

BIDDER'S COMPANY NAME

REQUEST FOR PROPOSAL

6134

SITE WORK

FOR

WASHTENAW COUNTY

Prepared By:

Washtenaw County Purchasing
Administration Building
P.O. Box 8645
220 N. Main B-35
Ann Arbor, MI 48107

Robert G. Devault, C.P.M.
Purchasing Manager
(734) 222-6760





WASHTENAW COUNTY

Finance Department

Purchasing Division

PO Box 8645, 220 N. Main St.; Ann Arbor, MI 48107-8645
Phone (734) 222-6760 ♦ Fax (734) 222-6764

REQUEST FOR PROPOSAL # 6134

April 12, 2004

The Washtenaw County Purchasing Division, on behalf of the Washtenaw County Facilities Management Department, hereby issues a sealed Request for Proposal ("RFP") to select a site work contractor ("Consultant," or "Contractor") to modify existing stormwater management structures at the Western County Service Center, located at 705 N. Zeeb Rd., which is owned and operated by Washtenaw County ("the County").

Sealed Proposals: Vendor will deliver one (1) original, signed Proposal and six (6) copies, clearly marked as such, to the following address:

**Washtenaw County Purchasing Division
220 N. Main St. Room B-35
P.O. Box 8645
Ann Arbor, MI 48107**

by 2:00 p.m. on MONDAY, APRIL 26, 2004

This submission shall include the entire Request for Proposal document, requested attachments, and any amendments if issued. A **pre-bid conference will occur on April 19th, 2004, at 3:30pm**, at the Western County Service Center, 2nd floor conference room, located at 705 N. Zeeb Rd., Ann Arbor, MI. Attendance at this conference is optional, but highly recommended.

Proposals received after the above cited time will be considered a late bid and are not acceptable unless waived by the Purchasing Manager.

- Please use the attached self-addressed label or clearly label the envelope **"SEALED RESPONSE TO RFP # 6134"**.
- Please direct purchasing and procedural questions regarding this RFP to Mr. Robert Devault at **(734) 222-6760**.
- Please direct technical questions regarding this RFP to Ms. Kerry Sheldon at **(734) 222-3790 [office] or (734) 260-1926 [cell]**.

Thank you for your interest.

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**ADVERTISEMENT FOR WESTERN COUNTY SERVICE CENTER
SITE WORK**

Sealed Bids will be received by Washtenaw County Purchasing Division, 220 N. Main St. Room B-35; P.O. Box 8645, on or before **April 26, 2004, 2:00 PM**, for Site Grading, Storm Sewer and Site Stabilization work. Bids will be publicly opened and read aloud.

Work to be done includes re-grading an existing detention basin, riser construction in re-graded basin and in another existing basin, stone check dams, erosion control and site stabilization work.

A pre-bid conference will occur on April 19th, 2004, at 3:30pm, at the Western County Service Center, 2nd floor conference room, located at 705 N. Zeeb Rd., Ann Arbor, MI. Attendance at this conference is optional, but highly recommended. Administrative and technical questions regarding this project will be answered at this time. If any questions arise whose answers constitute modifications to the bid documents, an addendum will be issued.

Each proposal shall be accompanied by a certified check, or Bid Bond by a recognized surety, in the amount of five percent (5%) of the total bid price. A proposal, once submitted, becomes the property of the County. At the sole discretion of Washtenaw County's project manager, the County reserves the right to allow a Bidder to reclaim submitted documents provided the documents are requested and retrieved no later than forty-eight (48) hours prior to the scheduled bid opening.

The successful Bidder will be required to furnish satisfactory performance and labor and material bonds in the amount of 100 percent of the bid price and satisfactory insurance coverage.

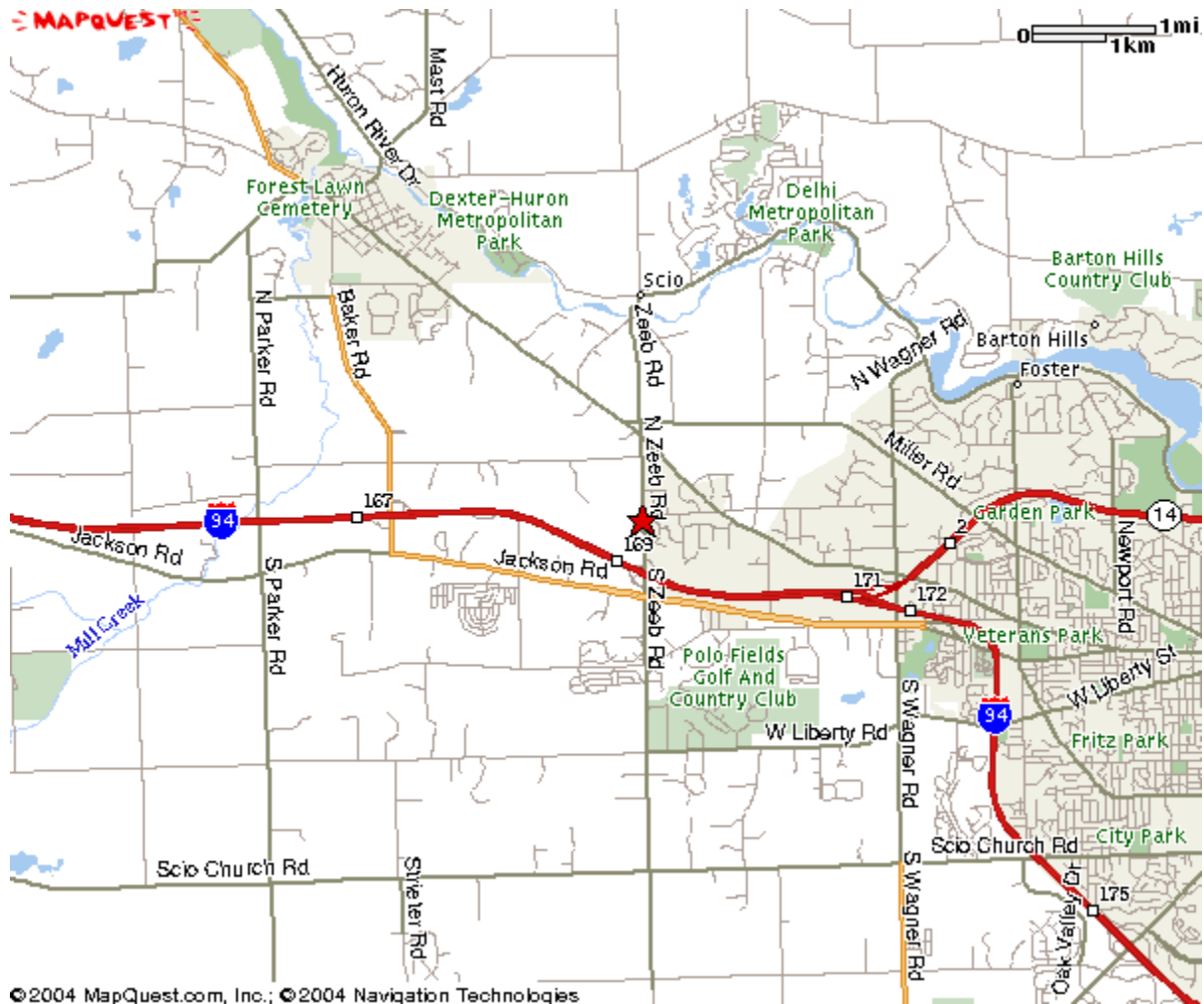
After the time of opening, no Bid may be withdrawn for a period of forty-five (45) days. The County reserves the right to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the County believes to be in its best interest.

Engineering drawings may be obtained at the Washtenaw County Purchasing Division office at 220 N. Main St., on Monday, April 12th, after 8:30am. Procedural questions about the bidding process may be referred to Mr. Robert Devault, Washtenaw County Purchasing Manager, at (734) 222-6760. Technical questions about the project may be referred to Ms. Kerry Sheldon, Washtenaw County Facilities Mgt. project manager, at (734) 222-3790 or (734) 260-1926.

NOTICE OF PRE-BID CONFERENCE

A pre-bid conference for this project will be held on **April 19, 2004, 3:30 PM**, at the Western County Service Center, 2nd floor conference room, located at 705 N. Zeeb Road, Ann Arbor, Michigan (map below).

Attendance at this conference is optional, but highly recommended. Administrative and technical questions regarding this project will be answered at this time. If any questions arise whose answers constitute modifications to the bid documents, an addendum will be issued.



INSTRUCTIONS TO BIDDERS

General

Work to be done under this Contract is generally described through the technical specifications and must be completed fully in accordance with the Contract Documents. All work to be done under this Contract is located near the City of Ann Arbor at the Western County Service Center, 705 N. Zeeb Road.

The County shall make available to all prospective Bidders, prior to receipt of the Bids, access to the area in which the work is to be performed.

Any proposal that does not conform fully with these instructions may be rejected.

Proposals

Proposals must be submitted on the "Proposal" forms and "Bid Forms" provided, without removal from the binder, with each blank properly filled in. Sealed proposals will be received by the Washtenaw County Purchasing, 220 N. Main St., PO Box 8645, Ann Arbor, Michigan, at the time stipulated in the Advertisement, promptly after which proposals will be publicly opened and read aloud. Each Proposal must be enclosed in a sealed envelope, endorsed across one end, as follows:

SEALED RESPONSE TO RFP # 6134

The County intends to award a Contract(s) to the lowest responsible Bidder(s). The County may also utilize discounts offered in the Bid Forms, if any, to determine the lowest responsible Bidder on each division, so that the lowest total cost is achieved for the County. For unit price bids, the Contract will be awarded based upon the lump sum and unit prices stated by the Bidder for the work items specified in the bid documents, with consideration given to any alternates selected by the County. If the County determines that the unit price for any item is materially different for the work item bid than other bidders or the general market, the County, in its sole discretion, in addition to any other right it may have, may reject the Bid as not responsible or non-conforming.

The acceptability of major subcontractors will be considered in determining if a Bidder is responsible. In comparing proposals, the County will give consideration to alternate proposals for items listed in the forms, or other alternates which the Bidder may wish to submit, but preference will be given to Base Bid Proposals.

The County reserves the right to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the County believes to be in its best interest.

Bid Security

Each proposal must be accompanied by a certified check, or Bid Bond by a surety licensed and authorized to do business within the State of Michigan, in the amount of five percent (5%) of the total of the bid price.

Withdrawal of Bids

After the time of opening, no Bid may be withdrawn for the period of days specified in the Advertisement.

Contract Time

Time is of the essence in the performance of the work under this Contract. The available time for work under this Contract is indicated on Page PS-1, Project Schedule and Award. These time requirements cannot be met, the Bidder must stipulate on Bid Form Section 2 - Time Alternate its schedule for performance of the work. Consideration will be given to time in evaluating bids.

Major Subcontractors

The Bidder shall identify each major subcontractor it expects to engage for this Contract if the work to be subcontracted is fifteen (15%) or more of the bid sum or over \$50,000, whichever is less. The Bidder also shall identify the work to be subcontracted to each major subcontractor.

PROJECT SCHEDULE AND CONTRACT AWARD

The entire work under this Contract shall be completed in accordance with, and subject to, the scheduling requirements as outlined below, and all of the other requirements of the Contract Documents.

1. The Contractor shall begin the work on this project on or about May 24, 2004, and only upon receipt of the fully executed contract.
2. The west and east basin work shall be completed by June 17, 2004.
3. The entire work of the project, including final stabilization of the site shall be completed by June 28, 2004.
4. The final clean-up and removal of temporary erosion control features shall be completed by July 9, 2004. Coordinate with the Engineer prior to removing temporary erosion control measures.

The Contractor shall be furnished with two (2) copies of the Contract, for his/her execution, on or about May 5, 2004. The Contractor shall properly execute both copies of the Contract and return them, with the required Bonds and Insurance Certificates, to the County by May 12, 2004. The Contractor shall not begin the work before the applicable date(s), as described herein, and in no case before receipt of the fully executed contract. Final executed contract is expected May 20, 2004.

LEGAL STATUS OF BIDDER

(The Bidder shall fill out the appropriate form and strike out the other two.)

Bidder declares that it is:

***A corporation** organized and doing business under the laws of the state of _____, for whom _____, bearing the office title of _____, whose signature is affixed to this proposal, is authorized to execute contracts.

