of the way of construction traffic.
 - 3. Provide adequate space for pick-up and delivery and convenience to subcontractors.
 - 4. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
- F. Hazardous Wastes: Separate, store and dispose of hazardous wastes according to applicable regulations.
- G. Recycling: Separate, store, protect and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
- H. Reuse of Materials On-Site: Set aside, sort and protect separated products in preparation for reuse.
- I. Salvage: Set aside, sort and protect products to be salvaged for reuse off-site.

END OF SECTION

SECTION 02 4113 SELECTIVE SITE DEMOLITION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. This work consists of the removal and disposal of existing rock retaining wall, trees and any other obstructions that are not designated or permitted to remain. It shall also include salvaging, stockpiling and loading salvable materials, and sawing and cutting to facilitate controlled breaking and removal of and asphalt to a neat line. Except in areas to be excavated, the resulting trenches, holes and pits shall be backfilled.
- B. Materials removed and not designed to be salvaged or incorporated into the work shall become the property of contractor.

1.2 RELATED SECTIONS

- A. The following is a list of specifications which may be related to this section:
 - 1 Section 31 1000, Site Cleaning.
 - 2 Section 31 2000, Excavation and Fill.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

1.1 GENERAL

- A. Contractor shall raze, remove, and dispose of existing asphalt/concrete as identified on the drawings except salvable material designed to remain the property of owner.
- B. Salvable Material:
 - 1. All salvable material designated in the contract or by owner, to remain the property of owner shall be removed without damage, in sections or pieces which may be readily transported, and shall be stockpiled by contractor at specified within the project limits.
 - 2. Contractor shall safeguard salvable materials and shall be responsible for the expense of repairing or replacing damaged or missing material.

END OF SECTION

SECTION 31 0513 SOILS FOR EARTHWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Subsoil Materials
- B. Topsoil Materials

1.02 RELATED REQUIREMENTS

- A. Section 01 1000 – Summary: Contract descriptions, description of alterations work, and work by others, future work, occupancy conditions, use of site and premises, work sequence.
- B. Section 01 4000 – Quality Requirements: Procedures for testing, inspection, mock-ups, reports, certificates; use of reference standards.
- C. Section 01 6000 – Product Requirements: Fundamental product requirements, substitutions and product options, delivery options, delivery, storage and handling.

1.03 REFERENCE STANDARDS

- A. AASHTO T180 – Standard Specification for Moisture-Density Relations of Soils using a 4.54-kg (10 lb.) Rammer and a 456-mm (18 inch) Drop.
- B. ASTM D698 – Standard test Method for Laboratory Compaction Characteristics of Soil using Standard Effort (12,400 ft-lb/ft³ (600 kN-m/m³)).
- C. ASTM D1557 – Standard test method for Laboratory Compaction Characteristics of Soil using Modified Effort (6,000 ft-lb/ft³ (2700kN-m/m³)).
- D. ASTM D2487 – Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).

1.04 DELIVERY, STORAGE AND HANDLING

- A. If required to stockpile material, store on site and provide protection to material and to adjacent areas. Provide erosion controls if necessary.

PART 2 PRODUCTS

2.01 Subsoil Materials:

- A. Subsoil Type (S1) Fill:
 - 1. Excavated and re-used material or local borrow.
 - 2. Graded.
 - 3. Free of lumps larger than 3/4 inch, rocks larger than 3/4 inch and debris.
 - 4. Conforming to ASTM D2487 Group Symbol GW, GP, GP-GM, SW, SP and SP-SM.
 - 5. Use of clay soils with written permission of Owner prior to use.
- B. Subsoil Type (S2) Fill:
 - 1. Excavated and re-used material or local borrow.
 - 2. Graded.
 - 3. Free of lumps larger than 3 inches, rocks larger than 3 inches and debris.
 - 4. Conforming to ASTM E2487 Group Symbol GW, GP, SW and SP.
 - 5. Material with less than 15% passing the number 200 sieve.

