

WORK SCOPE DOCUMENTS
FOR
CITY OF SOUTH LYON
MCHATTIE PARK HOUSE AND PARKS & REC BUILDING DEMO

JANUARY 22, 2020

HRC JOB NO. 20190971



555 Hulet Drive • P.O. Box 824
Bloomfield Hills, Michigan 48303-0824

ADVERTISEMENT FOR BIDS
MCHATTIE PARK HOUSE AND PARKS & REC BUILDING
DEMOLITION PROJECT
CITY OF SOUTH LYON

Sealed proposals for the Building Demolition Project will be received by the South Lyon City Clerk at South Lyon City Hall, located at 335 S. Warren Street, South Lyon, MI 48178, until **2:00 p.m.**, Local Time on **Tuesday, February 18, 2020**.

Bidders shall review and comply with the Instructions to Bidders, which are incorporated by reference, and carefully review all Contract Documents, as defined in the Instructions to Bidders. Bids submitted after the exact time specified for, receipt will not be considered.

The Contracts will consist of the following principal items of work and appurtenances as specified herein and shown on the Contract Drawings.

Description of Work

- Demolition of the buildings and attached paving/equipment at the following two sites:
 - McHattie Park House – 461 Washington Street, South Lyon, MI
 - Former Parks & Recreation Building – 318 West Lake Street, South Lyon, MI
- All existing utilities are to be removed to the property line and capped per South Lyon DPW requirements.
- Contractor will submit for and obtain Soil Erosion Control and Demolition permit for both sites.
- The attached driveway at 318 West Lake Street will be removed back to the public sidewalk. The existing sidewalk and curb cut are to remain.
- Existing trees and shrubs are to remain at both sites.
- Secure sites during demolition as required to protect the public as well as demolition operations.
- Once demolition is complete, remaining site depressions are to be backfilled. All disturbed areas on each site are to be graded to ensure proper stormwater drainage, installed with topsoil and seeded.
- Gas and Electric have been disconnected at both buildings. Documentation will be provided to the awarded bidder.
- Both buildings currently have Asbestos Containing Materials (ACM) – the Owner is having these materials removed under a separate work scope. Demolition Project work is not to commence until all ACM's have been removed and the abatement contractor has vacated the buildings. Substantial Completion for the Asbestos Removal Project has been set for May 31, 2020.

Documents

Copies of Specifications and Proposal Forms shall be available at www.bidnetdirect.com

Proposals submitted by Bidders who have been debarred, suspended, or made ineligible by any Federal Agency will be rejected.

Each bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any bid.

The successful bidder will be required to furnish satisfactory Performance Bond.

A mandatory pre-bid meeting and walkthrough will be held on **Friday, January 31, 2020 at 9:00am** at the Former Parks & Rec Bldg. at 318 West Lake Street, South Lyon, MI. Meeting attendees will also be able to visit the McHattie Park House as part of the meeting.

Bidders are to submit any questions via email to Adrianna Melchior at Hubbell, Roth & Clark, Inc. at amelchior@hrcengr.com by **5:00pm on Wednesday, February 5, 2020**. Responses to all questions will be issued to bidders no later than **2:00pm on Friday, February 7, 2020**.

CITY OF SOUTH LYON

Published on January 22, 2020.

SECTION 00120

INSTRUCTIONS TO BIDDERS

SCOPE OF WORK

The work under this Contract shall consist of the furnishing of all labor, material, equipment, services, and all incidental items necessary to complete the project in accordance with the Contract Documents.

Work includes the complete removal of the McHattie Park House at 461 Washington Street and the Former Parks and Recreation Building at 318 West Lake Street, including any appurtenant sheds/ equipment, site furnishings, and attached driveways.

OBSERVATION OF SITE

Before submitting a Proposal, each bidder shall personally inspect the site of the proposed work to arrive at a clear understanding of the conditions under which the work is to be done.

He shall be held to have compared the premises with the Drawings and Specifications and to have satisfied himself as to the conditions of the premises, existing constructions, and any other conditions affecting the carrying out of the work, before delivery of his Proposal.

No allowance or extra consideration on behalf of the Bidder will subsequently be allowed by reason of error or oversight on the part of the Bidder or on account of interferences by the Owner's or by other Bidder's activities.

SOIL CONDITIONS

The Contractor, as such and as bidder, shall make his own determination as to soil and/or rock conditions and he shall complete the work in whatever material and under whatever conditions he may encounter or create, without extra cost to the Owner. This shall apply whether or not borings are shown on the Drawings.

All bidders conducting soil tests shall restore the area of their testing to original condition as closely as possible.

The Owner does not guarantee that the ground encountered during construction will conform with any boring information furnished herein.

ADVERTISEMENT

The published Advertisement for the proposed work contains information necessary to bidders. A copy of the Advertisement shall be considered a part of the Instructions to Bidders as fully as if repeated herein.

PROPOSALS

Proposals will be received in accordance with the Advertisement for Bids, and shall be submitted only on forms provided by the Engineer.

Proposals shall be enclosed in sealed envelopes marked with the name of the project and bidder and shall be delivered to the designated location on or before the bid time as specified in the Advertisement for Bids.

Proposals shall be made in full conformity with all the conditions set forth in the drawings and in these specifications. Bids are firm and cannot be withdrawn for a period of 60 days after opening of the bids, unless otherwise specified in the Advertisement for Bids.

NAME AND STATUS OF BIDDER

The name and legal status of the bidder, either as a corporation, partnership, or individual, shall be stated in the Proposal.

Anyone signing a Proposal as an agent of another or others, must submit with the Proposal, legal evidence of his authority to do so.

The place of residence of each bidder, or the office address and telephone number in the case of a firm or company, with County and State, must be given after his signature.

BIDDER'S QUALIFICATIONS

It is the intention of the Owner to award this Contract to a Bidder fully capable, both financially and with regard to experience to perform and complete the work in a satisfactory manner. Each bidder under consideration is required to furnish the Owner the following information sworn to under oath by him:

1. Performance record.
2. The address and description of the bidder's plant and place of business.
3. Itemized list of demolition equipment available for use on the project.
4. Such additional information as will satisfy the Owner that the bidder is adequately prepared, in technical experience and otherwise, to fulfill the Contract.
5. Have a minimum of 10 years' documented experience in building demolition for similar projects in the State of Michigan.
6. Maintain Insurance limits no less than:
 - a. Workers' Compensation
Coverage A - Compensation.....Statutory
Coverage B - Employer's Liability\$500,000
 - b. Comprehensive General Liability
Bodily Injury and Property Damage\$1,000,000 Each Occurrence
Combined Single Limit.....\$2,000,000 Per Job Aggregate
.....\$1,000,000 Completed Operations Aggregate
 - c. Comprehensive Automobile Liability
Bodily Injury and Property Damage\$1,000,000 Each Accident
 - d. Owner's Protective Liability Policy
Bodily Injury and Property Damage\$1,000,000 Per Occurrence
Combined Single Limit.....\$1,000,000 Aggregate
 - e. Builder's Risk & Installation Floater Cost to replace at time of loss
 - f. Umbrella or Excess Liability \$2,000,000 Per Occurrence
.....\$2,000,000 Aggregate

Note: Policies shall include an endorsement which includes the Owner and Engineer as additional insured's.

7. References and contact information for (3) three similar projects completed in the last 10 years.

EXPLANATION TO BIDDERS BY ADDENDUMS

Neither the Owner nor the Engineer will give verbal answers to inquiries, regarding the meaning of the Drawings or Specifications, or give verbal instructions, previous to the award of the Contract. Any verbal statements regarding same by any persons, previous to the award, shall be unauthoritative.

Explanations desired by bidders shall be requested of the Engineer in writing and, if explanations are necessary, a reply will be made in the form of an addendum, a copy of which will be forwarded to each bidder whose work is affected.

Addendums issued to bidders prior to date of receipt of proposals shall become a part of the Specifications, and all proposals shall include the work described in the addendums.

No inquiry received within 4 days of the date fixed for the opening of bids will be given consideration.

Failure of the Engineer to send, or of the bidder to receive, any such interpretations shall not relieve the bidder from obligation under his bid as submitted.

RIGHT TO ACCEPT, TO REJECT, AND TO WAIVE DEFECTS

The Owner reserves the right to accept any Proposal, to reject any or all Proposals, and to waive any defects or irregularity in the Proposal if it appears advantageous to the Owner to do so.

Each bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any bid.

TIME OF COMPLETION

The Owner and the individual citizens of the municipality affected by this project are vitally concerned with the prompt completion of the construction together with the cleanup and restoration of roads and lawns within the time allowed in the Proposal.

The Bidder shall use sufficient labor and equipment to complete and place in service all of the work being constructed within this Contract within the time specified in the Proposal. The surface cleanup shall follow closely behind construction with earth spoil removed from lawns and roads and any trenches neatly finished by the end of each work day. Failure of the Bidder to comply with this type of workmanlike job will result in the suspension of construction operations until the cleanup is effected.

If the Bidder shall be unavoidably delayed in beginning or fulfilling this Contract by reason of excessive storms or floods, or by Acts of Providence, or by strikes, or by court injunction, or by stopping of the work by the Owner because of any emergency or public necessity, or by reason of alterations ordered by the Owner, the Bidder shall have no valid claim for damages on account of any cause or delay; but he shall in such case be entitled to such an extension of the above time limit herein, as the Engineer shall adjudge to be just and reasonable; provided, however, that formal claim for such extension shall be made in writing by the Bidder within a week after the date upon which such alleged cause or delay shall have occurred.