***A partnership**, list all members and the street and mailing address of each:

Also identify the County and State where partnership papers are filed:

County of _____, State of _____

***An individual**, whose signature with address, is affixed to this proposal:

(initial here)

PROPOSAL

Washtenaw County Purchasing Division
220 N. Main St., PO Box 8645
Ann Arbor, Michigan 48107

Ladies and Gentlemen:

The undersigned, as Bidder, declares that this Bid is made in good faith, without fraud or collusion with any person or persons bidding on the same Contract; that this Bidder has carefully read and examined the bid documents, including Advertisement, Notice of Pre-Bid Conference, Instructions to Bidders, Proposal, Bid Forms, Contract, Bond Forms, General Conditions, Technical Specifications, all Addenda, and the Plans, and fully understands them. The Bidder declares that it conducted a full investigation at the site and of the work proposed and is fully informed as to the nature of the work and the conditions relating to the work's performance. The Bidder also declares that it has extensive experience in successfully completing projects similar to this one.

The Bidder acknowledges that it has not received or relied upon any representations or warrants of any nature whatsoever from the County, its agents or employees, and that this Bid is based solely upon the Bidder's own independent business judgment.

The undersigned proposes to perform all work shown on the plans or described in the bid documents, including any addenda issued, and to furnish all necessary machinery, tools, apparatus, and other means of construction to do all the work, furnish all the materials, and complete the work in strict accordance with all terms of the Contract of which this proposal is one part.

In accordance with these Bid Documents, and Addenda numbered _____, the undersigned, as Bidder, proposes to perform at the sites, all the work included herein for the amounts set forth in the Bid Forms.

The Bidder encloses a certified check or Bid Bond in the amount of five percent (5%) of the total of the Bid Price. The Bidder agrees both to contract for the work and to furnish the necessary Bonds and Insurance Certificates within ten (10) days after being notified of the acceptance of the Bid.

If this Bid is accepted by the County and the Bidder fails to contract and furnish the required Bonds and Insurance Certificates within ten (10) days after being notified of the acceptance of this Bid, then the Bidder shall be considered to have abandoned the Contract and the certified check or Bid Bond accompanying this Proposal shall become due and payable to the County.

If the Bidder enters into the Contract in accordance with this Proposal, or if this Proposal is rejected, then the accompanying check or Bid Bond shall be returned to the Bidder.

RFP # 6134 Western County Service Center Site Work

In submitting this Bid, it is understood that the right is reserved by the County to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the County believes to be in its best interest.

SIGNED THIS _____ DAY OF _____, 20 ____.

Bidder's Name

Official Address

Authorized Signature of Bidder

Telephone Number

(Printed Name of Signer Above)

BID FORM

Section 1 - Material and Equipment Alternates

The Base Bid proposal price shall include materials and equipment selected from the designated items and manufacturers listed in the bidding documents. This is done to establish uniformity in bidding and to establish standards of quality for the items named.

If the Contractor wishes to quote alternate items for consideration by the County, it may do so under this Section. A complete description of the item and the proposed price differential must be provided. Unless approved at the time of award, substitutions where items are specifically named will be considered only as a negotiated change in Contract Sum.

Item #	Description	Add/Deduct Amount

If the Bidder does not suggest any material or equipment alternate, the Bidder **MUST** complete the following statement:

For the work outlined in this request for Bid, the Bidder does NOT propose any material or equipment alternate under the Contract.

Signature of Authorized Representative of Bidder

Section 2 - Time Alternate

If the Bidder takes exception to the time stipulated in the Project Schedule and Contract Award, Page PS-1, it is requested to stipulate below its proposed time for performance of the work. Consideration will be given to time in evaluating bids.

1. The Contractor shall begin the work on this project on or about _____, and only upon receipt of the fully executed contract.
2. The west and east basin work shall be completed by _____.
3. The entire work of the project, including final stabilization of the site shall be completed by _____.

RFP # 6134 Western County Service Center Site Work

The undersigned as Bidder declares that he/she has familiarized himself/herself with the site and the conditions under which all work must be performed and he/she declares that he/she will provide all the labor, materials and workmanship required to construct the Western County Service Center site renovations in accordance with the plans and specifications which he/she accepts as adequate.

I. SCIO BASIN

<u>No.</u>	<u>Description</u>	<u>Qty</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
1.	Removals	1	LS	\$	\$
2.	Site Earthwork	1	LS	\$	\$
3.	Silt Fence	290	LF	\$	\$
4.	Protective Tree Fence	300	LF	\$	\$
5.	12-inch ADS N-12	25	LF	\$	\$
6.	Riser Structure & Stone Filter	1	EA	\$	\$
7.	Scio Basin Stabilization (includes topsoil, seed & mulch, & netting)	1	LS	\$	\$
8.	Staging Area & Access Area Stabilization	1	LS	\$	\$
9.	Temporary Stone Check Dam	1	EA	\$	\$
10.	Construct Construction Fencing	150	LF	\$	\$
Subtotal - Item I					\$

II. EAST DETENTION BASIN

<u>No.</u>	<u>Description</u>	<u>Qty</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
1.	Stone Filter Berm	1	EA	\$	\$
2.	Staging Area & Access Area Stabilization	1	LS	\$	\$
Subtotal - Item II					\$

III. WEST DETENTION BASIN

<u>No.</u>	<u>Description</u>	<u>Qty</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
1.	Removals	1	LS	\$	\$
2.	Adjust Outlet Pipe	1	LS	\$	\$
3.	Riser Structure & Stone Filter	1	LS	\$	\$

III. WEST DETENTION BASIN, CONT'D

4.	Stone Filter Berm	1	EA	\$	\$
5.	Staging Area & Access Area Stabilization	1	LS	\$	\$
6.	Inlet Filters	2	EA	\$	\$
Subtotal - Item III					\$

IV. BIO-SWALE

<u>No.</u>	<u>Description</u>	<u>Qty</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Total</u>
1.	Earthwork	1	LS	\$	\$
2.	8-inch ADS N-12	41	LF	\$	\$
3.	2.0 ft dia. Inverts (including casting)	2	EA	\$	\$
4.	Grouted Cobble Riprap Area	135	SFT	\$	\$
5.	Bio-Swale Stabilization (includes compost, seed & mulch & netting)	1	LS	\$	\$
Subtotal - Item IV					\$

Note: Items 1-3 and 5 may be eliminated from the project work leaving only construction of the grouted cobble riprap.

TOTAL - Items I through IV \$

Company Name: _____

Authorized by: _____

Date: _____

WITNESSES: _____

**SAMPLE SERVICE CONTRACT – TO BE COMPLETED UPON BID AWARD
(NAME OF CONTRACTOR)**

THIS AGREEMENT is made this _____ day of _____, 20____, by the COUNTY OF WASHTENAW, a municipal corporation, with offices located in the County Administration Building, 220 North Main Street, Ann Arbor, Michigan 48107 (“County”) and **(NAME OF CONTRACTOR)** located at **(CONTRACTOR’S ADDRESS)** (“Contractor”).

In consideration of the promises below, the parties mutually agree as follows:

ARTICLE I - SCOPE OF SERVICES

The Contractor will **(SPELL OUT SCOPE OF SERVICE)**

ARTICLE II - COMPENSATION

Upon completion of the above services and submission of invoices, the County will pay the Contractor an amount not to exceed _____ Dollars (\$_____).

ARTICLE III - REPORTING OF CONTRACTOR

Section 1. The Contractor is to report to **(DEPARTMENT HEAD TITLE)** and will cooperate and confer with him/her as necessary to insure satisfactory work progress.

Section 2. All reports, estimates, memoranda and documents submitted by the Contractor must be dated and bear the Contractor's name.

Section 3. All reports made in connection with these services are subject to review and final approval by the County Administrator.

Section 4. The County may review and inspect the Contractor's activities during the term of this Contract.

Section 5. When applicable, the Contractor will submit a final written report to the County Administrator.

Section 6. After reasonable notice to the Contractor, the County may review any of the Contractor’s internal records, reports, or insurance policies.

ARTICLE IV - TERM

This contract begins on **(MONTH, DAY, YEAR)** and ends on **(MONTH, DAY, YEAR)**.

ARTICLE V - PERSONNEL

Section 1. The Contractor will provide the required services and will not subcontract or assign the services without the County's written approval.

Section 2. The Contractor will not hire any County employee for any of the required services without the County's written approval.

Section 3. The parties hereto agree that the Contractor is neither an employee nor an agent of the County for any purpose.

ARTICLE VI - INDEMNIFICATION AGREEMENT

The Contractor will protect, defend and indemnify Washtenaw County, its officers, agents, servants, volunteers and employees from any and all liabilities, claims, liens, fines, demands and costs, including legal fees, of whatsoever kind and nature which may result in injury or death to any persons, including the Contractor's own employees, and for loss or damage to any property, including property owned or in the care, custody or control of Washtenaw County in connection with or in any way incident to or arising out of the occupancy, use, service, operations, performance or non-performance of work in connection with this contract resulting in whole or in part from negligent acts or omissions of Contractor, any sub-contractor, or any employee, agent or representative of the contractor or any sub-contractor.

ARTICLE VII - INSURANCE REQUIREMENTS

The Contractor will maintain at its own expense during the term of this Contract, the following insurance:

1. Workers' Compensation Insurance with Michigan statutory limits and Employers Liability Insurance with a minimum limit of \$100,000 each accident for any employee.
2. Comprehensive/Commercial General Liability Insurance with a combined single limit of \$1,000,000 each occurrence for bodily injury and property damage. The County shall be added as "additional insured" on general liability policy with respect to the services provided under this Contract.
3. Automobile Liability Insurance covering all owned, hired and non-owned

vehicles with Personal Protection Insurance and Property Protection Insurance to comply with the provisions of the Michigan No Fault Insurance Law, including residual liability insurance with a minimum combined single limit of \$1,000,000 each accident for bodily injury and property damage.

Insurance companies, named insureds and policy forms shall be subject to the approval of the Washtenaw County Administrator. Such approval shall not be unreasonably withheld. Insurance policies shall not contain endorsements or policy conditions which reduce coverage provided to Washtenaw County. Contractor shall be responsible to Washtenaw County or insurance companies insuring Washtenaw County for all costs resulting from both financially unsound insurance companies selected by Contractor and their inadequate insurance coverage. Contractor shall furnish the Washtenaw County Administrator with satisfactory certificates of insurance or a certified copy of the policy, if requested by the County Administrator.

No payments will be made to the Contractor until the current certificates of insurance have been received and approved by the Administrator. If the insurance as evidenced by the certificates furnished by the Contractor expires or is canceled during the term of the Contract, services and related payments will be suspended. Contractor shall furnish the County Administrator's Office with certification of insurance evidencing such coverage and endorsements at least ten (10) working days prior to commencement of services under this Contract. Certificates shall be addressed to the County Administrator, P. O. Box 8645, Ann Arbor, MI, 48107, and shall provide for 30 day written notice to the certificate holder of cancellation of coverage.

ARTICLE VIII - COMPLIANCE WITH LAWS AND REGULATIONS

The Contractor will comply with all federal, state and local regulations, including but not limited to, all applicable OSHA/MIOSHA requirements and the Americans with Disabilities Act.

ARTICLE IX - INTEREST OF CONTRACTOR AND COUNTY

The Contractor promises that it has no interest which would conflict with the performance of services required by this Contract. The Contractor also promises that, in the performance of this Contract, no officer, agent, employee of the County of Washtenaw, or member of its governing bodies, may participate in any decision relating to this Contract which affects his/her personal interest or the interest of any corporation, partnership or association in which he/she is directly or indirectly interested or has any personal or pecuniary interest. However, this paragraph does not apply if there has been compliance with the provisions of Section 3 of Act No. 317 of the Public Acts of 1968 and/or Section 30 of Act No. 156 of Public Acts of 1851, as amended by Act No. 51 of the Public Acts of 1978, whichever is applicable.

ARTICLE X - CONTINGENT FEES

The Contractor promises that it has not employed or retained any company or person, other than bona fide employees working solely for the Contractor, to solicit or secure this Contract, and that it has not paid or agreed to pay any company or person, other than bona fide employees working solely for the Contractor, any fee, commission, percentage, brokerage fee, gifts or any other consideration contingent upon or resulting from the award or making of this contract. For breach of this promise, the County may cancel this Contract without liability or, at its discretion, deduct the full amount of the fee, commission, percentage, brokerage fee, gift or contingent fee from the compensation due the Contractor.