2.02 Topsoil Materials:

- A. Topsoil Type (S3) Onsite Topsoil:
 - 1. Excavated and re-used material.
 - 2. Graded.
 - 3. Free of roots, rocks larger than ½ inch, subsoil, debris, large weeds, and foreign matter.
 - 4. Conforming to ASTM D2847 Group Symbol OH.
- B. Topsoil Type (S4) Imported Topsoil:
 - 1. Imported borrow.
 - 2. Friable loam.
 - 3. Reasonably free of roots, rocks larger than ½ inch, subsoil, debris, large weeds and foreign matter.
 - 4. Containing minimum 8 percent and maximum of 25 percent inorganic matter.

5. Conforming to ASTM D2487 Group Symbol OH.

2.03 Source Quality Control:

- A. Furnish materials of each type from the same source throughout the project.

PART 3 EXECUTION

3.01 See Section 01 7000 for additional requirements.

3.02 EXAMINATION

- A. Verification of Conditions: Verify that existing conditions and material are correct prior to start of work.

3.03 EXCAVATION

- A. Excavate subsoil and topsoil from areas designated or approved. Strip topsoil to full depth in designated areas.
- B. Stockpile excavated materials meeting requirements for subsoil and topsoil materials as specified.
- C. Remove excess materials not needed for re-use from site.
- D. Remove excavated materials not meeting requirements for subsoil or topsoil from site.

3.04 STOCKPILING

- A. Stockpile materials on site at locations designated by Soils Engineer or approved by owner.
- B. Stockpile in sufficient quantities to meet project schedule and requirements.
- C. Separate differing materials with dividers or stockpile apart to prevent mixing.
- D. Stockpile topsoil to 15 feet maximum height.
- E. Prevent intermixing of soil types or contamination.
- F. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.
- G. Provide any required erosion controls to protect materials and/or site conditions.

3.05 STOCKPILE CLEANUP

- A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.
- B. Restore area as required by contract documents and verify with owner.

END OF SECTION

SECTION 31 1000 SITE CLEARING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. This work consists of clearing, grubbing, removing and disposing of vegetation and debris within the limits of the project site as shown on the drawings and as required by the work. Vegetation and objects designated to remain shall be preserved free from injury or defacement.

1.02 RELATED REQUIREMENTS

- A. Section 01 1000 – Summary.
- B. Section 01 4000 – Quality requirements.
- C. Section 01 7000 – Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points and existing construction to remain; reinstallation of removed products.
- D. Section 01 7419 – Construction Waste Management and Disposal: Limitations on disposal of removed materials; requirements for recycling.
- E. Section 31 2300 – Excavation & Fill

1.03 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to remain the owner's property, all cleared items shall become the contractor's property and shall be removed from the site and properly disposed of or further disposition at the contractor's option.
- B. No sale or storage of material or equipment will be allowed for on-site.

1.04 QUALITY ASSURANCE

- A. Conform to applicable state and local codes for environmental requirements, disposal of debris, burning debris on site, use of herbicides and proper erosion control.

1.05 WARRANTY

- A. Existing plant life and concrete or asphalt within 10 feet of the area being cleared, shall be replaced by contractor if death of vegetation or damage results from contract work during construction and shall be in force until 1 year after final acceptance by owner.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify, stake and locate existing site elements to remain. Coordinate with owner.
- B. Install erosion control systems prior to start of work.
- C. Call local utilities or locating service in a timely manner to allow for full markings to be conducted.
- D. Install temporary access drives and mud collections pads prior to start of mass site clearing.

3.02 EXECUTION

A. SITE CLEARING

- 1. Comply with other requirements specified in Section 01 7000.
- 2. Minimize production of dust due to clearing operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers or other pollution.
- 3. Clear areas required for access to site to a minimum depth of 6 inches.

B. EXISTING UTILITIES AND BUILT ELEMENTS

- 1. Notify utilities before starting work and comply with their requirements; obtain required permits.
- 2. Protect existing utilities to remain from damage.

C. VEGETATION

- 1. Remove trees, shrubs, brush and stumps in areas to be covered by retaining wall and planting beds.