FAIR EMPLOYMENT PRACTICES

Section 4 of the Fair Employment Practices Act PA 1955, No. 251, provides:

Section 4. Every Contract to which the State or any of its political or civil subdivisions is a party shall contain a provision requiring the Bidder and his subcontractors not to discriminate against any employee or applicant for employment, to be employed in the performance of said contract, with respect to his hire, tenure, terms, conditions, or privileges of employment, or any matter directly or indirectly related to employment, because of his race, color, religion, national origin or ancestry. Breach of this covenant may be regarded as a material breach of the Contract.

Section 4A of the Act provides:

Section 4A. Every contract which the State or any of its political or civil subdivisions is a party shall contain a provision requiring the Bidder and his subcontractors not to discriminate against any employee or applicant for employment to be employed in the performance of such contract with respect to his hire, tenure, terms, conditions or privileges of employment or any matter directly or indirectly related to employment because of his age or sex, except where based on a bona fide occupational qualification.

END OF SECTION

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PROPOSAL
FOR
MCHATTIE PARK HOUSE AND PARKS & REC BUILDING DEMO
CITY OF SOUTH LYON

City of South Lyon
335 S. Warren Street
South Lyon, MI

Bids Due: Tuesday, February 18, 2020
On or Before 2:00 pm, Local Time
HRC Job No. 20190971

To Prospective Bidders:

Name of Bidder: _____

Address: _____

Date: _____ Telephone: _____ Fax: _____

The above, as Bidder, hereby declares this bid is made in good faith without fraud or collusion with any persons bidding, and that the Drawings, Specifications, and all other information referenced in the Instructions to Bidders have been examined. Further, the Bidder is familiar with the location of the work described herein and is fully informed as to the nature of the work and the conditions relating to the performance of the Contract.

The Bidder acknowledges that no representations or warranties of any nature whatsoever have been received, or are relied upon from the City of South Lyon, its agents or employees, as to any conditions to be encountered in accomplishing the work and that the bid is based solely upon the Bidder's own independent judgment.

The above, as Bidder, hereby certifies that the Drawings, Specifications, and other data provided by the Owner for bidding purposes have been examined. Further, the undersigned certifies that the proposed construction methods have been reviewed and found acceptable for the conditions which can be anticipated from the information provided for bidding.

The Bidder hereby affirms that the site of work has been inspected and further declares that no charges in addition to the Individual Unit Prices shall be made on account of any job circumstances or field conditions which were present and/or ascertainable prior to the bidding. In addition, The Contractor, as such and as Bidder, shall make the determination as to existing soil conditions and shall also complete the work under whatever conditions created by the Contractor/Bidder's sequence of construction, construction methods, or other conditions the Contractor/Bidder may create, at no additional cost to the Owner.

The above, as Bidder, confirms knowledge of the location of the proposed Demolition Project and appurtenant construction in the City of South Lyon, Michigan, and the conditions under which it must be performed; and also declares to have carefully examined the Drawings, Specifications, and Contract Documents which the Bidder understands and accepts as sufficient for the purpose of providing services for said Project, and appurtenant work, and agrees to contract with the City of South Lyon to furnish all labor, materials, tools, equipment, facilities and supervision necessary to do all the work specified and prescribed, in strict accordance with the Owner's General Conditions, and with the full intent of the Drawings and Specifications, and will accept in full payment therefore the sum of:

BASE BID

<u>Item</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total Cost</u>
1. McHattie Park House Demolition	1	@ Lump Sum	= \$ _____
2. McHattie Park House Site Grading & Restoration	1	@ Lump Sum	= \$ _____
3. Parks & Rec Bldg Demolition	1	@ Lump Sum	= \$ _____
4. Parks & Rec Bldg Site Grading & Restoration	1	@ Lump Sum	= \$ _____
Total Amount of Bid			\$ _____

ALTERNATES

Voluntary Alternates proposed by the Bidder will be considered at the discretion of the Owner. All alternates shall be clearly marked whether they represent an add or deduct to the Base Bid Price quoted herein. All Alternates which are quoted shall be complete and the price shall include all Bidder mark-ups. Bidder is to include a detailed description of the proposed alternate.

ALTERNATE A –

ALTERNATE A Lump Sum Price \$ _____

The Owner reserves the right to award the Base Bid or the Base Bid plus any or individual Alternate or combination of Alternates, depending upon the availability of funds.

The Owner, at its sole discretion, reserves the right to award to the Bidder who, in the sole determination of the Owner, will best serve the interest of the Owner. The Owner reserves the right to accept any bid, to reject any or all bids, to waive any and all informalities involving price, time, or changes in the work, and to negotiate contract terms with the successful Bidder, and the right to disregard all nonconforming, nonresponsive, unbalanced or conditional bids. However, it is the intention of the Owner to award to the low total bid to one bidder. Also, the Owner reserves the right to reject the bid of any Bidder if the Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the bid is not responsive or the Bidder is unqualified, of doubtful financial ability, or fails to meet any other pertinent standard or criteria established by the Owner.

Each bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any bid.

TAXES

The Bidder affirms that all applicable Federal, State and Local taxes of whatever character and description are included in all prices stated in this Form of Proposal.

ADDENDA

The Bidder acknowledges the following Addenda, covering revisions to the drawings or specifications and the cost, if any, of such revision has been included in the quoted proposal:

Addendum No. _____	Dated _____
Addendum No. _____	Dated _____
Addendum No. _____	Dated _____
Addendum No. _____	Dated _____

FEES

The Bidder shall refer to the General Conditions for allowable Fees for additional work performed, upon Owner's written authorization, by Bidder's own forces and/or for additional work, upon Owner's written authorization, by Bidder's subcontractors.

TIME OF COMPLETION

If awarded the Contract for the Building Demolition Project, we agree to have all work substantially completed by June 30, 2020.

BIDS TO REMAIN FIRM

The price stated in this Proposal shall be guaranteed for a period of not less than (60) days from the bid due date and if authorized to proceed within that period, the bidder agrees to complete the work covered by the Proposal at said price.

If this Proposal is accepted by the Owner and the undersigned shall fail to contract as aforesaid and to furnish the required surety bonds within fifteen (15) days after being notified of the acceptance of their bid, then the undersigned shall be considered to have abandoned the contract.

Company Name: _____

Signature: _____ Title: _____

Address: _____

County: _____ State: _____

Telephone No.: _____ Fax No.: _____

Email Address: _____

LEGAL STATUS OF BIDDER

This Bid is submittal in the name of:

(Print) _____

The undersigned hereby designates below the business address to which all notices, directions or other communications may be served or mailed:

Street _____

City _____

State _____ Zip Code _____

The undersigned hereby declares the legal status checked below:

☐ INDIVIDUAL

☐ INDIVIDUAL DOING BUSINESS UNDER AN ASSUMED NAME

☐ CO-PARTNERSHIP

The Assumed Name of the Co-Partnership is registered in the County of _____, Michigan

☐ CORPORATION INCORPORATED UNDER THE LAWS OF THE STATE OF _____

_____. The Corporation is

☐ LICENSED TO DO BUSINESS IN MICHIGAN

☐ NOT NOW LICENSED TO DO BUSINESS IN MICHIGAN

The name, titles, and home addresses of all persons who are officers or partners in the organization are as follows:

A corporation duly organized and doing business under the laws of the State of _____

NAME AND TITLE

HOME ADDRESS

Signed and Sealed this _____ day of _____, 20__.

By (Signature) _____

Printed Name of Signer _____

Title _____

END OF SECTION

CONTRACT

ARTICLES OF AGREEMENT, Made and entered into this _____

day of _____, 20__, by and between

(A Michigan Municipal Corporation),

Party of the first part, hereinafter called the Owner, and _____

in the _____, County of _____

and State of Michigan, Party of the second part, hereinafter called the Contractor, to wit:

Item 1) That all proposals, specifications, plans, bonds, etc., hereto attached or herein referred to, shall be and are made a part of this agreement and contract.

Item 2) That the Contractor, under penalty of bond attached, shall furnish all labor, materials, and appliances necessary, and do all the work as set forth in the proposal.

HRC Job No. 20190971

according to the specifications, plans, etc., which have been made a part of this contract in a manner, time, and place, all and singular, as herein set forth.

IN CONSIDERATION WHEREOF, said Party of the First Part, for it and its successors, promises and agrees to pay to said Party of the Second Part, the sum of:

_____ Dollars (\$_____)

as provided in the attached proposal, all in the time and manner indicated in the specifications.

For the faithful performance of all and singular of the stipulations, terms and conditions of this Agreement, said parties respectfully bind themselves, their successors, heirs, executors, administrators and assigns.

Hubbell, Roth & Clark, Inc.
Job 20190971

IN WITNESS WHEREOF, Said Parties have signed this Contract, in duplicate, on the date first above written.

WITNESS:

(A Michigan Municipal Corporation)
Party of the First Part

By: _____

WITNESS:

(A Michigan Corporation)
Party of the Second Part

By: _____

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned _____

_____ as Principal,

and _____

of _____ as Sureties,

are hereby held and firmly bound unto the "Owner" _____

in the full and just sum of _____ Dollars

(\$ _____) for the payment of which well and truly to be made, we hereby jointly and severally

bind ourselves, our heirs, executors, administrators, successors and assigns.