ARTICLE XI - EQUAL EMPLOYMENT OPPORTUNITY

The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex, sexual orientation, national origin, physical handicap, age, height, weight, marital status, veteran status, religion and political belief (except as it relates to a bona fide occupational qualification reasonably necessary to the normal operation of the business).

The Contractor will take affirmative action to eliminate discrimination based on sex, race, or a handicap in the hiring of applicant and the treatment of employees. Affirmative action will include, but not be limited to: Employment; upgrading, demotion or transfer; recruitment advertisement; layoff or termination; rates of pay or other forms of compensation; selection for training, including apprenticeship.

The Contractor agrees to post notices containing this policy against discrimination in conspicuous places available to applicants for employment and employees. All solicitations or advertisements for employees, placed by or on the behalf of the Contractor, will state that all qualified applicants will receive consideration for employment without regard to race, creed, color, sex, sexual orientation, national origin, physical handicap, age, height, weight, marital status, veteran status, religion and political belief.

ARTICLE XII - LIVING WAGE

The parties understand that the County has enacted a Living Wage Ordinance that requires covered vendors who execute a service or professional service contract with the County to pay their employees under that contract, a minimum of either \$9.09 per hour with benefits or \$10.66 per hour without benefits. Contractor agrees to comply with this Ordinance in paying its employees. Contractor understands and agrees that an adjustment of the living wage amounts, based upon the Health and Human Services poverty guidelines, was made on or before April 30, 2003, and will be made annually thereafter, which amount shall be automatically incorporated into this contract. County

agrees to give Contractor thirty (30) days' written notice of such change. Contractor agrees to post a notice containing the County's Living Wage requirements at a location at its place of business accessed by its employees

ARTICLE XIII - EQUAL ACCESS

The Contractor shall provide the services set forth in Article I without discrimination on the basis of race, color, religion, national origin, sex, sexual orientation, marital status, physical handicap, or age.

ARTICLE XIV - OWNERSHIP OF DOCUMENTS AND PUBLICATION

All documents developed as a result of this Contract will be freely available to the public. None may be copyrighted by the Contractor. During the performance of the services, the Contractor will be responsible for any loss of or damage to the documents while they are in its possession and must restore the loss or damage at its expense. Any use of the information and results of this contract by the Contractor must reference the project sponsorship by the County. Any publication of the information or results must be co-authored by the County.

ARTICLE XV - ASSIGNS AND SUCCESSORS

This Contract is binding on the County and the Contractor, their successors and assigns. Neither the County nor the Contractor will assign or transfer its interest in this contract without the written consent of the other.

ARTICLE XVI - TERMINATION OF CONTRACT

Section 1. Termination without cause. Either party may terminate the Contract by giving thirty (30) days written notice to the other party.

ARTICLE XVII - PAYROLL TAXES

The Contractor is responsible for all applicable state and federal social security benefits and unemployment taxes and agrees to indemnify and protect the County against such liability.

ARTICLE XVIII - PRACTICE AND ETHICS

The parties will conform to the code of ethics of their respective national professional associations.

ARTICLE XIX- CHANGES IN SCOPE OR SCHEDULE OF SERVICES

Changes mutually agreed upon by the County and the Contractor will be incorporated into this Contract by written amendment signed by both parties.

ARTICLE XX - CHOICE OF LAW AND FORUM

This contract is to be interpreted by the laws of Michigan. The parties agree that the proper forum for any litigation arising out of this Contract is in Washtenaw County, Michigan.

ARTICLE XXI - EXTENT OF CONTRACT

This Contract represents the entire agreement between the parties hereto and supersedes all prior representations, negotiations or agreements whether written or oral.

ATTESTED TO: WASHTENAW COUNTY, MICHIGAN

By: _____ By: _____
Peggy M. Haines (Date) Robert E. Guenzel (Date)
County Clerk/Register County Administrator

APPROVED AS TO CONTENT: CONTRACTOR

By: _____ By: _____
(DEPARTMENT HEAD) (Date) (CONTRACTOR'S NAME) (Date)

APPROVED AS TO FORM:

By: _____
Curtis N. Hedger (DATE)
Office of Corporation Counsel

PERFORMANCE BOND

- (1) _____
of _____
(referred to as "Principal"), and _____,
a corporation duly authorized to do business in the State of Michigan (referred to as
"Surety"), are bound to the County of Washtenaw, Michigan (referred to as
"County"), for \$ _____ Dollars
(\$ _____) the payment of which Principal and Surety bind themselves, their
heirs, executors, administrators, successors and assigns, jointly and severally, by
this bond.
- (2) The Principal has entered a written contract with the County, dated
_____, 20____, for: _____
and this bond is given for that contract in compliance with Act No. 213 of the
Michigan Public Acts of 1963, as amended.
- (3) Whenever the Principal is declared by the County to be in default under the
Contract, the Surety may promptly remedy the default or shall promptly:
- (a) Complete the Contract in accordance with its terms and conditions; or
 - (b) Obtain a bid or bids for submission to the County for completing the contract
in accordance with its terms and conditions, and upon determination by
Surety of the lowest responsible bidder, arrange for a Contract between such
Bidder and the County, and make available, as work progresses, sufficient
funds to pay the cost of completion less the balance of the contract price; but
not exceeding, including other costs and damages for which Surety may be
liable hereunder, the amount set forth in paragraph 1.
- (4) Surety shall have no obligation to the County if the Principal fully and promptly
performs under the Contract.
- (5) Surety agrees that no change, extension of time, alteration or addition to the terms
of the Contract or to the work to be performed thereunder, or the specifications
accompanying it shall in any way affect its obligations on this bond, and waives
notice of any such change, extension of time, alteration or addition to the terms of
the Contract or to the work, or to the specifications.

SIGNED AND SEALED this _____ day of _____, 20_____.

(Name of Surety Company)

By _____
(Signature)

Its _____
(Title of Office)

(Name of Principal)

By _____
(Signature)

Its _____
(Title of Office)

Approved as to form:

Curtis Hedger, Washtenaw County
Corporation Counsel

Name and address of agent:

GENERAL CONDITIONS

Section 1 - Execution, Correlation and Intent of Documents

The Contract Documents shall be executed in duplicate by the County and the Contractor.

The Contract Documents are complementary and what is called for by any one shall be binding. The intention of the documents is to include all labor and materials, equipment and transportation necessary for the proper execution of the work. Materials or work described in words which so applied have a well-known technical or trade meaning have the meaning of those recognized standards.

Section 2 - Familiarity with Work

The Bidder or its representative shall make personal investigations of the site of the work and of existing structures and shall determine to its own satisfaction the conditions to be encountered, the nature of the ground, the difficulties involved, and all other factors affecting the work proposed under this Contract. The Bidder to whom this Contract is awarded will not be entitled to any additional compensation unless conditions are clearly different from those which could reasonably have been anticipated by a person making diligent and thorough investigation of the site.

The Bidder shall immediately notify the County upon discovery, and in every case prior to submitting its Bid, of every error or omission in the bidding documents that would be identified by a reasonably competent, diligent Bidder. In no case will a Bidder be allowed the benefit of extra compensation or time to complete the work under this Contract for extra expenses or time spent as a result of the error or omission.

Section 3 - Liquidated Damages

There will be no Liquidated Damages assigned to this Contract. Time is of the essence, however; and completion by the due date is expected except for agreed upon time extensions to prevent damages to the County.

Section 4 - Materials, Appliances, Employees

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation, and other facilities necessary or used for the execution and completion of the work. Unless otherwise specified, all materials incorporated in the permanent work shall be new, and both workmanship and materials shall be of the highest quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

The Contractor shall at all times enforce strict discipline and good order among its employees, and shall seek to avoid employing on the work any unfit person or anyone not skilled in the work assigned.

Adequate sanitary facilities shall be provided by the Contractor.

Section 5 - Permits and Regulations

The Contractor must secure and pay for all permits and licenses necessary for the execution of the work. These include, but are not limited to, County erosion control permits, right-of-way permits, lane closure permits, right-of-way occupancy permits, and the like. The County shall secure and pay for easements shown on the plans unless otherwise specified.

The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the Contract Documents are at variance with those requirements, it shall promptly notify the Supervising Professional in writing, and any necessary changes shall be adjusted as provided in the Contract for changes in the work.

Section 6 - Inspection of Work

The County shall provide sufficient competent personnel for the inspection of the work.

If the specifications, the Supervising Professional's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give the Supervising Professional timely notice of its readiness for inspection, and if the inspection is by an authority other than the Supervising Professional, of the date fixed for the inspection. Inspections by the Supervising Professional shall be made promptly, and where practicable at the source of supply. If any work should be covered up without approval or consent of the Supervising Professional, it must, if required by the Supervising Professional, be uncovered for examination and properly restored at the Contractor's expense.

Re-examination of any work may be ordered by the Supervising Professional, and, if so ordered, the work must be uncovered by the Contractor. If the work is found to be in accordance with the contract documents, the County shall pay the cost of re-examination and replacement. If the work is not in accordance with the contract documents, the Contractor shall pay the cost.

Section 7 - Superintendence

The Contractor shall keep on the work site, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Supervising Professional. The superintendent will be responsible to perform all on-site project management for the Contractor. The superintendent shall be experienced in the work required for this Contract. The superintendent shall represent the Contractor and all direction given to the superintendent shall be binding as if given to the Contractor. Important directions shall immediately be confirmed in writing to the Contractor. Other directions will be confirmed on

written request. The Contractor shall give efficient superintendence to the work, using its best skill and attention.

Section 8 - Changes in the Work

The County may make changes to the quantities of work within the general scope of the Contract at any time by a written order and without notice to the sureties. If the changes add to or deduct from the extent of the work, the Contract Sum shall be adjusted accordingly. All the changes shall be executed under the conditions of the original Contract except that any claim for extension of time caused by the change shall be adjusted at the time of ordering the change.

In giving instructions, the Supervising Professional shall have authority to make minor changes in the work not involving extra cost and not inconsistent with the purposes of the work, but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order by the Supervising Professional, and no claim for an addition to the Contract Sum shall be valid unless the additional work was ordered in writing.

The Contractor shall proceed with the work as changed and the value of the work shall be determined as provided in Claims for Extra Cost - Section 10.

Section 9 - Extension of Time

Extension of time stipulated in the Contract for completion of the work will be made if and as the Supervising Professional may deem proper under any of the following circumstances:

- (1) When work under an extra work order is added to the work under this Contract;
- (2) When the work is suspended as provided in Section 15;
- (3) When the work of the Contractor is delayed on account of conditions which could not have been foreseen, or which were beyond the control of the Contractor, and which were not the result of its fault or negligence;
- (4) Delays in the progress of the work caused by any act or neglect of the County or of its employees or by other Contractors employed by the County;
- (5) Delay due to an act of Government;
- (6) Delay by the Supervising Professional in the furnishing of plans and necessary information;
- (7) Other cause which in the opinion of the Supervising Professional entitles the Contractor to an extension of time.

The Contractor shall notify the Supervising Professional within seven (7) days of an occurrence or conditions which, in the Contractor's opinion, entitle it to an extension of time. The notice shall be in writing and submitted in ample time to permit full investigation and evaluation of the Contractor's claim. The Supervising Professional shall acknowledge receipt of the Contractor's notice within 7 days of its receipt. Failure to timely provide the written notice shall constitute a waiver by the Contractor of any claim.

In situations where an extension of time in Contract Completion is appropriate under this or any other section of the Contract, the Contractor understands and agrees that the only available adjustment for events that cause any delays in Contract Completion shall be extension of the required time for Contract Completion and that there shall be no adjustments in the money due the Contractor on account of the delay.

Section 10 - Claims for Extra Cost

If the Contractor claims that any instructions by drawings or other media issued after the date of the Contract involved extra cost under this Contract, it shall give the Supervising Professional written notice within seven (7) days after the receipt of the instructions, and in any event before proceeding to execute the work, except in emergency endangering life or property. The procedure shall then be as provided for Changes in the Work-Section 13. No claim shall be valid unless so made.