3.03 TOPSOIL REMOVAL

- A. Excavate topsoil from areas to be further excavated, re-landscaped, re-graded without mixing with foreign materials and stockpile on site for use in finish grading.
- B. Do not excavate wet topsoil
- C. Stockpile in area designated onsite to a depth not exceeding 15 feet and protect from erosion.
- D. Remove excess topsoil from site that cannot be re-used.

3.04 DEBRIS

- A. Remove debris, junk and trash from site.
- B. Leave sit in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.

3.05 PROJECT RECORD DOCUMENTS

- A. Furnish a field plan to owner, showing all existing, removed and abandoned site utilities, structures or other features found during construction operations.

END OF SECTION

SECTION 31 2200 ROUGH GRADING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Removal of topsoil
- B. Cutting, grading, filling and compacting site.
- C. Finish grading.

1.02 RELATED REQUIREMENTS

- A. Section 31 1000 – Site Cleaning.
- B. Section 31 2316 – Excavation.
- C. Section 31 2323 – Fill: Filling and compaction.

1.03 QUALITY ASSURANCE

- A. Warrant work under this section against settlement for a period of one (10 year after substantial completion. Corrective work due to settlement will be at contractor's expense.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Topsoil: See Section 31 2323 for other material types
 - 1. Type S3 and S4 as specified in Section 31 0513.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Section 01 3000 – Administrative Requirements.
- B. Verify site conditions are similar in nature to the construction documents.
- C. Verify that survey bench mark and intended elevations for the work are as indicated.

3.02 PREPARATION

- A. Identify required lines, levels, contours and datum.
- B. Stake and flag locations of known utilities.
- C. Locate, identify and protect from damage above and below grade utilities to remain.
- D. Notify utility company to remove and relocate utilities.
- E. Protect site features to remain, including but not limited to bench marks, survey control points, existing structures, fences, sidewalks, paving and curbs from damage by grading equipment and vehicular traffic.

3.03 ROUGH GRADING

- A. Remove topsoil from areas to be further excavated, re-landscaped or re-graded, without missing with foreign materials.
- B. Do not remove topsoil when wet.
- C. Remove subsoil from areas to be further excavated, re-landscaped or re-graded.
- D. Do not remove wet subsoil, unless it is subsequently processed to obtain optimum moisture content.
- E. When excavating through roots, perform work by hand and cut roots with sharp axe.
- F. See Section 31 2323 for filling procedures
- G. Benching Slopes: Horizontally bench existing slopes greater than 1:4 to key fill material to slope for firm bearing.

H. Stability: Replace damaged or displaced subsoil to same requirements as for specified fill.

3.04 SOIL REMOVAL AND STOCKPILING

- A. Stockpile excavated topsoil on site.
- B. Stockpile subsoil to be re-used on site; remove remainder from site.
- C. Stockpiles: Use areas designed on site; pile depth not to exceed 15 feet; protect from erosion.

3.05 FILLING

- A. Fill areas to contours and elevations with unfrozen material.
- B. Place fill materials continuous layers and compact to meet compaction requirements.
- C. Maintain optimum moisture content of fills to attain maximum compaction density.
- D. Slope grade away from buildings or structures a minimum of 2 percent slope for a minimum distance of 10 feet, unless specifically noted otherwise.
- E. Make grade changes gradual. Blend slope into level areas.
- F. Repair or replace items indicated to remain if damaged by excavation or filling operations.

3.06 SUBGRADE APPROVAL

- A. Prior to placing aggregate base course, contact Owner or Testing Agency to schedule an inspection of the subgrade.

3.07 FINISH GRADING

- A. Before Finish Grading:
 - 1. Verify building and trench backfilling have been inspected.
 - 2. Verify subgrade has been contoured and compacted.
- B. Remove debris, roots, branches, stones, in excess of ½ inch in size. Remove soil contaminated with petroleum products.
- C. Place topsoil to finish grade in areas where plantings are indicated.

3.08 TOLERANCES

- A. Top Surface of Subgrade: Plus, or minus 0.10 foot (1-3/16inches) from required elevation.
- B. Top Surface of Finish Grade: Plus, or minus 0.04 foot (1/2 inch).

3.09 REPAIR AND RESTORATION

- A. Existing Facilities, Utilities and Site Features to Remain: If damaged due to this work, repair or replace to original condition.