Signed and sealed this _____ day of _____ 20____.

The condition of the above obligation is such that if said _____

shall well and faithfully do and perform the things agreed by _____

to be done and performed by the annexed contract, according to the terms thereof, then this obligation shall be void; otherwise, the same shall remain in full force and effect.

It is mutually understood and agreed that in cases where changes are required, either by order of the Engineer, or Owner, or by mutual agreement, such changes or changes shall not modify, discharge or release this bond.

(A Michigan Corporation)

(Seal)

Principal

(Seal)

Surety

Signed, Sealed and Delivered
in the Presence of:

SECTION 01220

BID ITEM DESCRIPTION

PART 1 GENERAL

1.1 SCOPE

- A. This Section describes the method of measurement and basis of payment for several items of Work included in the Contract and specified in the Proposal. It does not necessarily include all bid items listed.
 - 1. The Contractor shall provide all labor, material, tools, equipment and services required to complete the Work specified herein and indicated on the Plans and all other items necessary to complete the job, whether specifically mentioned or implied.
 - 2. Payment will only be made for the items listed in the Proposal Form.
- B. The Owner will make no allowances for items not included in the Proposal Form.

1.2 ITEMS OF THE PROPOSAL

Site Grading and Restoration

As part of the project, all disturbed areas shall be graded and restored upon completion of the work in accordance with the Grading Plan and per Specification Sections 01221, 01222, 02200, 02221, 02929, 02930 and 02970 and as indicated herein.

Following demolition and backfill of the site as per the aforementioned plan and specifications, final restoration of the site shall be completed with four (4) inches of screened topsoil and hydro-seeding. The seed mixture shall conform to 2012 MDOT Standard Specifications for Highway Construction, and as per the following: Chemical fertilizer shall be applied at a rate of 400 lbs/acre; Mulch shall consist of recycled newspaper and contain green pigment; Mulch shall be applied at the minimum rate of 1 lb/gallon; and the entire contents of the tank must be emptied within two (2) hours. The hydro-seed mixture will not be permitted to be sprayed after 2 hours. Unless otherwise specified herein, the Contractor shall keep all restored areas watered for a minimum of 14 days at his expense.

All costs for grading, backfill and final lawn restoration of the site and within the limits of the entire project as a result of the Contractor's operations, including staging and stockpiling, as stipulated in the aforementioned plan and specifications and herein, are to be included in the **lump sum (LS)** price bid for "**Site Grading and Restoration.**" The Contractor is also responsible for the restoration and/or repair of any and all non-lawn areas caused as a result of his operations.

END OF SECTION

SECTION 01221

SOILS FOR EARTHWORK

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Subsoil materials.
 - 2. Topsoil materials.

1.2 MEASUREMENT AND PAYMENT

All costs incurred in complying with the requirements of the specification shall be included in the lump sum bid amount for "Site Grading and Restoration."

1.3 REFERENCES

- A. American Association of State Highway and Transportation Officials:
 - 1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
- B. ASTM International:
 - 1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
 - 2. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
 - 3. ASTM D2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System).

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Samples: Submit, in air-tight containers, 10 lb sample of each type of soils to be utilized for fill to testing laboratory.
- C. Materials Source: Submit name of imported materials source.
- D. Manufacturer's Certificate: Certify Products to meet or exceed specified requirements.

1.5 SUSTAINABLE DESIGN SUBMITTALS

- A. Section 01 81 13 - Sustainable Design Requirements: Requirements for sustainable design submittals. (As required)
- B. Manufacturer's Certificate: Certify products meet or exceed specified sustainable design requirements.

1. Materials Resources Certificates:
 - a. Certify source for local and regional materials and distance from Project site.
- C. Product Cost Data: Submit cost of products to verify compliance with Project sustainable design requirements. Exclude cost of labor and equipment to install products.
 1. Provide cost data for the following products:
 - a. Local and regional products.

1.6 QUALITY ASSURANCE

- A. Furnish each subsoil and topsoil material from single source throughout the Work.
- B. Sustainable Design Requirements:
 1. Regional Materials: Furnish materials extracted, processed, and manufactured within 100 miles of Project site.
- C. Perform Work in accordance with the Michigan Department of Transportation Standard Specifications for Construction.
- D. Maintain one copy on site.

PART 2 PRODUCTS

2.1 SUBSOIL MATERIALS

- A. Subsoil shall be free of all organic materials in excess of three (3%) percent loss by ignition, peat, muck, marl, blue and grey clays.
- B. Imported Subsoil or Salvaged Materials.
 1. Excavated and re-used material, imported borrow and select or local borrow shall meet Section 2.1.A.
 2. Grading shall be within 0.10 feet of proposed line and grade.
 3. Free of lumps larger than 3 inches, rocks larger than 2 inches and debris.
 4. Imported soils must be tested for contamination prior to delivery to site.

2.2 TOPSOIL MATERIALS

- A. Topsoil Furnished and Applied.
 1. Imported borrow.
 2. Friable loam.
 3. Reasonably free of roots, rocks larger than 1/2 inch, subsoil, debris, large weeds, and foreign matter.
 - a. Screening: Double screened.
 4. Acidity range (pH) of 5.5 to 7.5.
 5. Containing minimum of 4 percent and maximum of 25 percent inorganic matter.
 6. Conforming to ASTM D2487 Group Symbol.
 7. Limit decaying matter to 5 percent of total content by volume.

2.3 SOURCE QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements: Testing and Inspection Services Testing and analysis of soil material.
- B. Testing and Analysis of Subsoil Material: Perform in accordance with ASTM D1557 and AASHTO T180.
- C. Testing and Analysis of Topsoil Material: Perform in accordance with ASTM D1557 and AASHTO T180.
- D. When tests indicate materials do not meet specified requirements, change material and retest.
- E. Furnish materials of each type from same source throughout the Work.

PART 3 EXECUTION

3.1 EXCAVATION

- A. Excavate subsoil and topsoil from areas designated. Strip topsoil to full depth of topsoil in designated areas.
- B. Stockpile excavated material meeting requirements for subsoil materials and topsoil materials.
- C. Remove excess excavated materials subsoil and topsoil not intended for reuse, from site.
- D. Remove excavated materials not meeting requirements for subsoil materials and topsoil materials from site.

3.2 STOCKPILING

- A. Stockpile materials on site at locations designated 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. Prevent intermixing of soil types or contamination.
- E. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.
- F. Stockpile unsuitable and hazardous materials on impervious material and cover to prevent erosion and leaching, until disposed of.

3.3 STOCKPILE CLEANUP

- A. Remove stockpile, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

END OF SECTION

SECTION 01222

FILL

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Backfilling building perimeter to subgrade elevations.
 - 2. Backfilling site structures to subgrade elevations.
 - 3. Fill under slabs-on-grade.
 - 4. Fill under paving.
 - 5. Fill for over-excavation.

1.2 MEASUREMENT AND PAYMENT

All work required by this specification shall be included in the lump sum bid amount for "Site Grading and Restoration."

1.3 REFERENCES

- A. American Association of State Highway and Transportation Officials:
 - 1. AASHTO T180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
- B. ASTM International:
 - 1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
 - 2. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
 - 3. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
 - 4. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
 - 5. ASTM D2922 - Standard Test Method for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
 - 6. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

1.4 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit data for geotextile fabric indicating fabric and construction.
- C. Samples: Submit, in air-tight containers, 10 lb sample of each type of proposed fill to be utilized on the project to the testing laboratory.

- D. Materials Source: Submit name of imported fill materials suppliers.
- E. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.5 SUSTAINABLE DESIGN SUBMITTALS

- A. Sustainable Design Requirements: Requirements for sustainable design submittals. (As required)
- B. Manufacturer's Certificate: Certify products meet or exceed specified sustainable design requirements.
 - 1. Materials Resources Certificates:
 - a. Certify source and origin for salvaged and reused products.
 - b. Certify recycled material content for recycled content products.
 - c. Certify source for local and regional materials and distance from Project site.
- C. Product Cost Data: Submit cost of products to verify compliance with Project sustainable design requirements. Exclude cost of labor and equipment to install products.
 - 1. Provide cost data for the following products:
 - a. Salvaged products.
 - b. Reused products.
 - c. Products with recycled material content.
 - d. Local and regional products.

1.6 QUALITY ASSURANCE

- A. Sustainable Design Requirements:
 - 1. Recycled Content Materials: Furnish materials with recycled content.
- B. Perform Work in accordance with State, County, and Local standards.
- C. Maintain one copy of each document on site.

PART 2 PRODUCTS

2.1 FILL MATERIALS

- A. Subsoil Fill: Granular Material, Class III as specified in Section 01221.
- B. Structural Fill: Granular Material, Class II as specified in Section 01221.
- C. Granular Fill: Type II as specified in the Michigan Department of Transportation Standard Specifications for Construction, Current Edition.

2.2 ACCESSORIES

- A. Geotextile Fabric: Non-biodegradable, non-woven.
 - 1. Alkzo Nobel Geosynthetic Co.
 - 2. Huesker, Inc.
 - 3. TC Mirafi
 - 4. Tenax Corp.