Section 11 - Progress Payments

The Contractor shall submit each month, or at longer intervals, if it so desires, an invoice covering work performed for which it believes payment, under the Contract terms, is due. The submission shall be to the Washtenaw County Facilities Management project manager with a copy to the Engineer. The Supervising Professional will, within ten (10) days following submission of the invoice, prepare a certificate for payment for the work in an amount to be determined by the Supervising Professional as fairly representing the acceptable work performed during the period covered by the Contractor's invoice. To insure the proper performance of this Contract, the County will retain a percentage of the estimate in accordance with Act 524, Public Acts of 1980. The County will then, following the receipt of the Supervising Professional's Certificate, make payment to the Contractor as soon as feasible, which is anticipated will be within fifteen (15) days.

Section 12 - Deductions for Uncorrected Work

If the Supervising Professional decides it is not expedient to correct work that has been damaged or that was not done in accordance with the Contract, an equitable deduction from the Contract price shall be made.

Section 13 - Correction of Work Before Final Payment

The Contractor shall promptly remove from the premises all materials condemned by the Supervising Professional as failing to meet Contract requirements, whether incorporated in

the work or not, and the Contractor shall promptly replace and re-execute the work in accordance with the Contract and without expense to the County and shall bear the expense of making good all work of other contractors destroyed or damaged by the removal or replacement.

If the Contractor does not remove the condemned work and materials within ten (10) days after written notice, the County may remove them and, if the removed material has value, may store the material at the expense of the Contractor. If the Contractor does not pay the expense of the removal within ten (10) days thereafter, the County may, upon ten (10) days written notice, sell the removed materials at auction or private sale and shall pay to the Contractor the net proceeds, after deducting all costs and expenses that should have been borne by the Contractor. If the removed material has no value, the Contractor must pay the County the expenses for disposal within ten (10) days of invoice for the disposal costs.

The inspection or lack of inspection of any material or work pertaining to this Contract shall not relieve the Contractor of its obligation to fulfill this Contract and defective work shall be made good. Unsuitable materials may be rejected by the Supervising Professional notwithstanding that the work and materials have been previously overlooked by the Supervising Professional and accepted or estimated for payment or paid for. If the work or any part shall be found defective at any time before the final acceptance of the whole work, the Contractor shall forthwith make good the defect in a manner satisfactory to the Supervising Professional. The judgment and the decision of the Supervising Professional as to whether the materials supplied and the work done under this Contract comply with the requirements of the Contract shall be conclusive and final.

Section 14 - Acceptance and Final Payment

Upon receipt of written notice that the work is ready for final inspection and acceptance, the Supervising Professional will promptly make the inspection. When the Supervising Professional finds the work acceptable under the Contract and the Contract fully performed, the Supervising Professional will promptly sign and issue a final certificate stating that the work required by this Contract has been completed and is accepted by the County under the terms and conditions of the Contract. The entire balance found to be due the Contractor, including the retained percentage, shall be paid to the Contractor by the County within thirty (30) days after the date of the final certificate.

Before issuance of final certificates, the Contractor shall file with the County:

- (1) The consent of the surety to payment of the final estimate;
- (2) The Contractor's Affidavit in the form required by Section 36.

In case the Affidavit or consent is not furnished, the County may retain out of any amount due the Contractor, sums sufficient to cover all lienable claims.

The making and acceptance of the final payment shall constitute a waiver of all claims by the County, except those arising from:

- (1) unsettled liens;
- (2) faulty work appearing within twelve (12) months after final payment;
- (3) hidden defects in meeting the requirements of the plans and specifications;
- (4) manufacturer guarantees.

It shall also constitute a waiver of all claims by the Contractor, except those previously made and still unsettled.

Section 15 - Suspension of Work

The County may at any time suspend the work, or any part by giving five (5) days notice to the Contractor in writing. The work shall be resumed by the Contractor within ten (10) days after the date fixed in the written notice from the County to the Contractor to do so. The County shall reimburse the Contractor for expense incurred by the Contractor in connection with the work under this Contract as a result of the suspension.

If the work, or any part, shall be stopped by the notice in writing, and if the County does not give notice in writing to the Contractor to resume work at a date within ninety (90) days of the date fixed in the written notice to suspend, then the Contractor may abandon that portion of the work suspended and will be entitled to the estimates and payments for all work done on the portions abandoned, if any, plus ten percent (10%) of the value of the work abandoned, to compensate for loss of overhead, plant expense, and anticipated profit.

Section 16 - Delays and the County's Right to Terminate Contract

If the Contractor refuses or fails to execute the work, or any separate part of it, with the diligence required to insure completion, ready for operation, within the allowable number of consecutive calendar days specified plus extensions, or fails to complete the work within the required time, the County may, by written notice to the Contractor, terminate its right to proceed with the work or any part of the work as to which there has been delay. After providing the notice the County may take over the work and prosecute it to completion, by contract or otherwise, and the Contractor and its sureties shall be liable to the County for any excess cost to the County. If the Contractor's right to proceed is terminated, the County may take possession of and utilize in completing the work, any materials, appliances and plants as may be on the site of the work and useful for completing the work.

If the Contractor is adjudged a bankrupt, or if it makes a general assignment for the benefit of creditors, or if a receiver is appointed on account of its insolvency, or if it persistently or repeatedly refuses or fails except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials, or if it fails to make prompt payments to subcontractors or for material or labor, or persistently disregards laws, ordinances or the instructions of the Supervising Professional, or otherwise is guilty of a substantial violation of any provision of the Contract, then the County, upon the certificate of the Supervising

Professional that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor three (3) days written notice, terminate this Contract. The County may then take possession of the premises and of all materials, tools and appliances thereon and without prejudice to any other remedy it may have, make good the deficiencies or finish the work by whatever method it may deem expedient, and deduct the cost from the payment due the Contractor. The Contractor shall not be entitled to receive any further payment until the work is finished. If the expense of finishing the work, including compensation for additional managerial and administrative services exceeds the unpaid balance of the Contract Sum, the Contractor and its surety are liable to the County for any excess cost incurred. The expense incurred by the County, and the damage incurred through the Contractor's default, shall be certified by the Supervising Professional.

Section 17 - Contractor's Right to Terminate Contract

If the work should be stopped under an order of any court, or other public authority, for a period of three (3) months, through no act or fault of the Contractor or of anyone employed by it, then the Contractor may, upon seven (7) days written notice to the County, terminate this Contract and recover from the County payment for all acceptable work executed plus reasonable profit.

Section 18 - County's Right To Complete Work

If the Contractor should neglect to execute the work properly or fail to perform any provision of this Contract, the County, three (3) days after giving written notice to the Contractor and its surety may, without prejudice to any other remedy the County may have, make good the deficiencies and may deduct the cost from the payment due to the Contractor.

Section 19 - Removal of Equipment and Supplies

In case of termination of this Contract before completion, from any or no cause, the Contractor, if notified to do so by the County, shall promptly remove any part or all of its equipment and supplies from the property of the County, failing which the County shall have the right to remove the equipment and supplies at the expense of the Contractor.

The removed equipment and supplies may be stored by the County and, if all costs of removal and storage are not paid by the Contractor within ten (10) days of invoicing, the County upon ten (10) days written notice may sell the equipment and supplies at auction or private sale, and shall pay the Contractor the net proceeds after deducting all costs and expenses that should have been borne by the Contractor and after deducting all amounts claimed due by any lien holder of the equipment or supplies.

Section 20 - Responsibility for Work

The Contractor assumes full responsibility for any and all materials and equipment used in the construction of the work and may not make claims against the County for damages to

materials and equipment from any cause except negligence or willful act of the County. Until its final acceptance, the Contractor shall be responsible for damage to or destruction of the project (except for any part covered by Partial Completion and Acceptance - Section 21). The Contractor shall make good all work damaged or destroyed before acceptance. All risk of loss remains with the Contractor until final acceptance of the work (Section 14) or partial acceptance (Section 21). The Contractor is advised to investigate obtaining its own builders risk insurance.

The Contractor shall guarantee the quality of its work for a period of one (1) year. At the end of one (1) year after Contractor's receipt of final payment, the work shall be inspected in the presence of the Contractor and the Supervising Professional; and any defects in the work shall be corrected at the Contractor's expense as soon as practicable but in all cases within sixty (60) days.

Section 21 - Partial Completion and Acceptance

If at any time prior to the issuance of the final certificate referred to in Acceptance and Final Payment - Section 14, any portion of the permanent construction has been satisfactorily completed, and if the Supervising Professional determines that portion of the permanent construction is not required for the operations of the Contractor but is needed by the County, the Supervising Professional shall issue to the Contractor a certificate of partial completion, and immediately the County may take over and use the portion of the permanent construction described in the certificate, and exclude the Contractor from that portion.

The issuance of a certificate of partial completion shall not constitute an extension of the Contractor's time to complete the portion of the permanent construction to which it relates if the Contractor has failed to complete it in accordance with the terms of this Contract. The issuance of the certificate shall not release the Contractor or its sureties from any obligations under this Contract including bonds.

If prior use increases the cost of, or delays the work, the Contractor shall be entitled to extra compensation, or extension of time, or both, as the Supervising Professional may determine.

Section 22 - Payments Withheld Prior to Final Acceptance of Work

The County may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any certificate to the extent reasonably appropriate to protect the County from loss on account of:

- (1) Defective work not remedied;
- (2) Claims filed or reasonable evidence indicating probable filing of claims by other parties against the Contractor;
- (3) Failure of the Contractor to make payments properly to subcontractors or for material or labor;
- (4) Damage to another Contractor.

When the above grounds are removed or the Contractor provides a Surety Bond satisfactory to the County which will protect the County in the amount withheld, payment shall be made for amounts withheld under this section.

Section 23 - Surety Bonds

Bonds will be required from the successful bidder as follows:

- (1) A Performance Bond to the County for the amount of the Bid(s) accepted.

Bonds shall be executed on forms supplied by the County in a manner and by a Surety Company satisfactory to the County Attorney. The Performance Bond must run through the 2-year maintenance period.

Section 23 - Damage Claims

The Contractor shall be held responsible for all damages to property of the County or others, caused by or resulting from the negligence of the Contractor, its employees, or agents during the progress of or connected with the prosecution of the work, whether within the limits of the work or elsewhere. The Contractor must restore all property injured including sidewalks, curbing, sodding, pipes, conduit, sewers or other public or private property to not less than its original condition with new work.

Section 24 - Refusal to Obey Instructions

If the Contractor refuses to obey the instructions of the Supervising Professional, the Supervising Professional shall withdraw inspection from the work, and no payments will be made for work performed thereafter nor may work be performed thereafter until the Supervising Professional shall have again authorized the work to proceed.

Section 25 - Assignment

Neither party to the Contract shall assign the Contract without the written consent of the other. The Contractor may assign any monies due to it to a third party acceptable to the County.

Section 26 - Rights of Various Interests

Whenever work being done by County forces or by other contractors is contiguous to work covered by this Contract, the respective rights of the various interests involved shall be established by the Supervising Professional, to secure the completion of the various portions of the work in general harmony.

The Contractor is responsible for coordinating all aspects of the work, including coordination of, and with, utility companies and other contractors whose work impacts this project.

Section 27 - Subcontracts

The Contractor shall not award any work to any subcontractor without prior written approval of the County. The approval will not be given until the Contractor submits to the County a written statement concerning the proposed award to the subcontractor. The statement shall contain all information the County may require.

The Contractor shall be as fully responsible to the County for the acts and omissions of its subcontractors, and of persons either directly or indirectly employed by them, as it is for the acts and omissions of persons directly employed by it.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions and all other Contract Documents applicable to the work of the subcontractors and to give the Contractor the same power to terminate any subcontract that the County may exercise over the Contractor under any provision of the Contract Documents.

Nothing contained in the contract documents shall create any contractual relation between any subcontractor and the County.

Section 28 - Supervising Professional Status

The Supervising Professional has the right to inspect any or all work. The Supervising Professional has authority to stop the work whenever stoppage may be appropriate to insure the proper execution of the Contract. The Supervising Professional has the authority to reject all work and materials which do not conform to the Contract and to decide questions which arise in the execution of the work.

The Supervising Professional shall make all measurements and determinations of quantities. Those measurements and determinations are final and conclusive between the parties.

Section 29 - Supervising Professional's Decisions

The Supervising Professional shall, within a reasonable time after his/her presentation to the Supervising Professional, make decisions in writing on all claims of the County or the Contractor and on all other matters relating to the execution and progress of the work or the interpretation of the Contract Documents.

Section 30 - Storing Materials and Supplies

Materials and supplies may be stored at the site of the work at locations agreeable to the County unless specific exception is listed elsewhere in these documents. Ample way for

foot traffic and drainage must be provided, and gutters must, at all times, be kept free from obstruction. Traffic on streets shall be interfered with as little as possible. The Contractor may not enter or occupy with agents, employees, tools, or material any private property without first obtaining written permission from its owner. A copy of the permission shall be furnished to the Supervising Professional.

Section 31 - Lands for Work

The Contractor shall provide, at its own expense and without liability to the County, any additional land and access that may be required for temporary construction facilities or for storage of materials.

Section 32 - Cleaning Up

The Contractor, at its own expense, shall as directed by the Supervising Professional remove from the County's property and from all public and private property all temporary structures, rubbish and waste materials resulting from its operations unless otherwise specifically approved, in writing, by the Supervising Professional.

Section 33 - Night, Saturday or Sunday Work

No night or Sunday work (without prior written County approval) will be permitted except in the case of an emergency and then only to the extent absolutely necessary. No Saturday work will be permitted unless the Contractor gives the Supervising Professional at least 48 hours, but no more than five (5) days, notice of the Contractor's intention to work the upcoming Saturday.

Section 34 - Sales Taxes

Under state law, the County is exempt from the assessment of State Sales Tax on its direct purchases. Contractors who acquire materials, equipment, supplies, etc., for incorporation in County projects are not likewise exempt. State law shall prevail. The Bidder shall familiarize itself with the state law and prepare its Bid accordingly. No extra payment will be allowed under this Contract for failure of the Contractor to make proper allowance in this bid for taxes it must pay.

Section 35 – Contractor’s Affidavit

The undersigned Contractor, _____
represents that on _____, 20____, it was awarded a contract by
WASHTENAW COUNTY PURCHASING DIVISION, to

Under the terms and conditions of a Contract titled _____
The Contractor represents that all work has
now been accomplished and the Contract is complete.

The Contractor warrants and certifies that all of its indebtedness arising by reason of the Contract has been fully paid or satisfactorily secured; and that all claims from subcontractors and others for labor and material used in accomplishing the project, as well as all other claims arising from the performance of the Contract, have been fully paid or satisfactorily settled. The Contractor agrees that, if any claim should hereafter arise, it shall assume responsibility for it immediately upon request to do so by Washtenaw County Facilities Management.

The Contractor, for valuable consideration received, does further waive, release and relinquish any and all claims or right of lien which the Contractor now has or may acquire upon the subject premises for labor and material used in the project owned by Washtenaw County.

This affidavit is freely and voluntarily given with full knowledge of the facts.

Contractor Name

By: _____
(Signature)

Its: _____
(Title of Office)

Dated: _____

Subscribed and sworn to before me, on this
_____ day of _____, 20____.

Notary Public
_____ County, Michigan
My Commission expires: _____

TECHNICAL SPECIFICATIONS

All work under this Contract shall be performed in accordance with the Technical Specifications.

SPECIFICATION INDEX

<u>Section</u>	<u>Title</u>
02062	Site Demolition and Removal
02206	Earthwork Soil Materials
02212	Site Earthwork
02213	Soil Erosion and Sedimentation Control
02225	Trenching
02723	Stormwater Sewerage System
02831	Construction and Protective Fences
02832	Grouted Cobble Riprap
02910	Tree and Plant Protection
02920	Fine Grading/Seeding and Site Stabilization
02939	Inlet Filters and Stone Filters
02940	Silt Fencing

SECTION 02062 – SITE DEMOLITION AND REMOVAL

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. This Section includes the demolition, removal and proper disposal, including end disposal fees, for miscellaneous items of removal noted on the plans; the termination, cutting, plugging and/or capping of all buried utilities as required; and the demolition, removal and disposal of any miscellaneous items required to complete the project.

1.02 RELATED DOCUMENTS

- A. Attention is directed to Bidding and Contracting Requirements, and to Division 1, General Requirements, which are hereby made a part of this Section.

1.03 REFERENCES

- A. Not applicable.

1.04 MEASUREMENT AND PAYMENT

- A. Payment for Site Demolition and Removal shall be included in the Lump Sum price bid for removals.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Not applicable.

PART 3 - EXECUTION

3.01 GENERAL

- A. Areas which have been excavated to below grade shall be adequately protected with barricades or fencing at all times.
- B. Removed materials not to be incorporated into the work shall become the property of this Contractor and shall be disposed of in a proper and approved manner, or as otherwise directed. Coordinate with the Construction Manager.
- C. Removal of sub-base or subgrade, not authorized by the Engineer shall be replaced and compacted by this Contractor, using materials specified by the Construction Manager. This work will be completed at this Contractor's expense.

SITE DEMOLITION AND REMOVAL

- D. The locating of disposal areas and the proper disposal of materials shall be the responsibility of this Contractor at his expense. At no time shall this Contractor stockpile excavated material overnight on or adjacent to the site without the Owner's permission.
- E. All existing utilities, including drainage through existing sewers and drains shall be maintained at all times during construction.

3.02 REMOVE UTILITY STRUCTURES

A. Risers

(i) In removing risers, any live sewers connected with them shall be rebuilt and properly reconnected through the removal area, and service shall be maintained, as directed by the Engineer, during such construction operations, unless the sewer runs are also designated for removal.

B. Disposing of Materials

(i) Materials salvaged during the construction of the project shall become the property of the Contractor unless otherwise shown on the plans or in the proposal. Materials that become the property of the Contractor shall be removed from the project before acceptance of the project. Locating disposal areas and the proper disposal including fees shall be the responsibility of the Contractor. No stockpiling of removed materials overnight or adjacent to the site will be allowed.

END OF SECTION 02062

SECTION 02206 - EARTHWORK SOIL MATERIALS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Subsoil and topsoil materials.
- B. This Section includes imported soils for site earthwork and stockpiling of site soils.
- C. Stockpiling of soils as they are used in fill of open areas.

1.02 RELATED DOCUMENTS

- A. Attention is directed to Bidding and Contracting Requirements, and to Division 1, General Requirements, which are hereby made a part of this Section.
- B. Topsoil - Section 02911
- C. Site Earthwork - Section 02212

1.03 REFERENCES

- A. AASHTO T180 - Moisture-Density Relations of Soils Using a 10-lb (4.54 kg) Rammer and an 18-inch (457 mm) Drop.
- B. ASTM D2487 - Classification of Soils for Engineering Purposes.
- C. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
- D. ASTM D3017 - Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures.

1.04 SUBMITTALS

- A. Materials Source: Submit name of imported materials suppliers. Provide materials from same source throughout the work. Change of source requires Engineer approval.

1.05 MEASUREMENT AND PAYMENT

- A. Payment for Earthwork Soil Materials shall be included in the Lump Sum bid price for earthwork for this project.

EARTHWORK SOIL MATERIALS

PART 2 - PRODUCTS

2.01 SOIL MATERIALS

- A. Satisfactory soil materials are defined as those complying with ASTM D 2487, designated by group symbols as follows: GW, GP, GM, GC, SM, SW, SC, ML, CL, and SP.

GW:	Well-graded gravels and gravel-sand mixtures, little or no fines.
GP:	Poorly-graded gravels and gravel-sand mixtures, little or no fines.
GM:	Silty gravels, gravel-sand-silt mixtures.
GC:	Clayey gravels, gravel-sand-clay mixtures.
SM:	Silty sands, sand-silt mixtures.
SW:	Well-graded sands and gravelly sands, little or no fines.
SC:	Clayey sands, sand-clay mixtures.
ML:	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands.
CL:	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
SP:	Poorly-graded sands and gravelly sands, little or no fines.

Unsatisfactory soil materials are defined as those complying with ASTM D 2487, designated by group symbols as follows: MH, CH, OL, OH, and PT.

MH:	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts.
CH:	Inorganic clays of high plasticity, fat clays.
OL:	Organic silts and organic silty clays of low plasticity.
OH:	Organic clays of medium to high plasticity.
PT:	Peat, muck and other highly organic soils.

2.02 SOURCE QUALITY CONTROL

- A. Tests and analysis of supplied soil material will be performed in intervals of 1000 cubic yards of supplied material. Testing to be performed by an Owner-employed testing agency.
- B. If it is determined that materials do not meet specified requirements, change material and retest at no cost to Owner.

EARTHWORK SOIL MATERIALS

PART 3 - EXECUTION

3.01 STOCKPILING

- A. Temporary stockpiling of topsoil materials will be allowed. Location to be coordinated with Owners.
- B. Dispose of all excess soil material off-site and dispose of in a manner meeting all local, State and Federal laws.
- C. Direct surface water away from any temporarily stockpiled site fill materials. If stockpiled for more than 24 hours, protect from wind and water erosion.
- D. Topsoil shall be striped for the Scio Basin area, stockpiled and re-spread after grading. Sub-grade soil shall be prepared as specified in the Site Stabilization specification prior to re-spreading the topsoil.
- E. The bio-swale striping shall be removed from the site.

3.02 STOCKPILE CLEANUP

- A. All excess materials are to be removed from the site.

END OF SECTION 02206

SECTION 02212 - SITE EARTHWORK

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. This Section includes:

(i) Excavation of topsoil and stockpiling or removal from the site.

(ii) Cutting, grading, filling, embankment construction, removal of excess material from the site and contouring of the site to applicable road, parking lot, landscape, grass surface or structure subgrade.

(iii) Furnishing of structural fill from off-site sources as required.

(iv) Clear grading area of all vegetation to four (4) inch height.

1.02 RELATED DOCUMENTS

A. Attention is directed to Bidding and Contracting Requirements, and to Division 1, General Requirements, which are hereby made a part of this Section.

1.03 REFERENCES

A. AASHTO T180 - Moisture Density Relations of Soils Using a 10 lbs (4.54 kg) rammer and an 18-inch (457mm) drop.

B. MDOT refers to MDOT 1990 standard Specifications for Construction - Division 2 "Earthwork".

C. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (shallow depth).

D. ASTM D3017 - Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures.

1.04 SUBMITTALS

A. Submit supplied material testing reports as directed by Construction Manager for all supplied materials.

1.05 MEASUREMENT AND PAYMENT

A. Payment for Site Earthwork shall be included in the Lump sum price bid for this item.

SITE EARTHWORK

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Structural Fill: As specified in Section 02206.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify existing site conditions are consistent with grading plan cut and fill indications.
- B. Verify that survey benchmark and intended elevations for the work are as indicated. Any discrepancies are to be brought to the Engineer's attention prior to the commencement of grading activities.

3.02 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Stake and flag locations of known utilities.
- C. Locate, identify, and protect utilities that remain from damage.
- D. Protect above and below grade utilities that remain.
- E. Protect benchmarks, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

3.03 EXCAVATION

- A. Cut and grade as follows:
 - (i) 6 inches below finished grade at seeded areas.
 - (ii) 12 inches below finished grade at shrub/ground cover areas.
- B. Compact resulting subgrades to 95 percent maximum density, as applicable. All excavation shall be performed as noted and per MDOT "Earth Excavation", Specification 2.08.09.
- C. Remove excess or unusable excavated material from the site and dispose of in a manner meeting local, State and Federal laws. Bio-swale striping to be removed from the site.
- D. Remove all excess topsoil and organic matter from the site and dispose of in a manner meeting all local, State and Federal laws.
- E. Excavation for Planting Areas:

SITE EARTHWORK

(i) Establish elevations of rough grade from the civil engineers grading plan using surveyed grade stakes. Allow for the depth of soil mix to be placed:

At Lawn Areas: Provide rough grade 6 inches below finished grade indicated;

At Shrub/Groundcover Areas: Provide rough grade 12 inches below finished grade indicated. Conform to cross-sections elevations and dimensions shown within a tolerance of ± 0.10 ft.

(ii) Rough grade is to approximate the direction and degree of slope indicated for finished grade shown on the civil engineers grading plan. Ensure positive drainage at all areas of rough grade. Take down high spots, fill in low spots until a consistent, smooth rough grade surface is achieved and a constant depth of soil mix can be placed and comply with the finish civil engineers grading plan.

(iii) Where blending new rough grades with existing finish grade at an embankment, provide rounded, grade transition. Avoid sharp-edged grade breaks unless indicated on the drawings.

(iv) Remove gravel, sand, debris, and deleterious materials (including weeds and roots) from areas to receive planting soil mixes and dispose of in a legal manner off-site.

3.04 FILLING

- A. Fill areas to plan contours and elevations with unfrozen materials to within 0.10 of a foot of finished subgrade.
- B. In areas to be topsoiled, fill shall be compacted to 90 percent maximum density. Maximum density determined by AASHTO T-180.
- C. Maintain allowable range of moisture content of fill materials to attain required compaction density. Contractor shall manipulate soil including disking as required to maintain required moisture range for compaction.

3.05 SUBGRADE TOLERANCES

- A. Finished grades are shown in the plan with solid contour lines and/or spot elevations. The subgrade elevations shall be as noted on the plan cross-sections and shall be constructed to plus or minus 0.10 foot.

3.06 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed by Owner-employed testing agency.
- B. Compaction testing will be performed in accordance with ASTM D2922.

SITE EARTHWORK

- C. If tests indicate work does not meet specified requirements, remove work, replace at Contractor's expense.
- D. All excess soil material to be disposed of off site in a manner which meets all local, state and federal laws and regulations.

END OF SECTION 02212

SECTION 02213 - SOIL EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. This Section includes furnishing all materials and placing all temporary and permanent erosion control measures as detailed on the Plans, typical details and specifications.

1.02 RELATED DOCUMENTS

- A. Attention is directed to Bidding and Contracting Requirements, and to Division 1, General Requirements, which are hereby made a part of this Section.

1.03 REFERENCES

- A. MDOT refers to the Michigan Department of Transportation 1990 Standard Specifications.

1.04 QUALITY ASSURANCE

- A. Perform work in accordance with MDOT Standard Specifications Section 2.13, "Soil Erosion and Sedimentation Control".

1.05 MEASUREMENT AND PAYMENT

- A. Payment for placing, maintaining soil erosion control measures, and for removing temporary soil erosion control measures shall be per the unit prices bid for the project.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All materials to be provided in accordance with MDOT Specifications.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine site and notify the Owner's representative of any issues that will not allow placement of temporary soil erosion control measures as directed herein.

SOIL EROSION AND SEDIMENTATION CONTROL

3.02 PLACEMENT

- A. Place all temporary soil erosion control measures. Placement, maintenance and ultimate removal of all temporary measures should be per MDOT Standard Specification 2.13.
- B. All permanent measures shall be placed as soon as practical based on construction scheduling for the project.
- C. All temporary measures shall be maintained until the Owner's representative determines that the site is stable enough to allow removal.
- D. The Contractor shall cooperate and coordinate with the site stormwater inspector in regard to maintenance of erosion control measures.

END OF SECTION 02213

SECTION 02225 - TRENCHING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Excavating trenches for utilities from outside building to connection to existing municipal utilities or to outlet or end points.
- B. Bracing, sheeting and supporting the sides of the trench.
- C. Pumping and drainage of groundwater (dewatering). If water generated from dewatering is free of contamination and sediment, then it may be discharged to a storm sewer drain, provided drains are protected from sediment with silt sacks and fabric.
- D. Compacting fill from top of utility bedding to subgrade elevations.
- E. Backfilling and compaction.
- F. Remove excess material from site and/or utilize excess suitable trench material in site earthwork operations as directed by the Construction Manager. Any materials stockpiled for more than 24 hours shall be protected from wind and water erosion.

1.02 RELATED DOCUMENTS

- A. Attention is directed to Bidding and Contracting Requirements, and to Division 1, General Requirements, which are hereby made a part of this Section.

1.03 QUALITY ASSURANCE

- A. AASHTO T180 - Moisture-Density Relations of Soils Using a 10-lb (4.54 kg) Rammer and an 18-inch (457 mm) Drop.
- B. ANSI/ASTM C136 - Method for Sieve Analysis of Fine and Coarse Aggregates.
- C. ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
- D. ASTM D3017 - Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures.
- E. Michigan Department of Transportation (MDOT) - 1990 Standard Specifications for Construction.

TRENCHING

1.04 DEFINITIONS

- A. Utility: Any buried water main pipe, sanitary sewer pipe, storm sewer pipe, culvert, conduit, or cable and their appurtenances.
- B. Backfill: That material placed into trench from the top of the standard pipe bedding to the ground surface or top of subgrade if under a paved surface.

1.05 FIELD MEASUREMENTS

- A. Verify that survey benchmark and intended elevations for the work are as shown on drawings.

1.06 COORDINATION

- A. Verify that work associated with lower elevation utilities is complete before placing higher elevation utilities.

1.07 MEASUREMENT AND PAYMENT

- A. Payment for Trenching shall be included in the Lump sum price bid for this project.

PART 2 - PRODUCTS

2.01 FILL MATERIALS

- A. As specified in sections governing utility installation or as noted on the plans.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. Protect plant life, lawns, and other features remaining as a portion of final landscaping.
- C. Protect benchmarks, existing structures, fences, sidewalks, paving, and curbs from excavation equipment and vehicular traffic.
- D. In crossing over or under any main or lateral sewer, sewer connection, catch basin, water main, service connection, gas main, gas connection, conduit, or any underground improvement, the Contractor shall use all possible care in protecting the same from injury, damage or the free unobstructed continuous use of the same as far as possible, and the Contract work shall be performed in such a manner as will affect the least damage or

TRENCHING

interference with such improvements or the free and unobstructed use of the same.

- E. Where, through the Contractor's construction procedure or because of poor existing conditions, it is impossible to maintain alignment and grade properly, the Contractor shall, at his own expense, excavate below grade and refill the trench to the proper grade with a compacted 1-1/2" maximum size aggregate, such aggregate to consist of angular shaped, crushed stone or blast furnace slag containing sufficient smaller size aggregate to provide "keying" of the material together in order to insure that the pipe, when laid, will maintain correct alignment and grade.

3.02 EXCAVATION

- A. Excavate subsoil required for all proposed utility lines.
- B. Trenches shall be of sufficient widths and depths to provide adequate room for construction and installation of the work to lines, grades, and dimensions called for on the plans, except the width of a trench from the invert to a height twelve inches (12") above the top of the pipe barrel, shall not be greater than one foot plus the outside diameter of the pipe barrel for pipes 12" to 36" in diameter and 2 foot plus the outside diameter for pipes 42" in diameter and larger, except for 4" to 12" inclusive pipes the width of the trench may be 30". If the maximum trench width, as specified above, is exceeded, unless otherwise shown on the drawings, the Contractor shall install, at his own expense, such concrete cradling or other bedding, as is approved by the Engineer, to support the added load of the backfill.
- C. Where the condition of the ground requires, the sides of the trench shall be securely held by bracing and sheeting which may be removed in units when the level of the backfill has reached a point where it is safe to pull the sheeting.
- D. Sheeting, bracing and shoring shall not be left in place after the completion of the work. Where required to protect the work, adjacent structures or property, sheeting, bracing and shoring shall be left in place, but shall be cut off or left not less than two feet (2') below the established surface grade. Sheeting, bracing, or shoring so required to be left in place shall be considered as incidental to the work.
- E. Do not interfere with 45° bearing splay of foundations.
- F. Adequately protect any newly-laid concrete from injury resulting from ground water or sewage or from the handling of water or sewage. No drainage ditches shall be placed within the area to be occupied by any structure, except as permitted by the Engineer.
- G. Hand trim excavation as necessary. Remove loose matter.
- H. Remove lumped subsoil, boulders, and rocks.

TRENCHING

- I. Stockpile excavated material and remove excess or unsuitable material not being used from site, unless otherwise directed by the Engineer. Excavated material may be used in backfilling around pipes and other structures provided it is suited for such a purpose.
- J. Any soil stockpiled for more than 24 hours shall be protected from wind and water erosion.

3.03 BACKFILLING

- A. Prior to backfilling, all underground utilities encountered shall be adequately protected by the use of supporting concrete or timber bents (to be left in place) of such a size and construction as to effectively prevent failure of the utility in settlement.
- B. Backfill trenches to contours and elevations with unfrozen materials according to one of the following specified manners as determined by the location of the trench or the edge of trench nearest the existing pavement, roadway, sidewalk, driveway or parking areas.

Near or Under Proposed or Existing Pavement (Under or within a 1:1 influence line of the bottom of any pavement).

Granular Fill: Place and compact MDOT Class II or 2NS granular materials in continuous layers not exceeding 6 inches compacted depth with each layer compacted to not less than 95% of maximum unit weight at optimum moisture content per AASHTO-T180.

Open Space Areas (Outside a 1:1 influence of the bottom of any pavement)

Native Soil Fill: Place and compact material in continuous layers not exceeding 8 inches compacted depth with each layer compacted to 85% of maximum unit weight. This material is to be clean non-organic with unit weight exceeding 125 lbs/ft³.

Utility Structure Backfill. Backfill (granular fill as specified in paragraph (i) above) shall not be placed against any portion of a structure until the structure has passed inspection and has been approved by the Engineer for backfilling. All trenches should be backfilled as soon as inspection is completed in order to avoid unnecessary risk or damage to the structure and also to reduce the risk of accidents involving the public.

- C. Frozen backfill materials are not permitted under any circumstance whatsoever.
- D. Wherever compaction is required, it shall be accomplished by suitable mechanical compaction equipment. If a bulldozer or other machine is used to place the backfill material, no material shall be pushed or dropped into the trench, but shall be placed

TRENCHING

on the sloping ends of the completed backfill, and allowed to roll in place to the bottom of the trench.

- E. Contractor shall regrade the trench backfill as necessary during the life of the Contract.
- F. Remove surplus fill materials from site.

3.04 TOLERANCES

- A. Top Surface of Backfilling: See plan typical cross-section. Fill to appropriate subgrade elevation.

3.05 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed by Owner-employed testing agency.
- B. Compaction testing will be performed in accordance with ASTM D2922 and AASHTO T-180.
- C. If tests indicate work does not meet specified requirements, remove work, replace and re-compact at Contractor's expense.

3.06 PROTECTION OF FINISHED WORK

- A. Protect finished work from construction loading.
- B. Reshape and re-compact fills subjected to vehicular traffic during construction.

END OF SECTION 02225

SECTION 02723 - STORMWATER SEWERAGE SYSTEM

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. This Section includes installation of stormwater sewer piping, risers, fittings and accessories; connecting storm sewer drainage systems to outfalls; and risers.

1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1, Specification Sections, apply to this Section.

1.03 REFERENCES

- A. AASHTO T180 - Moisture-Density Relations of Soils Using a 10-lb (4.54 kg) Rammer and an 18-inch (457 mm) Drop.
- B. ANSI/ASTM C76 - Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
- C. ANSI/ASTM C443 - Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.
- D. ANSI/ASTM D2321 - Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe.
- E. ANSI/ASTM D2729 - PolyVinyl Chloride (PVC) Sewer Pipe and Fittings.
- F. ANSI/ASTM D3034 - Type PSM PolyVinyl Chloride (PVC) Sewer Pipe and Fittings.
- G. Michigan Department of Transportation (MDOT) 1990 Standard Specifications for Construction.

1.04 DEFINITIONS

- A. Bedding: Fill placed under, beside, and 12 inches over top of pipe, prior to subsequent backfill operations.

1.05 SUBMITTALS

- A. Manufacturer's Installation Instructions: Indicate special procedures required to install products specified.
- B. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

STORMWATER SEWERAGE SYSTEM

1.06 PROJECT RECORD DOCUMENTS

- A. Contractor to identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.07 REGULATORY REQUIREMENTS

- B. Conform to MDOT Standard Specifications Section 5.13, and as revised in this Section.

1.08 MEASUREMENT AND PAYMENT

- A. Payment for site stormwater sewerage system shall be as follows:

12-inch ADS N-12	per LF
8-inch ADS N-12	per LF
Riser	EA

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Pipe
 - (i) Polyethylene Pipe: ADS N-12 - Joints per U of M Design Guidelines.
- B. Concrete and Mortar
 - (i) Cement Mortar , Class A and X: Concrete shall meet the City of Ann Arbor Public Services Department Standard Specifications for Public Street Work.
 - (ii) Concrete shall meet MDOT 1990 Standard Specifications for 35S concrete for site work.
- C. Risers:
 - (i) Lid and Frame: As specified on drawings.
- D. Bedding Materials
 - (i) Bedding: MDOT Class II or 2NS granular material.

PART 3 - EXECUTION

3.01 GENERAL

- A. All site stormwater sewerage systems installed shall conform to the Washtenaw County Drain Commissioner's standards.

STORMWATER SEWERAGE SYSTEM

3.02 EXAMINATION

- A. Contractor to verify that trench cut is ready to receive work; and excavations, dimensions, and elevations are as indicated on drawings.
- B. All materials will be inspected before placing in the trench, and if defective, marked "REJECTED", and removed from the site by the Contractor.

3.03 PREPARATION

- A. Trenching to be performed per Section 02225.
- B. Hand trim excavations to required elevations. Correct over excavation as directed by Engineer.
- C. Remove large stones or other hard matter which could damage piping or impede consistent backfilling or compaction.
- D. The pipe shall be distributed at the site by the Contractor as required and care shall be used to prevent damage to the pipe. Equipment for safely handling the pipe and other materials shall be provided by the Contractor. Pipe must be protected from falling, either from truck to ground or into the trench; and when distributed along the line or stored near a road, pipe must be kept clear of danger of damage to passing vehicles.

3.04 TRENCHING AND BEDDING

- A. Excavate pipe trench in accordance with Section 02225. Hand trim excavation for accurate placement of pipe to elevations indicated.
- B. Place bedding material at trench bottom, level materials in continuous layer not exceeding four (4) inches compacted depth.
- C. Maintain optimum moisture content of bedding material to attain required compaction density.

3.05 INSTALLATION - PIPE

- A. Contractor shall maintain sewer service at all times.
- B. All pipe shall be laid to the line and grade called for on the plans. The finished work shall be straight and shall be sighted through between manholes. Maximum variation from plan slope shall be 1/8-inch in 10 feet. (0.10%).
- C. Construction shall begin at the outlet end of whichever run of pipe, in whichever project(s), deemed most appropriate for beginning of construction by the Engineer, and shall proceed upgrade with spigot ends pointing in the direction of flow. The pipe shall be laid on a sand or stone cushion per standard details shown on plans. The pipes shall be centered in the bells

STORMWATER SEWERAGE SYSTEM

or grooves and pushed tight together to form a smooth and continuous invert. After laying of pipe, care shall be taken so as not to disturb its line and grade. Any pipe found off grade or out of line shall be relaid properly by the Contractor.

- D. The remainder of the pipe bedding, free from large stones and lumps, shall be placed with care in 6-inch layers to an elevation providing 12 inches of cover over the pipe. Each layer shall be thoroughly compacted by power tamping.
- E. If through carelessness, or for other reasons, the subgrade may have been disturbed and refilling is necessary, the Contractor shall install, at his own expense, concrete cradling or other bedding as approved by the Engineer.
- F. Completion of the pipe bedding and backfilling the remainder of the trench shall follow closely behind the laying of the pipe. In no case shall more than 100 lineal feet of trench remain open during construction. All sewer built during any work period shall be completely backfilled before work is completed for such period and before the crew leaves the site.
- G. Where pipe is laid in wet trenches or trenches with running sand, the Contractor shall provide and use mechanical means for pulling the pipe home in making up the joint and for holding the pipe joint tight until completion of the line. Mechanical means shall consist of a cable placed inside of the pipe with a suitable winch, jack, or come-along for pulling the pipe home and holding the pipe in position.
- H. Mechanical means shall be used for pulling home all rubber gasketed pipe regardless of trench condition where manual means, in the opinion of the Engineer, will not result in pushing and holding the pipe home. However, mechanical means shall be provided for pulling home and holding all rubber gasketed pipe 24-inch in diameter or less, regardless of the trench condition.

3.06 CONNECTIONS TO EXISTING STRUCTURES

- A. Where the plans call for connections to existing manholes or sewer laterals, the Contractor shall exercise due care to insure that the structure as a whole is not damaged. The Contractor shall drill holes at 4" center to center around periphery of opening to create a plane of weakness before breaking section out. New channels in the bottom of the manhole shall be constructed using Class A concrete. Upon completion of the connection, the Contractor shall repair any damage done and shall restore the structure to its original condition, including all patching and cement plastering necessary.

3.07 INSTALLATION - RISERS

- A. Risers shall be constructed at the locations as indicated by the plans of the type and material as given in these Specifications and as shown on the plans.

STORMWATER SEWERAGE SYSTEM

- B. Form bottom of excavation clean and smooth to correct elevation.
- C. Form and place cast-in-place or pre-cast concrete base pad, with provision for storm sewer pipe end sections.
- D. Level top surface of base pad to receive riser structure.
- E. Establish elevations and pipe inverts for inlets and outlets as indicated.
- F. Mount lid and frame level.

3.08 FIELD QUALITY CONTROL

- A. Field compaction and testing will be performed by an Owner-employed testing firm and performed per MDOT standard requirements. Reports to be supplied to Owner.
- B. Horizontal and vertical alignment to be reviewed by Engineer prior to backfilling.
- C. Request inspection 48 hours prior to beginning construction.
- D. Compaction testing will be performed in accordance with AASHTO-T180 method.

3.09 PROTECTION

- A. Protect finished Work.
- B. Protect pipe and aggregate cover from damage or displacement while backfilling operation is in progress.

END OF SECTION 02723

SECTION 02831 - CONSTRUCTION AND PROTECTIVE FENCES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The work covered by this Section consists of furnishing and placing fence framework, fabric, posts, and accessories; and furnishing and placing manual gates and related hardware.

1.02 RELATED DOCUMENTS

- A. Attention is directed to Division 00, Bidding and Contract Requirements, and to Division 1, General Requirements, which are hereby made a part of this Section.

1.03 MEASUREMENT AND PAYMENT

- A. Includes all labor, material and equipment costs associated with the installation, and relocation during the phasing of the project; and the removal of the snow fences, posts and gates, as specified herein. This work shall be paid for on a per lineal foot basis.

1.04 REFERENCES

- A. All fences to be Orange Snow Fence Type, plastic-covered wire.

1.05 SYSTEM DESCRIPTION

- A. Fence Height: 4 feet
- B. Line Post Spacing: At intervals not exceeding 10 feet.

1.06 SUBMITTALS

- A. Shop Drawings: Indicate plan layout, spacing of components, post foundation dimensions, hardware anchorage, and schedule of components.
- B. Product Data: Provide data on fabric, posts, accessories, gates, fittings and hardware.
- C. Samples: Submit samples of fence fabric.
- D. Manufacturer's Installation Instructions: Indicate installation requirements if different than described herein.

CONSTRUCTION AND PROTECTIVE FENCES

1.07 QUALITY ASSURANCE

- A. Perform Work in accordance with ANSI/ASTM F567.

PART 2 - PRODUCTS

2.01 MATERIALS AND COMPONENTS

- A. Orange type snow fence, plastic-coated wire.
- B. Gates and temporary supports to be either pre-fabricated aluminum or constructed out of wood.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Set posts plumb and wire the fence to posts.
- B. Upon the completion of the project, Contractor shall remove all fence and gates.

END OF SECTION

SECTION 02832 - GROUTED COBBLE RIPRAP

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. The work covered by this Section includes placing cobble riprap at locations as specified on the Plans. All work shall be performed in accordance with the 2003 MDOT Standard Specification Section 813.

1.02 RELATED DOCUMENTS

- A. Attention is directed to Division 00, Bidding and Contract Requirements, and to Division 1, General Requirements, which are hereby made a part of this Section.

1.03 MEASUREMENT AND PAYMENT

- A. Payment shall be on a per square foot basis.

PART 2 - PRODUCTS

2.01 MATERIALS AND COMPONENTS

- A. Riprap material shall be natural stone 4"-8" in diameter. Stone shall be hard, durable and clean. All cobble shall be grouted and placed with geotextile liner.
- B. Gates and temporary supports to be either pre-fabricated aluminum or constructed out of wood.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. As specified in Section 813 of the MDOT 2003 Standard Specifications Section 813.03.E2.

END OF SECTION

SECTION 02910 - TREE AND PLANT PROTECTION

PART ONE - GENERAL

1.1 WORK INCLUDED

- A. Provide all equipment and materials, and do all work necessary to protect existing trees and plants from damage as a result of the Contractor's operations.

1.2 RELATED WORK

- A. Earthwork Soil Materials - Section 02206.
- B. Site Earthwork - Section 02212.
- C. Trenching - Section 02225.

1.3 REFERENCED STANDARDS

- A. International Society of Arboriculture (ISA):
Guide for Establishing Values of Trees and Other Plants

1.4 SUBMITTALS

- A. Proposed methods, materials to be employed and schedule for effecting tree and plant protection shall be submitted for approval.

1.5 MEASUREMENT AND PAYMENT

- A. Payment shall be per lineal foot of tree fence installed.

1.6 SPECIAL SITE LIMITATIONS

- A. The Contractor's attention is called to the fact that existing trees on the site are an extremely important part of the Project and are to remain. Therefore, all construction operations must be performed in such a manner which will preserve existing trees.
- B. The Contractor shall notify all construction personnel working at the Project site, including all subcontractors, of the importance of tree protection and provisions of this specification.
- C. Areas identified on the Drawings as "Tree Fence" shall not be entered or used for any purpose during construction except as authorized by the Landscape Architect.

PART TWO - PRODUCTS

2.1 TREE PROTECTION FENCING

TREE AND PLANT PROTECTION

- A. Tree protection fencing shall be:
 - 1. Wooden snow fence or plastic fencing with steel posts.
- B. Stakes for fencing shall be 7 ft. steel posts, driven a minimum of 3 ft. into the ground. Posts shall be spaced 6 ft. o.c. maximum.
- C. Fencing other than that specified above will be subject to the approval of the Landscape Architect.

PART THREE - EXECUTION

3.1 INSTALLATION OF FENCING

- A. Prior to start of demolition work and clearing and grubbing operations, tree protection fencing shall be installed in accordance with the following:
 - 1. At tree protection areas indicated on drawings and as staked in the field.

3.2 REMOVAL OF PROTECTION

- A. Except as otherwise indicated or requested by Landscape Architect, temporary protection devices and facilities installed during course of the work shall be removed only after all work which may injure or damage trees and plants is completed.

END OF SECTION 02910

SECTION 02920 - FINE GRADING/SEEDING AND SITE STABILIZATION

PART 1 - GENERAL

1.01 SUMMARY

- A. Provide all fine grading and seeding where shown on drawings, as specified herein and as necessary for a complete and proper installation.
- B. Work shall include, but not be limited to:
 - (i) Subgrade Preparation
 - (ii) Placing Topsoil and Fine Grading
 - (iii) Placing Compost and Fine Grading
 - (iv) Stabilization Seeding and Establishment

1.02 RELATED DOCUMENTS

- A. Attention is directed to Bidding and Contracting Requirements, and to Division 1, General Requirements, which are hereby made a part of this Section.
- B. Related sections:
 - (i) Earthwork Soil Materials
 - (ii) Site Earthwork
 - (iii) Soil Erosion and Sedimentation Control

1.03 REFERENCES

- A. AOSA - Association of Official Seed Analysis: Rules for Testing Seeds, Journal of Seed Technology, 1991 Edition.
- B. TAPPI - Technical Association of the Pulp and Paper Industry.
- C. AOAC - Official Methods of Analysis, Association of Official Analytical chemists.
- D. Materials and Work covered under this Section shall be in accordance with MDOT (1996 edition), Washtenaw County, and Scio Township standards and specifications unless otherwise indicated. If a conflict exists between specifications, the more rigorous shall govern.

FINE GRADING / SEEDING AND SITE STABILIZATION

1.04 QUALITY ASSURANCES

- A. Soil Amendments: Copies of invoices shall be provided to the Consultant. Samples must be provided if requested by the Consultant.
- B. Seed: Provide the Consultant with manufacturer's certification of compliance to the Specifications prior to seeding.
- C. The Contractor shall notify the Consultant of seed sources thirty (30) days after the Contract award.
- D. Contractor shall confer with Consultant prior to ordering seed and shall submit an invoice following purchase and delivery of the seed.
- E. Grading and stabilization seeding shall be reviewed by the Consultant prior to completion.