3.10 FIELD QUALITY CONTROL

- A. See Section 31 2323 for compaction density testing.

3.11 CLEANING

- A. Remove unused stockpiled topsoil and subsoil. Grade stockpile area to prevent standing water.
- B. Leave site clean and raked, ready to receive landscaping.

END OF SECTION

SECTION 31 2300 STRUCTURAL EXCAVATION, BACKFILL & COMPACTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Excavation for structures.
- B. Backfill and compaction for structures.

1.02 RELATED REQUIREMENTS

- A. Section 01 1000 – Summary: Contract descriptions, description of alterations work, and work by others, future work, occupancy conditions, use of site and premises work sequence.
- B. Section 01 3000 – Administrative Requirements: Submittal procedures, project meetings, progress schedules and documentation, reports, coordination.
- C. Section 01 4000 – Quality Requirements: Procedures for testing, inspection, mock-ups, reports, certificates, use of reference standards.

1.03 REFERENCE STANDARDS

- A. ASTM D 1557 – Test Method for Moisture-Density Relations of Soil and Soil- Aggregate Mixtures Using 10 lb. (4.5 kg) Rammer and 18 inch (457mm) Drop.
- B. ASTM D 2487 – Classification of Soils for Engineering Purposes.
- C. ASTM D 2922 – Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
- D. ASTM D 3017 – Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

PART 2 PRODUCTS

2.01 MATERIALS

- A. Structural Fill: On-site or off-site natural soil free from organic matter. Debris, vegetation, stones larger than 6 inches and frozen material and in accordance with ASTM D 2487 as follows:
 - 1. GW – Well graded gravels, gravel sand mixtures, little or no fines.
 - 2. GP – Poorly graded gravels, gravel sand mixtures, little or no fines.
 - 3. GM – Silty gravels, gravel sand silt mixtures.
 - 4. GC – Clayey gravels, gravel sand clay mixtures.
 - 5. SW – Well graded sands, gravelly sands, little or no fines.
 - 6. SP – Poorly graded sands, gravelly sands, little or no fines.
 - 7. SM – Silty sands, sand silt mixture.
 - 8. SC – Clayey sands, sand clay mixtures.
- B. Common Fill: same as structural fill plus soils classified in ASTM D 2487 as follows:
 - 1. ML – Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
 - 2. CL – Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
- C. Sand: Clean, granular material meeting standard gradation per ASTM D 2487.

PART 3 EXECUTION

3.01 PREPARATION

- A. See Section 01 7000 for additional requirements.
- B. Identify required lines, elevations and grades.
- C. Protect benchmarks, property corners and grade stakes.
- D. Locate and identify utilities that are to remain and protect them from damage.
- E. Protect plant life, turf, fences, structures and other site improvements from damage.

3.02 EXCAVATION

- A. Excavate structure area to line and grade. Do not excavate below indicated depth except to remove unsuitable material.
- B. Dispose of unsuitable material. Stockpile suitable material for reuse as backfill.
- C. Scarify surface of excavated areas and compact to the degree required for subsequent backfill.
- D. Excavation walls more than five feet in depth shall be shored or cut back to a stable slope, meet requirements of Department of Labor, Occupational Safety and Health Administration (OSHA).
- E. Provide necessary equipment to remove water from excavation and keep foundation system dry until formed and poured.

3.03 BACKFILLING & COMPACTION

- A. Place fill in continuous layers not exceeding eight (8) inches compacted thickness.
- B. Maintain optimum moisture content of fill material to accomplish the required degree of compaction.
- C. Do not place frozen material and do not place on frozen ground.
- D. Backfill interior and exterior of walls simultaneously to prevent overturning or lateral soil forces on wall.
- E. Do not backfill against walls prior to completion of the curing period.
- F. Compact to the percent of maximum dry density as listed in ASTM D 1557.

3.04 TOLERANCES

- A. Under paved areas: plus, or minus 0.1 foot.
- B. Under slabs-on-grade: plus, or minus 0.1 foot.
- C. Under turf: plus, or minus 0.2 foot.