5. Tensar Earth Technologies, Inc.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.
- B. Verify subdrainage, dampproofing, or waterproofing installation has been inspected.
- C. Verify underground tanks are anchored to their own foundations to avoid flotation after backfilling.
- D. Verify structural ability of unsupported walls to support loads imposed by fill.

3.2 PREPARATION

- A. Compact subgrade to density requirements for subsequent backfill materials.
- B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with structural fill and compact to density equal to or greater than requirements for subsequent fill material.
- C. Scarify subgrade surface to depth of 8 inch.
- D. Proof roll to identify soft spots; fill and compact to density equal to or greater than requirements for subsequent fill material.

3.3 BACKFILLING

- A. Backfill areas to contours and elevations with unfrozen materials.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.
- C. Place geotextile fabric where indicated within the Contract Drawings.
- D. Place fill material in continuous layers and compact to a minimum of 95% of maximum density utilizing ASTM D-1557.
- E. Employ placement method that does not disturb or damage other work.
- F. Maintain optimum moisture content of backfill materials to attain required compaction density.
- G. Backfill against supported foundation walls. Do not backfill against unsupported foundation walls.
- H. Backfill simultaneously on each side of unsupported foundation walls until supports are in place.
- I. Slope grade away from building minimum 2 percent slope for minimum distance of 10 ft, unless noted otherwise.
- J. Make gradual grade changes. Blend slope into level areas.

- K. Remove surplus backfill materials from site.
- L. Leave fill material stockpile areas free of excess fill materials.

3.4 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Top Surface of Backfilling within Building Areas: Plus or minus 0.10 feet with the summary of plus and minus equalization zero from required elevations.
- C. Top Surface of Backfilling Under Paved Areas: Plus or minus 1/2 inch from required elevations.
- D. Top Surface of General Backfilling: Plus or minus 1 inch from required elevations.

3.5 FIELD QUALITY CONTROL

- A. Section 01 40 00 - Quality Requirements and 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Perform laboratory material tests in accordance with ASTM D1557 or AASHTO T180.
- C. Perform in place compaction tests in accordance with the following:
 - 1. Density Tests: ASTM D1556.
 - 2. Moisture Tests: ASTM D3017.
- D. When tests indicate Work does not meet specified requirements, remove Work, replace and retest.
- E. Frequency of Tests: One test per one foot lift per 100 square feet of area.
- F. Proof roll compacted fill surfaces under slabs-on-grade, pavers, paving, and sidewalks.

3.6 PROTECTION OF FINISHED WORK

- A. Section 01 70 00 - Execution and Closeout Requirements: Protecting finished work.
- B. Reshape and re-compact fills subjected to vehicular traffic.

END OF SECTION

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SECTION 02050 –
BUILDING DEMOLITION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Demolition of designated structures and removal of materials from site.
- B. Demolition, removal, and disposal off-site of masonry block, wood framing, drywall, slabs-on-grade and all other debris created by the Work.
- C. Demolition removal and disposal of piping, equipment, and wiring unless same is called to be turned over to the Owner, disconnected and left in-place, or left in operation.
- D. Disconnecting and capping of identified utilities.
- E. The Owner had the affected buildings surveyed for the presence of asbestos – several types of asbestos containing materials were found in both buildings. The removal and abatement of these materials is being performed by a licensed asbestos removal contractor as a separate work scope outside of this Contract. The Demolition Contractor will receive copies of all documentation on completed abatement activities as part of startup procedures on this project.

1.2 REGULATORY REQUIREMENTS

- A. Conform to all applicable Federal, State, County, and local codes and ordinances for demolition of structures, safety of adjacent structures, dust control, runoff control, disposal, and erosion control.
- B. Submit Regulatory Notifications for demolition work to authorities as required to perform the Work.
- C. Obtain required permits from authorities.
- D. The cost of all permits shall be included as part of the bid.
- E. Notify affected utility companies before starting work and comply with their requirements.
- F. Pay all costs incurred with terminating utility services on the site.
- G. If a particular utility company requires work to be done by their forces, the cost of this work shall be included in the base bid.
- H. Do not close or obstruct public roadways, sidewalks, and hydrants without permits.

1.6 CONTRACTOR'S SUPERVISION

- A. Contractor's responsibility shall include a completely equipped first aid kit, provided and maintained at the site in a clean orderly condition and shall be readily accessible at all times to all the Contractor's employees.
- B. The Contractor shall designate certain employees who are properly instructed to be in charge of first aid.
- C. At least one such employee shall be available whenever work is in progress at the demolition site.

1.7 MAINTENANCE OF SERVICE

- A. Contractor shall note the present use and volume of traffic on adjacent roadways.
- B. Full protection shall be provided for these roadways and all work governed by this Proposal shall be coordinated in such a manner so as not to infringe on the full use of these roadways, as approved by the Owner.
- C. Any and all operations within road rights-of-way shall be conducted in strict conformance with the Specifications and the Michigan Manual of Uniform Traffic Control Devices.
- D. The premature breaking up and removal of public sidewalks, streets, and other related pavements is not a part of this contract.
 - 1. The Contractor shall be responsible for the above items.
 - 2. To assure minimum damage during period of demolition and removal of existing buildings, the Contractor shall protect same with heavy timbers, meeting Owner's approval, or use other means meeting Owner's approval to maintain existing and construction traffic patterns, as required.
- E. Upon removal of all protection materials from the above described Municipality property, all shall be intact and capable of use by the public or other trades without recourse to repairs, the expense of which, if necessary, will be paid by the Contractor.
- F. Where additional removal is required after demolition of the buildings, said removal shall be accomplished as specified elsewhere herein in the chronological order indicated.

1.8 SUBMITTALS

- A. Shop Drawings: Coordination schedule described above. Indicate demolition and removal sequence; and location and construction of barricades, fences, and temporary work.

1.9 SCHEDULING

- A. Schedule all work for protection, demolition removal, and salvage to comply with Owner's Requirements.
- B. Coordinate utility terminations where applicable with the Owner.

1. The Contractor shall arrange for gas and electrical terminations with the local providers and Miss Dig as necessary to prepare the site for the demolition work.

1.10 PROJECT RECORD DOCUMENTS

- A. On completion of project, prior to receiving final payment, the Contractor shall prepare record Drawings, or record reproducible copies of the Contract Drawings provided to him by the Engineer, showing locations of existing utilities which are either left in operation or abandoned in place and exposed by his work.
- B. Accurately record locations of capped utilities, and subsurface obstructions encountered.

PART 2 GENERAL

NOT USED

PART 3 EXECUTION

3.1 PREPARATION

- A. Prior to submitting his bid, the Contractor shall visit the site and determine the nature of the work.
- B. Provide, erect, and maintain temporary barriers and security devices at the site.
- C. Prevent movement or settlement of adjacent structures. Provide bracing and shoring as required.
- D. Mark location of all utilities.
- E. Contractor's responsibility shall include a completely equipped first aid kit, provided and maintained at the site in a clean orderly condition and shall be readily accessible at all time to all the Contractor's employees.
 1. The Contractor shall designate certain employees who are properly instructed to be in charge of first aid.
 2. At least one such employee shall be available whenever work is in progress.
- F. Telephone call lists for summoning aid from outside sources, such as doctors, ambulances, pulmonary and rescue squads, shall be conspicuously posted at the site.

3.2 DEMOLITION REQUIREMENTS

- A. Conduct demolition to minimize interference with adjacent structures, occupancies, and roadways.
- B. Conduct demolition operations to ensure safety of all persons and to prevent damage to existing structures and utilities, construction in progress, and other property.

- C. Cease operations immediately if adjacent structures appear to be in danger. Notify Engineer immediately. Do not resume operations until permission has been granted by the Owner.
- D. Conduct operations with minimum interference to public or private accesses. Maintain protected egress and access at all times.
- E. Obtain written permission from adjacent property owners when demolition equipment will traverse, infringe upon or limit access to their property.
- F. All dumpsters supplied by the Contractor for use during the project shall be covered with tarps at all time when not being actively used.
- G. Sprinkle the work area with water to minimize dust.
 - 1. Provide hoses and water connections for this purpose.
 - 2. Contractor shall obtain a meter and backflow preventor from the local municipality and pay all fees related to rental of equipment and usage of water prior to final acceptance.

3.3 DEMOLITION

- A. The work included under this Section consists of providing all labor, equipment, and services required to remove and dispose of demolition items.
- B. The items of demolition and removal shown are not necessarily intended to be a complete detail of each and every item of work.
 - 1. The Contractor is required to carefully review the scope for all trades, as well as examine the actual sites of the various items of work so that he may include all items of demolition and removal work under this section.
 - 2. The Owner does not guarantee that the work was constructed in accordance with any drawings that are available.
 - 3. The Contractor shall make his own independent determination of the work by visiting and surveying the work sites.
 - 4. All information relative to existing conditions is shown to assist the Contractor in evaluation of the work, but with no specific representation, either expressed or implied, as to completeness or accuracy. The Contractor shall be responsible for any deductions or conclusions made on the basis of this information and that of any additional site inspections, if made.
 - 5. Location of existing underground utilities and subsurface obstructions are shown using the best information available but with no representation that the indicated locations are accurate or that lines other than shown may not be present.
- C. In general, the indicated removal of a piece of equipment shall include all steel supports, interconnecting pipe, fittings, valves, miscellaneous devices and electrical conduit and wiring unless otherwise called for.
- D. When a piece of equipment or device is removed the piping, and/or electrical, shall be removed back to the main line.
 - 1. Piping shall be capped at the main.
 - 2. Electrical conduit and wiring shall be removed back to the point of distribution.