1.05 SUBMITTALS

- A. The Contractor shall provide the Consultant with a construction sequencing plan that proposes a method to establish stabilization seed prior to the activation of the on-site storm sewer or provides some method of diversion of that stormwater until such time as the stabilization seed can establish itself.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Soil amendments shall be kept dry.
- B. Seed shall be delivered in original sealed containers, labeled in accordance with State Regulations and the US Department of Agriculture Rules and Regulations under the Federal Seed Act. Seed shall be stored in such a manner that it will be protected from damage by heat, moisture, rodents, or other causes.

PART 2 - PRODUCTS

2.01 STABILIZATION / SEED MATRIX (for newly graded areas, staging access areas, and bio-swale areas)

- A. Stabilization Seed-Dry, shall be:

Lolium multiflorum	Annual Rye
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- Stabilization Seed-Wet, shall be:

Lolium multiflorum	Annual Rye
Avena sativa	Seed Oats
Agrostis alba palustris	Redtop

- B. Apply Stabilization Seed at a species rate of pounds per acre as indicated on the drawing.

FINE GRADING / SEEDING AND SITE STABILIZATION

- C. Seed sources for the Stabilization/Seed is available through rhino Seed and Landscape Supply, Brighton, MI (800) 482-3130, or approved substitution.

2.02 MULCH FOR STABILIZATION SEED MATRIX

- A. Material shall be clean chopped straw from oats to protect seeded areas from invasive species frequently found in common straw. No other type of mulch is acceptable. It shall be natural and suited for horticultural use and not contain lumps, roots or other foreign matter over one (1) inch in diameter. It shall be free of seeds and noxious weeds. Mulch shall not contain more than 35 percent (35%) moisture by weight.

2.03 WATER

- A. Source: If not available on-site, shall be provided by the Contractor.
- B. Quality: Water supplied by the Contractor shall be free of substances harmful to plant growth.

2.04 TOPSOIL

- A. Existing topsoil that has been stripped and stockpiled shall be re-spread on the finished subgrade. It shall be free of any admixture of subsoil, stones larger than one (1) inch, clods of hard earth, plants or roots, sticks, concrete, asphalt, or other extraneous material. It shall contain no toxic materials.

2.05 COMPOST

- A. Compost shall be used only from City of Ann Arbor, available from City of Ann Arbor Materials Recovery Facility (734) 971-8600.

PART 3 - EXECUTION

3.01 SUBGRADE PREPARATION

- A. In Newly graded areas: Upon completion of rough grading, the contractor shall rip, disc or deep chisel plow subgrade materials, to a minimum depth of eighteen (18) inches. All efforts shall be taken to minimize compaction and the use of heavy equipment on fine graded soil. Remove stones over 1 to 1-1/2 inches in any dimension and sticks, roots, rubbish and other extraneous matter. The finish surface shall be roughed up to provide non-uniform surface with a rough finish grade, plus or minus three (3) inches of the specified grade. Soils shall not be compacted. (Scio Basin and Bio-Swale)
- B. IN STAGING ACCESS AREAS: Upon completion of rough grading, the Contractor shall decompact subgrade to a minimum depth of six inches (6").

3.02 PLACING TOPSOIL AND FINE GRADING (for newly graded areas, Scio Basin)

- A. Following soil ripping, the existing stripped and stockpiled topsoil from the site shall be re-spread at an even depth so that the finish surface is a fine seedbed, varying not more than one (1) inch in ten (10) feet. Though soils have been "roughed up" the Contractor shall maintain adequate slope across these areas to prevent ponding of stormwater.
- B. Final grades will be reviewed by the Consultant prior to demobilization/completion.
- C. Repair as directed by the Consultant so that finish grades are met.

3.03 PLACING COMPOST AND FINE GRADING (for bio-swale areas)

- A. Following soil ripping, compost shall be placed to a minimum depth of four (4) inches and incorporated into the top eight (8) inches of the ripped or disced subgrade. Though soils have been "roughed up", the Contractor shall maintain adequate slope across these areas to prevent ponding of stormwater.
- B. Final grades will be reviewed by the Consultant prior to demobilization/completion.
- C. Repair as directed by the Consultant so that finished grades are met.

3.04 REPAIRING FINISHED GRADES (for staging and access areas)

- A. Following completion of rough grading, Contractor shall repair grades so that the finish surface is a fine seedbed, varying not more than one (1) inch in ten (10) feet.
- B. Final grades will be reviewed by the Consultant prior to demobilization/completion.
- C. Repair as directed by the Consultant so that finished grades are met.

3.05 SEEDING / STABILIZATION SEED MATRIX

- A. Application:
 - (i) Sow the seed using a mechanical seeder such as a lawn maker or brillion. A cultipacker or approved similar equipment may be used to cover the seed and form the seedbed in one operation.
 - (ii) Apply Stabilization Seed at a species rate of pounds per acres as indicated on the drawing.
 - (iii) Lines of seed shall be perpendicular to slopes to reduce rapid surface water run-off.

3.06 MULCHING

- A. For All Areas: Seeded areas are to be covered with Mulch for Stabilization Seed Matrix so as not to cover more than 70 percent (or 1.5 tons per acre) of the soil surface and lightly disc into soil, or as otherwise directed by the Consultant. Mulch on the Scio basin and bio-swale shall be covered with netting to prevent its loss and meeting MDOT 1996 Specification 8.16.03H.

3.07 ESTABLISHMENT AND ACCEPTANCE / STABILIZATION SEED MATRIX

- A. Establishment of a dense stand of annual cover, free from mounds and depressions, is the responsibility of the Contractor. any part of the area that fails to show a uniform germination shall be re-seeded, and such re-seeding shall continue until a dense cover is established.
- B. Erosion shall be repaired by the Contractor until herbiciding by Landscape Contractor commences.
- C. Bare spots over three percent (3%) of the area or greater than one square foot (1 sq ft) in size will not be allowed, unless otherwise approved by the Consultant.
- D. Protection from traffic and erosion in newly seeded areas is the responsibility of the Contractor. Safety fences and/or silt fence with appropriate signage may be used at the Contractor's expense until the stabilization seed planting is fully established.
- E. Acceptance will be when all the above specifications have been met.

3.08 FIELD QUALITY CONTROL

- A. If sequencing of construction and seasonal limitations do not allow for grading of retention basin and subsequent establishment of Stabilization Seed Matrix to take place prior to the installation of the storm sewer, the Contract shall provide temporary means of diversion of stormwater during establishment of all Stabilization Control Seed.

3.09 MEASUREMENT AND PAYMENT

- A. Scio Basin Stabilization LS
Includes subsoil preparation, fine grading, re-spreading topsoil, fine grading, seeding, mulching and netting
- B. Staging Area Stabilization LS
Includes surface preparation, seeding, and mulching
- C. Bio-Swale Stabilization LS
Includes subsoil preparation, placing compost, fine grading, seeding, mulching and netting.

END OF SECTION 02920

SECTION 02939 - INLET FILTERS AND STONE FILTERS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. This Section includes installation, maintenance and removal at the end of the construction of gravel filters.

1.02 RELATED DOCUMENTS

- A. Attention is directed to Bidding and Contracting Requirements, and to Division 1, General Requirements, which are hereby made a part of this Section.

1.03 REFERENCES

- A. Michigan Department of Transportation 1990 Standard Specifications.
- B. OSEH Specifications

1.04 MEASUREMENT AND PAYMENT

- A. Payment for Stone Filters and Inlet Filters shall be included in the unit bid price for this project.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Stone for stone filters shall be MDOT 6A Stone- Unwashed.
- B. Fabric for inlet filters shall be burlap or geotextile fabric meeting MDOT Specification 8.09.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Gravel filters and inlet filters are to be placed where indicated on the drawings. Gravel filters shall have a minimum of two (2) cubic yards of stone, unless otherwise noted on the drawings.

END OF SECTION 02939

SECTION 02940 - SILT FENCING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. This Section includes installing silt fences and posts.

1.02 RELATED DOCUMENTS

- A. Attention is directed to Bidding and Contracting Requirements, and to Division 1, General Requirements, which are hereby made a part of this Section.

1.03 QUALITY ASSURANCE

- A. ASTM Specification D4632, 4491, 4751 and 4355.

1.04 MEASUREMENT AND PAYMENT

- A. Payment for silt fencing shall be included in the unit price bid for this item.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Posts: Posts shall be a minimum of 4 feet long and constructed of either pressure-treated wood or steel posts. If wood posts are used, the size may be 1-1/2" x 1-1/2" with a minus tolerance of 1/8" providing the cross sectional area is a minimum of 2.25 square inches. Steel posts shall be round, U.T., or C-shaped with a minimum weight of 1.3 lbs/foot and have projections for fastening the wire to the fence.
- B. Geotextile Fabric: Fabric shall be composed of strong rot-proof synthetic fibers formed into a fabric of either the woven or non-woven type. The fabric shall contain stabilizer and/or inhibitors to make the filaments resistant to deterioration from exposure to sunlight or heat.

The edges of the fabric shall be finished to prevent the outer yarn from pulling away from the fabric. The fabric shall be free of defects or flaws which significantly affect its physical and/or filtering properties. The fabric shall have a minimum width of 24 inches. Sheets of fabric may be sewn or bonded together. No deviation from any physical requirements will be permitted due to the presence of seams.

The fabric shall be manufactured with pockets for posts, hems with cord, or with posts reattached using staples or button head nails.

SILT FENCING

During all periods of shipment and storage, the fabric shall be wrapped in a heavy-duty protected covering which will protect the cloth from sunlight, mud, dust, dirt, and debris. The fabric shall not be exposed to temperatures greater than 140° F.

The fabric shall meet the physical requirements of Table 1 below.

Table 1 Physical Requirements for Temporary Silt Fence Geotextiles		
Property	Test Method	Standard Fence Requirements
Tensile Strength, lbs.	ASTM D 4632	90
Elongation; %	ASTM D 4632	40 max.
Permittivity, gal/min/ft ²	ASTM D 4491	15
Apparent Opening Size, Max.	ASTM D 4751	20
Ultraviolet Degradation, 4%	ASTM D 4355	70

- C. Wire staples will be No. 17 gauge (minimum) and shall have a crown at least 3/4-inch wide and legs at least 1/2-inch long. Staples shall be evenly spaced with at least five (5) per post.
- D. Nails shall be 14 gauge (minimum), 1-inch long with 3/4-inch button heads. Nails shall be evenly spaced with at least four (4) per post.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. The Contractor shall install temporary silt fence according to this Specification, as shown on the Plans, or as directed by the Engineer.
- B. A 6-inch deep trench shall be constructed by either a trenching machine, motor grader, or if equipment cannot be operated on the site, by hand.
- C. Post installation shall start at the center of the low point (if applicable) with the remaining posts spaced six (6) feet apart. Post shall be installed with at least 18 inches in the ground. Where an 18-inch depth is impossible to achieve, the posts shall be adequately secured to prevent overturning of the fence due to sediment loading.
- D. Filter fabric shall be attached to posts by wire, cord, pockets, staples, or other acceptable means. The filter fabric shall be

SILT FENCING

installed such that, 6 to 8 inches of fabric is left at the bottom to be buried and a minimum overlap of 18 inches is provided at all splice joints. The fabric shall be installed in a trench, and 2 to 4 inches across the bottom of the trench in the upstream direction, respectively. The trench shall then be backfilled and compacted to prevent any flow from passing under the barrier.

- E. During installation, the fabric will be rejected if it is found to have defects, rips, holes, flaws, deterioration, or damage incurred during manufacture, transportation, or storage.
- F. Maintenance and Removal: The Contractor shall maintain the silt fence until the project is either accepted or removed at the direction of the Construction Manager. The Contractor shall remove and properly dispose of accumulated silt as directed by the Engineer. Filter fabric shall be removed and replaced whenever it has deteriorated to such extent that it reduces the effectiveness of the silt fence.
- G. Silt fence shall remain in place until the Construction Manager directs that it be removed. Silt fence which has been removed will remain the property of the Contractor and may be used at other locations provided it is in a condition acceptable to the Engineer.

END OF SECTION 02940