3.05 FIELD QUALITY CONTROL

- A. Field inspection will be performed by an authorized representative of the owner (approved testing consultant).
- B. Contractor is responsible for meeting the compaction requirements. The owner has the option to request that the contractor hire an independent testing firm to perform compaction tests to confirm the in-place density.
- C. Determination of moisture content shall be in accordance with ASTM D 3017. Determination of density shall be in accordance with ASTM D 2922.

END OF SECTION

SECTION 31 2316 EXCAVATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Excavating for site improvement structures.
- B. Excavating for landscaping.

1.02 RELATED REQUIREMENTS

- A. Section 31 1000 – Site Clearing
- B. Section 31 2200 – Grading
- C. Section 31 2323 – Fill

1.03 REFERENCES

- A. ASTM E698 – Standard Test Method Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lb per cubic foot (600 kN-m m³)).
- B. ASTM D1556 – Standard Test Method for Density of Soil in Place by the Sand-Cone Method.
- C. ASTM D2167 – Standard Test Method for density and Unit Weight of Soil in Place by the Rubber Balloon Method.
- D. ASTM D2922 – Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
- E. Local utility standards when working within 24 inches of utility lines.

1.04 PROJECT CONDITIONS

- A. Verify that survey bench mark and intended elevations for the work are as indicated.
- B. If project conditions vary substantially from proposed, notify owner immediately before proceeding.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 PREPARATION

- A. Identify required lines, levels, contours and datum locations.
- B. See Section 31 2200 for additional requirements.
- C. Locate, identify and protect utilities that remain and protect from damage.
- D. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving and curbs from excavating equipment and vehicular traffic.

3.02 EXCAVATING

- A. Underpin adjacent structures that could be damaged by excavating work.
- B. Excavate to accommodate new structures and construction operations.
- C. Notify owner of unexpected subsurface conditions and discontinue affected work in area until notified to resume work.
- D. Slope banks of excavations deeper than 4 feet to angle of repose or less until shored.
- E. Do not interfere with 45 degree bearing splay of foundations.
- F. Cut utility trenches wide enough to allow inspection on installed utilities.
- G. Hand trim excavations. Remove loose matter.

- H. Correct areas that are over-excavated and load-bearing surfaces that are disturbed; see Section 31 2323.
- I. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- J. Remove excavated material that is unsuitable for re-use from site.
- K. Remove excess excavated material from site.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 – Quality Requirements, for general requirements for field inspection and testing.
- B. Provide for visual inspection of excavated surfaces before continuing work.

3.04 PROTECTION

- A. Prevent displacement of banks and keep loose soil from falling into excavation; maintain soil stability.
- B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.
- C. Prevent structures, utilities and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earth operations.

END OF SECTION

SECTION 31 2323

FILL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Filling, backfilling and compacting for site improvement structures.
- B. Filling holes, pits and excavations generated as a result of removal (demolition) operations.
- C. Fill for over-excavation.

1.02 RELATED REQUIREMENTS

- A. Section 31 2200 – Grading: Site grading.
- B. Section 31 2316 – Excavation: Removal and handling of soil to be re-used.

1.03 REFERENCE STANDARDS

- A. AASHTO T 180 – Standard Specification for Moisture-Density Relations of Soils Using a 4.54 kg (10-lb) Rammer and a 457 mm (18 in.) Drop; American Association of State Highway and Transportation Officials; 2010.
- B. ASTM D698 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)); 2012.
- C. ASTM D1556 – Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method; 2007.
- D. ASTM D1557 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN m/m³)); 2012.
- E. ASTM D2167 – Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method; 2008.
- F. ASTM D3017 – Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth); 2005.

1.04 SUBMITTALS

- A. Compaction Density Test Reports

1.05 DELIVERY, STORAGE AND HANDLING

- A. When necessary, store materials on site in advance of need.
- B. When fill materials need to be stored on site, locate stockpiles where indicated.
 - 1. Separate differing materials with dividers or stockpile separately to prevent intermixing.
 - 2. Prevent contamination
 - 3. Protect stockpiles from erosion and deterioration of materials.