- E. The Scope documents are not intended to indicate precise details of all interconnecting items to be removed nor exact locations of items for demolition and removal.
1. The Contractor shall visit the site prior to bidding to ascertain the scope of work and shall, if necessary, request written clarification of any items in doubt.
- F. Bracing and shoring shall be provided as necessary to prevent collapse due to removals of any part of any of the structures concerned with under this contract.
1. Bracing and shoring shall be removed promptly when no longer required.
 2. Care shall be taken not to impair retained portions of existing structures during demolition and removal operations.
- G. All debris, scrap, etc., removed during demolition operations, unless specified otherwise hereinafter, shall become the Contractor's property and be disposed of or recycled promptly off the Owner's property.
1. Only one day's accumulation of debris will be permitted at any job site unless the material is suspected to be hazardous/contaminated as determined in 3.5 of this Section.
 2. Such materials may be stored as indicated in 3.5 of this Section.
 3. All suspect materials shall be landfilled if not tested and approved for other disposal.
- H. Cleaning wastes (liquid or solid) shall be stored in container suitable for the type of material, tested and disposed of in an offsite facility that is appropriate for the type of tested material.
- I. Unless noted otherwise, all existing fence within the sites shall be removed in its entirety, including foundations.
- J. Existing trees on the site shall be protected against damage from operations governed by this work, subject to deposition under other specification sections herein.
- K. After storm and sanitary drain lines are disconnected, the Contractor shall remove them.
- L. In general, this Contractor will take possession of the buildings to be demolished and all of their contents, including all remaining plumbing fixtures, heating units, structural shapes, piping, radiators, and electrical installation of every description.
- M. All the contents are to be removed, the buildings demolished and sites cleared of debris. Existing interior and exterior concrete slabs and asphalt pavement at existing grade levels shall also be removed as they may exist.
- N. All masonry walls and existing foundations shall be removed.
- O. All columns and existing interior concrete, masonry and wood framed walls and roofs are to be removed.
- P. Concrete curbs, raised concrete bases, etc., within interior or exterior to existing buildings at grade shall be removed.
- Q. All pits and subgrade areas to be backfilled shall be cleaned free of all rubbish and loose material, subject to Engineer's inspection and subsequently filled, as specified herein.

- R. All pit and basement slabs shall be removed prior to backfill.
- S. All pit and subgrade areas, as they exist, shall be backfilled in compacted layers not exceeding 6" in thickness with approved back run sand in their entirety.
- T. Sand backfill material must be accepted by the Independent Testing Laboratory prior to backfilling with a report indicating approval, submitted to the Owner's Engineer.
1. All backfill material must meet 95% compaction, Modified Proctor, including bottom portion of fill as well as top layers.
 2. A representative of the Independent Testing Laboratory must be on the site continually during all phases of the backfilling operation to provide continuous inspection as well as tests.
 3. Individual tests shall consist of a minimum of one test per 1,000 sq. ft. per foot of lift in unconfined areas taken as a random pattern as the backfilling progresses or one test per foot of lift in each confined area 1,000 sq. ft. or less.
 4. All material shall be compacted to a minimum bearing value of at least 4,000 psf at optimum moisture.
- U. Trucks hauling loose materials from or to the sites shall be tight and their loads trimmed to prevent spillage on public streets.
1. The Contractor shall promptly clean streets dirtied by any cause arising from his operations.
- V. Wood, Glass and Plastic: Wood, glass and plastics must be landfilled.
- W. Tanks, piping and miscellaneous metals shall be landfilled or recycled.
1. Tanks, piping and miscellaneous metals may be required to be cleaned, characterized, tested and disposed of in accordance with the characterization or tests as required by State or Federal regulations.
- X. Asphalt: Asphalt materials may be recycled or landfilled.
- Y. Concrete: Concrete may be recycled if there are no visible reinforcement bars. If concrete is stained, it must be tested prior to recycling and disposed of in accordance with the test results.
- Z. Electric lamps and devices containing elemental mercury shall be managed as a universal waste under the requirements of R 299.9109 and R 299.9228 of the Part 111 rules and 40 CFR Part 2734 as overseen by the appropriate governmental agency.
1. Specific requirements for universal waste handlers, universal waste removal methods, storage and labeling of universal wastes, transportation of universal waste, and universal waste destination facilities.
- AA. Ballasts containing PCB's shall be disposed of under the requirements of the Federal Toxic Substances Control Act (TSCA).
1. Ballasts shall be assumed to contain PCBs if it was manufactured prior to 1978 or the ballast does not contain the statement "No PCBs." Small capacitors with less than 3 pounds of fluid are generally not subject to TSCA disposal requirements.
 2. All leaking ballasts must be managed and disposed of as a PCB waste.
- BB. Care shall be taken that dust and debris do not in any way impair or damage neighboring sites.

1. The work of this section shall take into consideration the protection of employees, buildings, machinery, and equipment.
2. In line with this requirement, all necessary dust and weather protection, of a type meeting with the approval of the Owner, shall be provided for the time required, and promptly removed when no longer required.

3.4 HAZARDOUS/CONTAMINATED MATERIAL

- A. The following indicators shall be used by Owner onsite observers during demolition to identify materials suspected of being hazardous or contaminated and requiring disposal in a Type I or Type II landfill.
 1. Electronic devices.
 2. Material that emits a chemical or petroleum odor.
 3. Based on these observations, materials in question shall be stockpiled separately, inspected, and representative samples should be collected and screened in the field.
 4. Materials should be stored in a manner consistent with the suspected nature of the waste, at a secure location at the site, designated by the Owner, until disposal is determined.
- B. Potentially hazardous materials should be screened in the field by qualified personnel for the presence of volatile organic compounds (VOC) using a photoionization (PI) meter.
 1. It is assumed that the presence of VOCs should provide a general indicator of the presence of other potentially hazardous chemicals.
 2. Materials to be subjected to further laboratory analysis should be selected based on the results of the field screening and observations made by the person monitoring the demolition.
- C. Based on the field screening and laboratory analysis, the Contractor will be advised by the Owner as to the required method of disposal.

3.5 WASTE CHARACTERIZATION AND TESTING

- A. All material that is required to be tested in Section 3.4 and 3.5 shall be tested in accordance with the requirements for testing of the suspected hazardous or contaminated material.
- B. Materials sent to different disposal facilities shall meet have been tested in accordance with the testing requirements of that facility and shall meet the facilities material quality requirements.
- C. The Contractor is responsible for testing of hazardous/contaminated material that is not going to be recycled.
- D. The Contractor is responsible for testing of materials that may be recycled.
- E. The Contractor is responsible for submitting initial waste characterization data to the disposal of recycling facilities through the Owner.
- F. The Contractor shall be aware that the results of testing are expected to be available not less than ten (10) days after the samples have been taken.

3.6 DISPOSAL AND RECYCLING FACILITIES

- A. As part of the submittal process, the Contractor shall submit to the Owner a list of all landfills, recycling facilities, other disposal facilities, material transporters and intended items to be transported by or disposed of at each landfill or facility.
 - 1. The submittal shall include classifications for each transporter and facility and a copy of the license for each transporter and facility.
- B. No material shall be shipped to any landfill, disposed or recycling facility without prior approval of the Owner and a complete record shall be kept of such items.
 - 1. This record shall be turned over to the Owner upon completion of the demolition work.
- C. Materials that are transported from the site shall be transported by a transporter who meets applicable requirements of State and Federal law.
 - 1. The material shall be contained and transported in a manner that meets all applicable requirements of State and Federal law.
- D. Serial numbered and dated load tickets are required for all hazardous/contaminated material that leaves the construction site.
 - 1. The tickets will be generated by the Owners representative, in triplicate.
 - 2. One ticket will be kept and two will be given to the driver.
 - 3. The load tickets will show the destination of the material.
 - 4. The load ticket and the facility invoice must be included with any request for payment.
 - 5. These documents will be reconciled with the owner's copy of the load tickets before payment will be made to the contractor.
 - 6. The manifesting system shall meet the requirements of the appropriate State and Federal regulations for the waste material.

3.7 WORK INCLUDED

- A. All debris shall be removed as directed by the Owner and disposed of off-site at the Contractor's expense.
- B. The Contractor shall be responsible for taking all necessary measures for safely removing, storing, transporting and disposal of materials.

END OF SECTION

SECTION 02200

EARTHWORK

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. General
- B. Site Preparation
- C. Excavations
- D. Unauthorized Excavation
- E. Subgrade
- F. Slopes, Sheeting and Bracing
- G. Backfill
- H. Finish Grading

1.2 RELATED SECTIONS

- A. Section 02220 - Soil Erosion Control

1.3 GENERAL

- A. All excavation and backfilling shall be performed that is necessary to complete the work under this Contract. Excavation shall include the loosening, loading, removing, transporting, stockpiling, and disposing of all materials of every sort, necessary to be removed for purposes of construction; the furnishing, placing, and maintaining of all sheeting, bracing, and timbering; the care of existing roads, existing structures, utilities; and all incidental and collateral work necessary to complete the entire work as specified and as shown on the Drawings.
- B. Backfilling shall include the filling of the excavated and void spaces around and over the outside of completed structures and pipes. It is also the intention of these specifications to provide that backfill shall be so compacted that no appreciable subsequent settlement will occur, and so that sidewalks, driveways, roads and berms may be placed or replaced shortly after completion of backfilling.
- C. The Contractor will be held to have compared the conditions of the site where work is to be performed with the drawings and specifications and to have satisfied himself as to the conditions of the site, existing conditions, and any other conditions affecting the carrying out of the work, before delivery of his proposal. It is expressly understood that he will obtain first hand information concerning the available facilities for receiving, transporting, handling and

storing construction equipment and materials and concerning other local conditions that may affect his work.