PART 2 PRODUCTS

2.01 FILL MATERIALS

- A. Fill: Type S1 Fill as specified in Section 31 0513.
- B. Fill: Type S2 Fill as specified in Section 31 0513.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that survey bench marks and intended elevations for the work are as indicated.

- B. Identify required lines, levels, contours and datum locations.

3.02 FILLING

- A. Fill to contours and elevations indicated using unfrozen materials.
- B. Fill up to subgrade elevations unless otherwise indicated.
- C. Employ a placement method that does not disturb or damage other work.
- D. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
- E. Maintain optimum moisture content of fill materials to attain required compaction density.
- F. Granular Fill: Place and compact materials in equal continuous layers not exceeding 6 inches compacted depth.
- G. Soil Fill: Place and compact material in equal continuous layers not exceeding 8 inches compacted depth.
- H. Correct areas that are over-excavated.
 - 1. Other areas: Use general fill, flush to required elevation, compacted to minimum 97 percent of maximum dry density.

3.03 FILL AT SPECIFIC LOCATIONS

- A. Fill Type (S1) Granular Fill, to 6 inches below finish grade. Place material in 8-inch lifts, compact uniformly to 90 percent maximum dry density.
- B. Fill under Landscaped Areas:
 - 1. Fill Type (S1) General Fill, to 12 inches below finish grade. Place material in 8-inch lifts, compact uniformly to 90 percent of maximum dry density.
- C. Fill Under Asphalt paving:
 - 1. Compact subsoil to 95 percent of its maximum dry density.
 - 2. Fill Type (S2) Structural Fill, place material in 8-inch lifts, compact uniformly to 95 percent of maximum density.
 - 3. Cover with Fill Type (A3, 3-inch Dense graded Base Aggregate, 6 inches minimum thickness, compact uniformly to 95 percent of maximum dry density.
 - 4. Cover with Fill Type (A2 1-1/4-inch Dense graded Base Aggregate, 4 inches minimum thickness, compact uniformly to 95 percent of maximum dry density.
- D. Fill to Correct Over-Excavation:
 - 1. Fill Type (S2) Structural Fill, flush to required elevation, compact uniformly to 95 percent of maximum dry density.

3.04 TOLERANCES

- A. Top Surface of General Filling: Plus, or minus 1 inch from required elevations.
- B. Top Surface of Filling Under Paved Areas: Plus, or minus 1 inch from required elevations.

3.05 FIELD QUALITY CONTROL

- A. See Section 01 4000 – Quality Requirements, for general requirements for field inspection and testing.
- B. Perform compaction density testing on compacted fill in accordance with ASTM D1556, ASTM D2167, ASTM D3017 or ASTM D6938.
- C. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D698 (“standard Proctor”), ASTM 1557 (“modified Proctor”), or AASHTO T 180.
- D. If tests indicate work does not meet specified requirements, remove work, replace and test.
- E. Frequency of Tests: As specified by Soil Engineer or Testing Agency.
- F. Proof roll compacted fill at surfaces that will be under slabs-on-grade.

3.06 CLEANING

- A. Leave unused required materials in a neat, compact stockpile
- B. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.
- C. Leave borrow areas in a clean and neat condition. Grade to prevent standard surface water.

END OF SECTION

SECTION 31 2505 EROSION & SEDIMENT CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Erosion control measures and slope protection as required to minimize soil erosion by wind and washing during construction.

1.02 REFERENCES

- A. U.S. Department of Natural Resources and Conservation (formerly USDA SCS)

1.03 PERFORMANCE REQUIREMENTS

- A. Develop construction plan and procedures which:
 - 1. Reduce erosion potential.
 - 2. Contain erosion within project limits.
 - 3. Provide for immediate response when necessary.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Silt fence and accessories per drawings.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Check over entire project site and note all potentially sensitive areas before any work begins.
- B. After work begins, check protected areas daily.
- C. After each rainfall check over all disturbed areas within the site and make appropriate adjustments and corrections.

3.02 INSTALLATION

- A. Install erosion control fencing in all erodible areas according to manufacturers' instructions.

3.03 FIELD QUALITY CONTROL

- A. Instruct all workers on the importance of erosion control and proper procedures to follow when erosion problems are encountered.
- B. Remove all erosion control barriers from site when vegetation has rooted.
- C. Properly dispose of all material used for erosion control when removed.

END OF SECTION

SECTION 32 1216 ASPHALT PAVING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Aggregate base course.
- B. Double course bituminous concrete paving for patching as required.

1.02 RELATED REQUIREMENTS

- A. Section 31 2200 – Grading: Preparation of site.
- B. Section 31 2323 – Fill: Compacted subgrade for paving.

1.03 REFERENCE STANDARDS

- A. AI MS-2 – Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types; The Asphalt Institute; 1994.
- B. AI MS 19 – A Basic Asphalt Emulsion Manual; The Asphalt institute; Third Edition.
- C. ASTM D946 – Standard Specification for penetration – Graded Asphalt Cement for use in Pavement Condition; 2009a.

1.05 FIELD CONDITIONS

- A. Do not place asphalt when ambient air or base surface temperature is less than 40 degrees F, or surface is wet or frozen.
- B. Place bitumen mixture when temperature is not more than 15 F degrees below bitumen supplier's bill of lading and not more than maximum specified temperature.

1.06 WARRANTY

- A. Special Warranty: Provide a one (1) year warranty on the materials and workmanship for all items under this section of work from date of Substantial Completion.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Asphalt Cement: ASTM D946
- B. Aggregate for Base Course: In accordance with State of Wisconsin DOT standards.
- C. Aggregate for Base Course: Angular crushed washed stone; free of shale, clay, friable material and debris.
- D. Aggregate for Binder Course: In accordance with State of Wisconsin DOT standards.
- E. Aggregate for Binder Course: Angular crushed washed stone; free of shale, clay, friable material and debris.
- F. Aggregate for Wearing Course: In accordance with State of Wisconsin DOT standards.
- G. Aggregate for Wearing Course: Angular crushed washed stone; free of shale, clay, friable material and debris.
- H. Fine Aggregate: In accordance with State of Wisconsin DOT standards.
- I. Mineral Filler: Finely ground particles of limestone, hydrated lime or other mineral dust, free of foreign matter.
- J. Tack Coat: Homogeneous, medium curing liquid asphalt.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that compacted subgrade is dry and ready to support paving and imposed loads.
- B. Verify gradients and elevations of base are correct.

3.02 BASE COURSE

- A. Place and compact base course.

3.03 PREPARATION – TACK COAT

- A. Apply tack coat in accordance with manufacturer's instructions.
- B. Apply tack coat on asphalt or concrete surfaces over subgrade surface at uniform rate of 1/3 gal/sq. yd.
- C. Coat surfaces of manhole frames with oil to prevent bond with asphalt pavement. Do not tack coat these surfaces.

3.04 PLACING ASPHALT PAVEMENT – DOUBLE COURSE

- A. Place asphalt binder course within 24 hours of applying primer or tack coat.
- B. Place binder course to thickness identified in schedule at end of section or as shown on plans.
- C. Place wearing course within two hours of placing and compacting binder course.
- D. Compact pavement by rolling to specified density. Do not displace or extrude pavement from position. Hand compact in areas inaccessible to rolling equipment.
- E. Perform rolling with consecutive passes to achieve even and smooth finish, without roller marks.

3.05 TOLERANCES

- A. Flatness: Maximum variation of ¼ inch measured with 10-foot straight edge.
- B. Compacted Thickness: With ¼ inch of specified or indicated thickness.
- C. Variation from True Elevation: With ½ inch.

3.06 FIELD QUALITY CONTROL

- A. See Section 01 4000 – Quality Requirements, for general requirements for quality control.
- B. Provide field inspection and testing. Take samples and perform tests in accordance with AI MS-2.

3.07 PROTECTION

- A. Immediately after placement, protect pavement from mechanical injury for 2 days or until surface temperature is less than 140-degree F.

3.08 SCHEDULE

- A. Pavement at Parking Areas: Two courses; binder course of 1-1/2-inch compacted thickness and wearing course of 1-1/2-inch compacted thickness.

END OF SECTION