- D. The Contractor shall draw his own conclusions as to soil and/or rock conditions to be encountered, and he shall complete the work under any job or field condition which was present and/or ascertainable prior to bidding.
- E. He shall also complete the work under whatever conditions he may create by his own sequence of construction, construction methods, or other condition he may create at no additional cost to the Owner.
- F. The Contractor shall be responsible for evaluating the compatibility of his construction methods with the Plans, Specifications and Soil Information provided by the Owner for bidding purposes.
- G. No allowance or extra consideration on behalf of the Contractor will subsequently be allowed by reason of error or oversight on the part of the Contractor.
- H. This contractor shall grade all areas within his work area and provide slopes, shoulders, berms, and level surfaces defined according to existing and established grades.
- I. Care shall be taken to retain, at all times, normal flow of drainage water on the property and all present above ground and underground utilities.
- J. All work shall be done in a thorough and workmanlike manner and in conformance with accepted good practices and all requirements of local, state, and federal authorities having jurisdiction.

1.4 REGULATORY REQUIREMENTS

- A. Conform to applicable state and local codes for disposal of excavated materials judged not suitable for backfill.
- B. Obtain disposal permit from Local Enforcing Agency.

1.5 QUALITY ASSURANCE

- A. Comply with all code, laws, ordinances, and regulations of governmental authorities having jurisdiction over this part of the work.
- B. Backfill materials shall be compacted to not less than specified percentage of optimum dry density as determined by ASTM D 698.
- C. Testing of backfill material will be done in accordance with ASTM D 2922, ASTM D 1556, and ASTM D 3017.
- D. Unsuitably compacted backfill materials shall be removed and recompacted.

1.6 SITE CONDITIONS

- A. Provide and maintain barricades, warning lights, warning signs, and other protection required by applicable laws for safety of persons and property.
- B. Protect excavations by shoring, bracing, sheet piling, underpinning, or other methods required to prevent earth movement.
- C. Notify Owner of unexpected subsurface conditions and discontinue affected work area until notified to resume work.

PART 2 PRODUCTS

2.1 BACKFILL

- A. All material necessary to complete the backfill as shown on the drawings or to replace excavated unsuitable material shall be furnished by the Contractor. Backfill at the structures, unless otherwise indicated on the Drawings, backfill replacing unsuitable material, backfill under gravel or stone and paved roads, shall all be granular material conforming to Michigan Department of Transportation (MDOT) Granular Materials Class II. If suitable material for backfilling is not available on site then suitable material shall be brought in from an off-site borrow pit by the Contractor at no additional cost to the Owner.
- B. The Owner shall have the right to reject any backfill material which when used in the work, does not accomplish the required compaction.
- C. All backfill material shall be free from large or frozen lumps, concrete rubble, blue clay, sod, wood, debris, and other extraneous material.

PART 3 EXECUTION

3.1 EXCAVATIONS

- A. The Contractor shall make all excavation necessary for the construction of all work called for by the drawings or specified herein.
- B. Excavations shall be made to the line and grade shown on the drawings including removal of unsuitable soils from under structures or roads, or as required to meet MIOSHA regulations. Side slopes of unbraced excavations shall be such as to prevent slides which might injure the work. The Contractor shall conduct his excavation and other operations in such a manner as to ensure that the bed for footings and foundations remains free from rutting, trampling, or other undue disturbance. The beds for footings and foundations shall be true to grade and free of all loose material before any concrete is put in place. All unauthorized excavation below grade of any structure shall be backfilled with concrete to the proper grade at the Contractor's expense. The Contractor shall make all necessary fills to bring grade to finished grade shown on the drawings. Fills and cuts shall be graded to a uniform, smooth, and even grade to grades as shown on the Drawings to meet Owner's approval. Existing underground utilities that are

to remain in place shall be protected and any damage caused by excavating shall be made good.

- C. Control the grading in the vicinity of excavated areas so that the surface of the ground will be properly sloped to prevent water from running into the excavated areas. Such areas shall be kept reasonably dry at all times. Accumulated water in the excavated areas shall be removed by pumping.
- D. Broken concrete or rubbish unsuitable for backfill shall be disposed of by the Contractor. Borrow material shall be graded in such a way that surface water will continue to drain in a manner similar to the drainage patterns present before filling occurred. Broken concrete and rubbish shall be disposed of off-site.

3.2 UNAUTHORIZED EXCAVATIONS

- A. Whenever the excavation is carried beyond the lines and grades established by the drawings or as approved by the Owner, the Contractor shall, at his own expense, fill all such excavated space with an approved material and in such a manner as to meet the approval of the Owner.
- B. Unauthorized excavation beneath structures shall be filled with plain concrete, or flowable fill as determined by the Owner.

3.3 SUBGRADE

- A. The subgrade for all structures shall be prepared so as to have as near as practicable a uniform density throughout the entire area. The subgrade shall be compacted to 95% maximum density at optimum moisture content as specified in AASHTO-180 or by Michigan Cone density, whichever is greater, by rolling or by other approved methods. After being prepared, the subgrade shall be maintained until concrete has been placed thereon.
- B. If, through neglect or delay on the part of the Contractor, the earth at subgrade elevation becomes unsuitable for the support of the work to be constructed thereon, the Contractor shall excavate down to solid earth, and shall backfill to the required subgrade elevation with plain concrete, compacted sand, or other suitable material as required to meet the Owner's approval. Unstable subgrade soil under all concrete foundations shall be replaced with plain concrete.
- C. All subgrades shall be approved by the Engineer before proceeding with backfilling and compaction, landscaping, or other construction work.
- D. Subgrades shall be level and clean of all loose rock, dirt, and debris and free of standing water prior to placing concrete.

3.4 SLOPES, SHEETING, AND BRACING

- A. All slopes shall be cut and maintained to the proper degree required for stability. Sheeting and bracing shall be placed and maintained as indicated and/or whenever required for safety to men and the work. The degree of slope for all excavations shall be fixed by the Contractor, and shall comply with all State and Federal safety requirements.

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- B. The Contractor shall provide, install, and maintain all shoring, sheet piling, and bracing required to maintain banks of excavations and other construction, and assume full responsibility for same. The design of all shoring systems shall be performed by an Engineer registered in the State of Michigan utilizing loading diagrams as provided in Section 1900 of the Specifications. The shoring system design computations shall be sealed by the Engineer who prepared them and forwarded to the Owner for review.
- C. Sheeting, bracing and timbering shall be so placed as to allow the work to be constructed to the lines and grades shown on the drawings.
- Size and placing of members shall be subject to review by the Owner but the design of members and safety of the excavation shall be the responsibility of the Contractor.
- Exact areas to be sheet piled and final weight of sheet piling shall be determined by the Contractor unless otherwise indicated for permanent sheet piling. Actual quantity and location of all sheet piling required for this project shall be determined by the Contractor.
- D. The Contractor shall select hammer or hammers to be used on sheet piling based on length, weight, type of pile, and depth of penetration and submit data on the hammer selected to the Owner for review. Double-acting hammers may be used on sheet piling.
- Approximate weight of hammer shall be 2-1/2 times the weight of a sheet of piling to be driven.
- E. Sheet piling shall be driven to depths and lengths required by the Contractor unless otherwise indicated for permanent sheet piling. Level measurements, utilizing previously specified bench marks, shall also be made at existing structures, in the presence of the Owner's designated representative, during all driving of sheet piling to record any change in the level of present structures or utilities caused by the Contractor's Operations.
- F. Permanent sheet piling where indicated on the drawings shall be of weight, area and depth shown on the drawings and shall remain in place.
- G. Temporary sheet piling may not be withdrawn from any area until concrete within the zone influenced by vibrations set up by withdrawal operations, has attained its 28 day design strength.
- H. If the sheeting and bracing cannot be removed without detriment to the finished structure or existing structures, then the sheeting and bracing shall be left in place temporarily or permanently as the Owner shall approve. Sheeting and bracing left in place permanently shall be cut off at the required level so as not to interfere with subsequent construction. The cost of materials left in place less the eliminated expense of removal work shall be paid as an extra. No extra payment shall be allowed for the cost of placing the material.
- I. All bracing used shall be so arranged as to place no stress on any portion of the completed work until such work shall have developed sufficient strength, as determined by the Owner. Any damage to any structures occurring through settlements, water or earth pressure, slides, cave-ins, or other causes shall be repaired by the Contractor at his own expense.

All materials used for earth bracing or support shall be structurally sound, uniform in quality, and adequate in size and strength for the use intended.

3.5 BACKFILL AND COMPACTION

- A. It is the intent of these Specifications that backfill shall be so placed and consolidated that no appreciable subsequent settlement will occur.
- B. Backfill shall be placed in uniform layers not exceeding 12 inches in depth when measured loose and each layer shall be thoroughly compacted by tamping, sheepsfoot-roller, mechanical vibrators, or by other effective means approved by the Owner. All backfill in all areas shall be compacted to at least 95% of maximum density, at optimum moisture content as specified in MDOT Standard Specifications for Construction Controlled Density Method. Compaction by flooding will not be permitted.

The Owner shall have the right to reject any backfill material which when used in the work, does not accomplish the required compaction.

- C. The Contractor shall furnish all necessary assistance and test pits as required for the Owner to conduct compaction density tests.
- D. No backfill material shall be placed on areas where free water is standing or on frozen subsoil areas.
- E. Clean areas and excavations to be backfilled of all trash and debris before placement of backfill. In placing backfill, take special care to prevent any wedge action, eccentric loading, damage, or overloading of any adjacent structures, piping, and equipment by equipment used in compacting backfill material.
- F. Heavy equipment for spreading and compacting fill and backfill shall not be operated closer to a wall than a distance equal to the height of the fill or backfill to be placed. Power-driven hand operated equipment shall be used against walls and where space limits the use of heavy equipment.
- G. All excavations around the walls and other foundations, etc., shall be backfilled to meet Owner approval after all work has been inspected and approved. Backfill shall not be placed against walls until all supporting slabs are in place and have attained their design strength or as indicated on the structural drawings.
- H. If compaction tests indicate work does not meet specified requirements, remove work, replace and retest at no cost to the Owner.
- I. Porous stone filters shall be furnished and installed where shown on the Drawings. Stone filters shall be encased in a drainage geotextile fabric as specified in Section 02202 of these specifications.

3.6 FINISH GRADING

- A. The Contractor shall grade the entire site as indicated on the drawings to a smooth and even grade, meeting existing grades and/or the grades indicated on the drawings.

- B. Excavated material suitable and approved for backfilling shall be stored on the site in areas approved by the Owner. Reusable topsoil that is displaced shall also be stored on the site in separate area from the backfill.
- C. Finish grade under gravel road areas and under paved areas shall be limited to 1/2 inch in 10 feet from true profile, and shall be maintained until succeeding layer or surface course is placed.
- D. Finish grading shall slope uniformly to contour lines shown on the Drawings, and to meet existing adjacent levels. The Contractor shall grade all areas within his work site and provide slopes, shoulders, berms, and level surfaces defined according to existing and established grades. The work shall also include all adjacent areas disturbed by construction and as required by new pavement installation.
- E. The subgrade for all slabs and pavements shall be prepared so as to have as near as practicable a uniform density throughout the entire area. The subgrade shall be compacted to 95% maximum density at optimum moisture content, as specified under BACKFILL AND COMPACTION herein, by rolling or by other approved methods. After being prepared, the subgrade shall be maintained until concrete or pavement has been placed thereon.
- F. If, through neglect or delay on the part of the Contractor, the earth at subgrade elevation becomes unsuitable for the support of the work to be constructed thereon, the Contractor shall excavate down to solid earth, and shall backfill to the required subgrade elevation with plain concrete, or other suitable material as required to meet the Owner's approval.

Soil found to be unstable in the subgrade shall, when required to meet the Owner's approval, be excavated to firm soil and replaced with MDOT Granular Material, Class II, as specified above thoroughly compacted. Subgrade area supporting structures shall have unstable material replaced with Owner approved concrete.

END OF SECTION

SECTION 02221

SOIL EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

The purpose of this specification is to provide certain requirements, techniques and measures to minimize erosion damage to the construction site. In general, the contractor shall conduct his operations in such a manner as to limit any exposed area or any disturbed land for the shortest practicable period of time and any sediment caused by soil erosion due to his operations shall be restricted and reduced to a non-polluting minimum before it leaves the site.

1.1 TEMPORARY SEDIMENT CONTROL

- A. The Contractor shall construct the sediment filter in the outlet drain in order to provide for erosion control, before any construction begins. Ground water from the excavation shall be directed through the settling basin.
- B. Burlap silt traps shall be placed between all catch basin, and inlet frames and covers, and also stubs, during construction, and until contributing disturbed areas are permanently stabilized. During the growing season, the area within a 10' radius of the catch basin shall be stabilized with sod within 5 days of the installation of the structure. During the non-growing season, a sediment pit (12" to 18" deep) shall be excavated around the structure to be backfilled and replaced with a 10' radius of sod upon commencement of the next growing season.
- C. It shall be the Contractor's responsibility to maintain both the sediment filter, settling basin and burlap silt traps and remove all trapped sediment periodically throughout the time of construction in such a manner that there will be adequate solids storage volume upstream of these devices. In addition, the Contractor shall, at the completion of construction and when directed by the Owner, remove said devices and all trapped sediment.

1.2 EROSION PROTECTION

- A. In order to limit the length of time that the exposed area is subject to the elements and the subsequent conditions causing erosion, the contractor shall adhere to the following requirement:
- B. The stabilization of disturbed areas shall begin within fifteen (15) days of date that area has been rough graded and shall be completed within the next fifteen (15) days, in accordance with the following temporary or permanent stabilization.

1.3 TEMPORARY STABILIZATION

- A. Temporary stabilization shall be required for all disturbed areas during the following periods:
- B. Temporary stabilization shall be provided during the non-growing season for all areas to be sodded. This time period is generally from October 20 through May 1.

- C. Temporary stabilization shall be provided during the non-growing season for all areas to be seeded. This time period is generally from October 1 through April 20. (If unseasonably warm weather exists after October 1, seeding may be permitted).
- D. If for any reason Permanent Stabilization cannot be provided within 15 days of the completion of final grading operations, temporary stabilization shall be provided for all disturbed areas.
- E. On all disturbed areas, provide either small grain straw (preferably wheat) or grass hay spread at the rate of 1-1/2 to 2 tons per acre or wood chips spread at a rate of 6 to 9 tons per acre. Mulch shall be anchored in place to prevent it from being blown or washed away.
- F. It shall be the contractor's responsibility to provide Permanent Stabilization as soon as practicable.
- G. Temporary stabilization shall be repeated when and as often as required by the Engineer or Owner.

1.4 PERMANENT STABILIZATION

- A. All areas which have been temporarily stabilized shall be permanently stabilized immediately upon commencement of next seasonal planting period. All straw or hay shall be removed or deeply incorporated into the soil.
- B. Sodding
 - 1. Lawn areas disturbed by excavation or other contractor's operation shall be repaired as follows:
 - 2. Backfill to be suitably excavated material mechanically compacted in 12 inch layers to prevent settlement.
 - 3. The area to be sodded shall be made smooth and shall be covered with not less than 2 inches of approved top soil uniformly spread over the scarified ground surface.
 - 4. Lawn to be replaced with sod matching the existing blue grass, or with Grade A Kentucky Blue Sod. Sod shall be not less than 1 inch thick, cut in strips not less than 1/2 sq. yd. in area. Sod shall be moist and shall be laid in a moist earth bed. Pegs shall be used where required to hold the sod in place and in areas where the slope exceeds one foot vertical to two feet horizontal.
 - 5. It shall be the contractor's responsibility for the establishment of the seed growth regardless of weather conditions.
 - 6. Sod may be laid between May 1 and October 20.
- C. Seeding
 - 1. All vegetated areas other than lawn areas disturbed by the contractor's operation shall be restored as follows:
 - 2. Backfill to be suitable excavated material mechanically compacted in 12 inch layers to prevent settlement.
 - 3. The area to be seeded shall be made smooth and shall be covered with not less than 4 inches of approved top soil uniformly spread over the scarified ground surface.
 - 4. Fertilize all areas with 12-12-12 applied at a rate of 400 lbs./acre.
 - 5. Ditch slopes and bottom shall be seeded with MDOT "Roadside Mix" Section 8.21.09 applied at a rate in accordance with MDOT Table 8.21-1. All other areas shall be seeded with MDOT Class A applied at a rate in accordance with MDOT table 8.21-1.

6. Immediately after seeding, all areas shall be mulched with unweathered small grain straw or hay applied at the rate of 2 tons/acre.
7. Mulch shall be anchored in place to prevent it from being blown or washed away.
8. It shall be the contractor's responsibility for the establishment of the seed growth regardless of weather conditions.
9. Seed may be sown between April 20 and October 1.

1.5 ENFORCEMENT

- A. Should the requirements of the preceding sections be violated, the Owner shall require the contractor to cease all other operations and to apply his forces to meet these requirements.

1.6 BASIS OF PAYMENT

- A. All costs associated with above stated requirements shall be included in the unit prices bid.

SECTION 02929

SEEDING

PART 1 GENERAL

1.1 SUMMARY OF WORK

- A. Extent of seeded and sodded lawns is shown on drawings and by provisions of this section.
- B. Types of work required include the following:
 - 1. Soil preparation
 - 2. Top Soil
 - 3. Seeding

1.2 RELATED WORK

- A. Related work specified elsewhere:
 - 1. Section 02200: Earthwork
 - 2. Section 02930: General Landscape Materials and Final Grading

1.3 QUALITY ASSURANCE

- A. Seeding Subcontractor shall have a minimum 5 years experience with seeding and related work.

1.4 SUBMITTALS

- A. Submit certification of grass seed from seed vendor for each grass seed mixture.
- B. Manufacturer's certification of fertilizer.
- C. Seeder's certification of experience, if required.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver seed in original sealed, labeled and undamaged containers.

1.6 PROJECT CONDITIONS

- A. Work notifications: Notify Engineer at least 7 working days prior to start of seeding operation.
- B. Protect existing utilities, paving and other facilities from damage caused by seeding operations.
- C. Perform seeding work only after planting and other work affecting ground surface has been completed.

- D. Restrict traffic from lawn areas until grass is established. Erect signs and barriers as required.
- E. Provide hose and lawn watering equipment as required.

1.7 WARRANTY

- A. Seeding shall be warranted for a period of 1 year following acceptance

PART 2 PRODUCTS

2.1 MATERIALS

- A. Grass Seed:
 - 1. Fresh, clean, dry, new-crop seed complying with the Association of Official Seed Analysts' - Rules for Testing Seeds - for purity and germination tolerances.
 - 2. Seed Mixture: Provide seed of grass species and varieties, proportions by weight, and minimum percentages of purity, germination, and maximum percentage of weed seed as indicated on Schedules at the end of this section. The required seed mixture will be MDOT Turf Seed Mixture THM. Fuels salt grass species will not be allowed in the seed mixture. 14-day watering of newly seeded areas will be required by the contractor and shall be considered a part of this bid item.
- B. Fertilizer:
 - 1. N/A for project.
- C. Water: Free of substance harmful to grass seed and grass growth. Hoses or other methods of transportation furnished by Contractor.
- D. Topsoil
 - 1. Topsoil shall be fertile, friable and representative of productive soil, capable of sustaining vigorous plant growth and shall be free of clay lumps, sub-soil, weeds, seeds and other foreign debris.
 - 2. Acidity range shall be between pH 5.0 and 7.5.
 - 3. Organic content shall be not less than 5% and not greater than 30%.
 - 4. Clay content shall range between 5% and 25%.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine finish surfaces, grades, topsoil quality and depth. Do not start seeding work until unsatisfactory conditions are corrected.

3.2 PREPARATION

- A. Limit preparation to areas which will be immediately seeded. Spread topsoil, fine grade.

- B. Treat lawn areas with "Round Up", by Monsanto, per label directions as required to kill existing vegetation prior to seeding.
- C. Scarify surface of lawn areas to minimum depth of 3". Remove stones over 1" in any dimension and sticks, roots, rubbish and extraneous matter.
- D. Apply 3" minimum topsoil to entire area to be seeded.
- E. Grade lawn areas to smooth, free draining and even surface with a loose, uniformly fine texture. Roll and rake; remove ridges and fill depressions as required to drain.
- F. Apply limestone, if required by soil test results, at rate determined by the soil test, to adjust pH of topsoil to not less than 6.0 nor more than 6.8. Distribute evenly by machine and incorporate thoroughly into topsoil.
- G. Apply Type A fertilizer at the rate equal to 1.0 lb. of actual nitrogen per 1,000 sq. ft. (43 lbs./acre). Apply fertilizer by mechanical rotary or drop type distributor, thoroughly and evenly incorporated with the soil to depth of 1" by discing or other approved methods. Fertilize areas inaccessible to power equipment with hand tools and incorporate it into soil.
- H. Dampen dry soil prior to seeding.
- I. Restore prepared area to specified condition if eroded, settled or otherwise disturbed after fine grading and prior to seeding.

3.3 HYDROSEEDING (if required)

- A. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogenous slurry suitable for hydraulic application.
- B. Mix slurry with nonasphaltic tackifier.
- C. Apply slurry uniformly to all areas to be seeded in a 1-step process. Apply mulch at the minimum rate of 1500 lb per acre (16.5 kg per 100 sq. m) dry weight but not less than the rate required to obtain specified seed-sowing rate.
- D. Apply slurry uniformly to all areas to be seeded in a 2-step process. Apply first slurry application at the minimum rate of 500 lb per acre (5.5 kg per 100 sq. m) dry weight but not less than the rate required to obtain specified seed-sowing rate. Apply slurry cover coat of fiber mulch at a rate of 1000 lb per acre (11 kg per 100 sq. m).

3.4 MAINTENANCE

- A. Proper maintenance shall be performed to adequately establish seed

3.5 CLEANING

- A. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris and equipment. Repair damage resulting from seeding operations.

END OF SECTION

SECTION 02930

GENERAL LANDSCAPE MATERIALS AND FINAL GRADING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Handling and installation of existing top soil materials.
- B. Supply and installation of additional top soil materials.
- C. Final grading of topsoil for finish landscaping.

1.2 RELATED SECTIONS

- A. Section 02200 – Earthwork
- B. Section 02221 – Soil Erosion and Sediment Control
- C. Section 02929 – Seeding
- D. Section 02970 – Landscape Maintenance and Guarantee Standards

PART 2 PRODUCTS

2.1 TOPSOIL

- A. Topsoil, as provided by the Contractor, shall meet the following requirements:
- B. Topsoil shall be fertile, friable and representative of productive soil, capable of sustaining vigorous plant growth and shall be free of clay lumps, sub-soil, weeds, seeds and other foreign debris.
- C. Acidity range shall be between pH 5.0 and 7.5.
- D. Organic content shall be not less than 5% and not greater than 30%.
- E. Clay content shall range between 5% and 25%.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify building and trench backfilling have been inspected.
- B. Verify subsoil has been contoured and compacted.

3.2 SUBSTRATE PREPARATION

- A. Eliminate uneven areas and low spots.
- B. Remove debris, roots, branches, stones, in excess of 1/2 inch in size. Remove and replace subsoil contaminated with petroleum products.
- C. Scarify surface to a depth of 3 inches where topsoil is scheduled. Scarify in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

3.3 PLACING TOPSOIL

- A. Place topsoil in areas as designated on the Contract Drawings, Thickness shall be as called for on the Contract Drawings. Place topsoil during dry weather.
- B. Fine grade topsoil to eliminate rough or low areas. Maintain profiles and contour of subgrade.
- C. Remove roots, weeds, rocks, and foreign material while spreading.
- D. Manually spread topsoil close to existing plant life, buildings and other above grade appurtenances to prevent damage.
- E. Compact placed topsoil as called for on the Contract Drawing.
- F. Remove surplus subsoil and topsoil from site.
- G. Leave stockpile area and site clean and raked, ready to receive landscaping, on both the facility site and remote storage site.

3.4 TOLERANCES

- A. Top of Topsoil: Plus or minus 1/2 inch or as called for herein.

3.5 PROTECTION

- A. Protect landscaping and other features remaining as final work.
- B. Protect all other structures, utilities, paving and other above grade appurtenances.

END OF SECTION

SECTION 02970

LANDSCAPE MAINTENANCE AND GUARANTEE STANDARDS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work specified in this section.

1.02 DESCRIPTION

- A. The requirements of this section include a one-year warranty period from date of final inspection performed by the Architect.

1.03 PROJECT WARRANTY

- A. Warranty seeded or sodded areas through specified maintenance period.

1.04 MAINTENANCE

- A. Maintain Seeded Grass Areas
 1. The Contractor shall establish a dense lawn of permanent grasses, free from lumps and depressions or any bare spots, none of which is larger than one foot of area up to a maximum of 3% of the total seeded lawn area. Any part of the seeded lawn that fails to show a uniform germination shall be reseeded until a dense grass cover is established.
 2. The Contractor shall water and provide a minimum of two cuttings of the lawn or more as necessary until the final inspection and acceptance of the seeded lawn area by the Architect. When the lawn reaches 3 inches in height it shall be cut to 2" inches in height.
 3. If seeded in fall and not given full 60 days of maintenance, or if not considered acceptable at that time, continue maintenance following spring until acceptable lawn is established.
 4. Maintain lawns by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, regrading, replanting, and applying herbicides, fungicides, insecticides as required to establish a smooth, acceptable lawn, free of eroded or bare areas.
 5. Water as required to maintain adequate surface soil moisture for proper seed germination. Continue watering as required for not less than 30 days. Thereafter apply 1/2" of water twice weekly until acceptance. When irrigation is not present, seeding should take place in early spring or fall.

6. Repair, rework, and re-seed all areas that have washed out, are eroded, or do not catch.

B. Inspection and Final Acceptance

1. When landscape work is completed, including maintenance, Architect will, upon request, make a final inspection to determine acceptability.
2. Landscape work may be inspected for acceptance in parts agreeable to Architect provided work offered for inspection is complete, including maintenance.
3. Where inspected landscape work does not comply with requirements, replace rejected work and continue specified maintenance until reinspected by Architect and found acceptable. Remove rejected plants and materials promptly from project site.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 02990

PERMITS

PART 1 GENERAL

1.1 GENERAL

- A. The Permits included in this Section are required to be submitted for and obtained by the Contractor as part of the work scope. They are provided as information for the Contractor because the requirements and regulations contained in these documents shall be adhered to by the Contractor as they pertain to the work done under this Contract.
- B. Should any contradictions or discrepancies between the requirements of the Permits Section and other Sections of these Specifications be found, this sections language shall have precedence.

1.2 RELATED SECTIONS

- A. Section 02200 – Earthwork
- B. Section 02221 - Soil Erosion Control
- C. Section 02930 - General Landscaping Materials and Final Grading

1.3 PERMIT

- A. The following permits are required for each project site:
 - 1. Oakland County Water Resources Commissioner (OCWRC) - Soil Erosion and Sediment Control Permit
 - 2. City of South Lyon Demolition Permit

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION