

REQUEST FOR PROPOSAL

6554

COUNTY FARM PARK PATHWAY ENHANCEMENTS

FOR

WASHTENAW COUNTY PARKS AND RECREATION COMMISSION
2230 Platt Rd., P.O. Box 8645 Ann Arbor, MI 48104

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
Phone: (734) 222-6760



and

Washtenaw County Parks and
Recreation Commission
Park Planning
2230 Platt Rd., P. O. Box 8645
Ann Arbor, MI 48107-8645

Phone: (734) 971-6337



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**WASHTENAW COUNTY
FINANCE DEPARTMENT**

Purchasing Division

P.O. Box 8645, 220 N. Main,
Ann Arbor, MI 48107-8645
Phone (734) 222-6760
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REQUEST FOR PROPOSAL # 6554

July 9, 2010

Washtenaw County Purchasing Division on behalf of the Washtenaw County Parks and Recreation Commission is issuing a Request for Proposal (RFP) #6554 for the **Pathway Enhancements** at County Farm Park, 2230 Platt Rd, Ann Arbor, MI 48104.

Sealed Proposals: Contractor will deliver **four copies (4)**, the **original and three (3) copies**, to the following address:

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

By 2:00 p.m. on *Thursday August 12, 2010*

The bid opening will be held in the Purchasing Department conference Room, B-19 of the Administration Building. Proposals received after the above cited time will be considered a late bid and are not acceptable unless waived by the Purchasing Manager. Bid envelopes and shipping packages should be clearly marked **"SEALED RFP # 6554"**

A **mandatory pre-bid site meeting** will be held at **10:00 am, Tuesday, August 3, 2010** at the County Farm Park Shelter Building (Adjacent to Project site work).

Project Work Includes:

Work under this Contract includes the construction and installation of natural boulder retaining walls, bituminous hot mix asphalt pathways, limestone pathways, permeable concrete pavers, concrete retaining curbs, concrete flatwork, landscaping, soil erosion control measures, removal of designated vegetation, and various related site work.

Bidders Qualifications:

Any organization contemplating bidding on this project shall have been an established business entity for at least five consecutive year period prior to submission of the bid and shall have satisfactory evidence of at least three (3) successful projects of this scope.

Electronic copies of the Bid Documents may be obtained on-line at no charge, after 9:00AM, Friday, July 23, 2010 at the Washtenaw County Purchasing Department website.

General project purchasing and procedural questions regarding this RFP should be directed to Robert G. Devault at **734-222-6760** or devaultb@ewashtenaw.org.

Please direct technical project questions regarding this RFP to Jeffrey H. Dehring, RLA, Washtenaw County Parks and Recreation, Park Planner at **734-971-6337 x318** or dehringj@ewashtenaw.org.

A certified check payable to WCPRC or bid bond in the amount of five percent (5%) of the base bid must accompany each bid. The successful bidder will be required to furnish satisfactory insurance in the amounts specified in the Contract. Satisfactory Performance and Labor and Materials Payment Bonds in the amount of 100% of the contract price shall be provided as indicated on the forms included in the Contract Document.

Proposal Terms:

A. Washtenaw County reserves the right to reject any and all proposals received as a result of this RFP. If a proposal is selected it will be the most advantageous regarding price, quality of service, the Contractors qualifications and capabilities to provide the specified service, and other factors that the County may consider. The County does not intend to award a contract fully on the basis of any response made to the proposal; the County reserves the right to consider proposals for modification at any time before a contract would be awarded, and negotiations would be undertaken with that contractor whose proposal is deemed to best meet the County's needs, specifications, and interests.

B. A standard Washtenaw County Service Contract will be executed between Washtenaw County Parks and Recreation Commission (WCPARC) and the Contractor (see Sample provided within this document). The WCPARC reserves the right to reject any and all bids, to waive or not waive informalities or irregularities in bids or bidding procedures, and to accept or further negotiate cost, terms, or conditions of any bid determined by the County to be in the best interest of the County even though not the lowest bid.

C. Proposals must be signed by an official authorized to bind the contractor to its

provision for at least a period of 90 days. Failure of the successful bidder to accept the obligation of the contract may result in the cancellation of any award.

D. In the event it becomes necessary to revise any part of the RFP, an addenda will be provided. Deadlines for submission of RFP's may be adjusted to allow for revisions. To be considered, Four copies (4) the original and three copies of proposals must be at the County offices as indicated on or before the date and time specified.

E. Bids must be submitted on the forms provided within the Contract Document, Proposal section. Proposal figures may be handwritten or typed, however, no erasures are permitted. Mistakes must be crossed out, corrected, and initialed in ink by the person signing the proposal. No changes shall be permitted in the wording or quantity numbers on the Proposal Form(s).

F. In the event, the County receives two or more bids from responsive, responsible bidders, one or more of whom are Washtenaw County vendors and the bids are substantially equal in price, quality and service, the County shall award the contract to the most responsive, responsible Washtenaw County vendor. For purposes of this section, Washtenaw County vendor means a company which has maintained its principal office in Washtenaw County for at least six (6) months. Maintaining a Washtenaw County P.O. Box is not sufficient to establish a company as a Washtenaw County vendor. The County shall have sole discretion under this section to determine if two or more bids are substantially equal.

Thank you for your interest.

Robert Devault, CPM
Purchasing Manager

INSTRUCTIONS TO BIDDERS

GENERAL

Work under this Contract includes the construction and installation of natural boulder retaining walls, bituminous hot mix asphalt pathways, limestone pathways, permeable concrete pavers, concrete retaining curbs, concrete flatwork, landscaping, soil erosion control measures, removal of designated vegetation, and various related site work.

The successful Bidder will be bound by a Standard Provisions for Service Contract held by Washtenaw County Purchasing. Additionally, the party to whom the OWNER intends to award the Contract will be required to execute the Standard Provisions for Service Contract and Construction Unity Board (CUB) Agreement.

SECURING DOCUMENTS

Copies of the proposed Bid Documents may be obtained from the Washtenaw County Purchasing Department website as described in the Request for Proposal

FORMAT OF CONTRACT DOCUMENTS

The Contract Documents are divided into sections and divisions in keeping with accepted industry practice to separate categories of subject matter for convenient reference.

INTERPRETATION OF CONTRACT DOCUMENTS

The Contract Documents are intended to be compatible and to provide provisions and details reasonably required for the execution of the proposed work. Any person contemplating the submission of a Bid shall have thoroughly examined all parts of the said Contract Documents. Should there be any doubt as to the meaning or intent of the contract language, the Bidder should immediately request an interpretation sufficiently in advance of the Bid due date to allow for changes, if necessary, in the Contract Documents. Verbal statements and/or instructions issued regarding the meaning or intent of any aspect of the Contract Documents prior to the Bid due date will be considered unofficial, will not be binding of the OWNER and shall not be considered as modifying any provision of the Contract Documents.

Any change in the Contract Documents required as the result of an interpretation will be made only in the form of an addendum to the Contract Documents which shall be furnished to all Bidders of record with Washtenaw County Purchasing that received a set of the Contract Documents. All addenda issued prior to the Bid due date will become a part of the Contract Documents and all Bids are to include the work described therein. Each Bid submitted shall list by number, all addenda which have been received prior to the time scheduled for Bid submittal. Failure to acknowledge receipt of addenda may result in rejection of a Bid as non-responsive.

BIDDER'S UNDERSTANDING

Examination of Contract Documents: Each Bidder must carefully inform themselves of the conditions relating to the performance of the work and assure they are thoroughly familiar with all of the Contract Documents. Failure to do so will not relieve the successful Bidder of their obligation to enter into a contract and complete the contemplated work in strict accordance with the Contract Documents.

Examination of Project Site: Each Bidder must visit the site during the pre-bid walk through to obtain first-hand knowledge of existing conditions, including the presence of structures, utilities, services and obstacles which may be encountered as well as any other conditions relative to the work to be performed.

Compliance with Laws and Regulations: Each Bidder shall also inform himself/herself of, and the Bidder(s) awarded a contract shall fully comply with all Federal, State, and local laws, statutes, and ordinances affecting the execution of the work. This requirement includes, but is not limited to, applicable regulations concerning minimum wage rates, non-discrimination in the employment of labor, protection of public and employee safety and health, environmental protection, the protection of natural resources, fire protection, funding programs, and permits, fees, and licensing.

Additional Compensation: Bidders shall not receive additional compensation for conditions which can be determined by examining the site, existing drawings, and the Contract Documents.

LICENSE REQUIREMENTS

The bidder shall provide a copy of his current state Business License and Specialty or General Contractor, as well as his Federal Tax Identification number, upon request from the OWNER.

PREPARATION OF BIDS

In order to receive consideration, make all Bids in strict accordance with the following:

Complete sets of Contract Documents shall be used in preparing Bids. The OWNER assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Contract Documents. The OWNER, in making available copies of the Contract Documents, do so only for the purpose of obtaining Bids on the work contemplated and do not confer a license or grant permission for any other use.

All blank spaces on the Bid Form(s) must be filled in handwritten or typewritten, and when required, in both words and figures. No changes shall be permitted in the wording or numbers on the Proposal Form(s). No exceptions or special conditions that

are not required by the Bid requirements shall be made. Written amounts shall govern where the amount stated in writing and amount stated in figures does not agree. In case of a discrepancy between unit prices and totals, unit prices will prevail.

All submitted Bids shall be signed. If the Bidder is a corporation, the legal name of the corporation shall be set forth in the Bid together with the signature of the individual authorized to sign contracts on behalf of the corporation. If the Bidder is a partnership, the true name of the firm shall be set forth in the Bid, together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership. If the signature is by an agent, other than an officer of a corporation or a member of a partnership, a notarized power-of-attorney must be submitted with the Bid, otherwise the Bid may be rejected.

All Bids must be made out on the Proposal Form(s) without any modification whatsoever of the times, terms, quantities, conditions, and other requirements therein stated.

Telegraphic bids will not be considered. Bids received via facsimile machine or email are not regarded as sealed bids and will not be accepted.

SUBMISSION OF BIDS

Each Bidder shall furnish, as part of the Bid, the following documentation:

1. Bidder's Acknowledgment
2. Proposal Form(s)
3. Bid Bond

Only the original signed bid proposal and accompanying documents need be submitted.

Bids shall be delivered to Washtenaw County Purchasing on or before the time and date indicated in the Request for Proposal.

It is the sole responsibility of the Bidder to insure that his/her Bid is received on time at the location indicated in the Request for Proposal. Any Bid received after the time and date specified may not be considered and may be returned to the originator unopened if so decided by the OWNER.

WITHDRAWAL OF BIDS

Bids may not be modified after submittal. Bidders may withdraw Bids at any time before the time and date the Bid is due, but will not be permitted to resubmit them. A Bid may only be withdrawn by written request executed by an authorized representative of the Bidder prior to the due date and hour designated for delivery of Bids.

Bids may not be withdrawn for a period of 90 days after the bids are received and opened.

BASIS OF AWARD – See the Proposal Terms for the basis of award.

CONTRACT AWARD

The party to whom the OWNER intends to award the Contract **will be required to execute the Standard Provisions for Service Contract and Construction Unity Board (CUB) Agreement.**

IMPLEMENTATION OF THE WORK

Unless otherwise provided in the Contract Documents, the CONTRACTOR shall not begin or resume the work to be performed under the Contract before receiving written notification from the OWNER to do so, and shall thereupon begin or resume the work within the number of days indicated in such notice.

No work is to be performed without the express consent of the OWNER. In some instance, the CONTRACTOR may not be authorized to perform services prescribed in the Contract Documents without the OWNER or OWNER's designated representative being present on the job site. The CONTRACTOR shall be considered in default of the Contract should any work be performed in the absence of such authority.

The CONTRACTOR shall employ an ample work force and provide the equipment necessary and of sufficient capacity and efficiency to accomplish the work in a safe and workmanlike manner at an appropriate rate of progress.

In the event work is undertaken during adverse weather conditions, the CONTRACTOR will be required to exercise precautions necessary to produce satisfactory work and shall protect the finished work from the elements. It is agreed and understood that the cost of these precautions has been included in the Bid for the various items of work in the Agreement and that no extra compensation will be allowed.

WORK SCHEDULE

All work specified by the contract shall be undertaken in a manner that limits any adverse impact to the OWNER's operation. For the work described herein, the CONTRACTOR will be limited to performing the work in accordance with the Contract Documents.

Project Anticipated Start Date week of September 15, 2010
Project Anticipated Completion Date October 22, 2010

The final project schedule will be determined at the preconstruction meeting with the selected contractor.

WORK BY OTHERS

Work by others may be ongoing during the execution of work under this Contract. The CONTRACTOR shall afford other CONTRACTORS and the OWNER reasonable opportunity to properly execute their work and shall coordinate his/her work with theirs. The CONTRACTOR shall arrange his/her work so that at no time will it cause unnecessary interruption to the operation of other work.

The Bidder is cautioned to thoroughly familiarize himself/herself with the entire project to determine the portions of work which may be in conflict with other work and to understand the responsibilities associated with working around other work, if necessary, as no additional compensation due to scheduling problems with other work will be allowed after opening of the Bids.

INSURANCE COVERAGE

The CONTRACTOR is reminded to review and become familiar with the insurance coverage and limitations included in the General Conditions section of this document. The successful CONTRACTOR will be required to provide submit a Certificate(s) of Insurance at the time of Contract award naming OWNER (WASHTENAW COUNTY PARKS AND RECREATION COMMISSION) as additional insured.

The Bidder is directed to Article VI of the Service Contract and Article 5 of the General Conditions for specific requirements as to each of the required policies.

END OF SECTION

BIDDER’S QUALIFICATIONS AND EXPERIENCE STATEMENT

The Owner requires supporting evidence regarding Bidder’s Qualifications and competency for the proposed project work elements. The Bidder is required to furnish all of the applicable information listed below, which must be submitted with the sealed bid at time of the Bid Opening. The Qualifications and Experience certificate must be type written and signed in ink.

QUALIFICATIONS AND EXPERIENCE CERTIFICATE

The Undersigned certifies under oath that the information provided herein is true and sufficiently complete so as not to be misleading.

Submitted To: Washtenaw County Parks and Recreation Commission

Address: 2230 Platt Road, P.O. Box 8645 Ann Arbor, Michigan 48107-8645

Submitted By: _____

Name: _____

Address: _____

Telephone: _____ Fax No. _____

Principal: _____

Corporation: _____ Joint Venture: _____

Partnership: _____ Other: _____

Individual: _____

Name of Project: COUNTY FARM PARK – PATHWAY ENHANCEMENTS

ORGANIZATION

How many years has your organization been in business as a CONTRACTOR?

How many years has your organization been in business under its present business name?

Under what other or former name(s) has your organization operated?

If your organization is a corporation, answer the following:

Date of Incorporation: _____

State of Incorporation: _____

President's Name: _____

Vice President's name: _____

Secretary's Name: _____

Treasurer's Name: _____

If your organization is a partnership, answer the following:

Date of Organization: _____

Type of Partnership: _____

Name(s) of General Partner(s): _____

If your organization is individually owned, answer the following:

Date of Organization: _____

Name of Owner: _____

If the form of your organization is other than those listed above, describe it and name the principals:

LICENSING

List jurisdiction and trade categories in which your organization is legally qualified to do business, and indicate registration or license numbers, if applicable:

List jurisdiction in which your organization's partnership or trade name is filed:

EXPERIENCE

List the categories of work that your organization normally performs with its own forces:

On a separate sheet, list major construction projects your organization has completed in the past five (5) years, giving the name of project, OWNER, Architect/Engineer/Landscape Architect, Contract amount, date of completion and percentage of the cost of the work performed with your own forces.

On a separate sheet, list the construction experience and present commitments of any key individuals of your organization.

CLAIMS AND SUITS (if the answer to any of the questions below is yes, please attach details)

Has your organization ever failed to complete any work awarded to it? _____

Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against your organization or officers? _____

REFERENCES

Trade References: _____

Bank References: _____

Surety: _____

Name of Bonding Company:

Name and Address of Agent:

Signature: _____

Dated at: _____ this _____ day of _____, 2009

Name of Organization: _____

By: _____

Title: _____

Mr/Mrs/Ms _____ being duly sworn deposes and says that the information provide herein is true and sufficiently complete so as not to be misleading.

Subscribed and sworn before me this _____ day of _____, 2010

Notary Public: _____

My Commission Expires: _____

IF THIS INFOMRATION IS NOT SUBMITTED WITH THE SEALED BID AT THE TIME OF BID, THE BID MAY BE CONSIDERED INCOMPLETE.

NOTE: PLEASE SUBMIT THE ORIGINAL AND THREE (3) COPIES OF THE PROPOSAL.

PROPOSAL FOR RFP #6554
COUNTY FARM PARK PATHWAY ENHANCEMENTS
TO THE WASHTENAW COUNTY PARKS AND RECREATION COMMISSION

The undersigned as Bidder hereby declares that this Proposal is made in good faith without fraud or collusion with any person or persons bidding on the same Contract; that he has read and examined the Advertisement, Information for Bidders, Proposal, General Conditions, Agreement, Forms of Bonds, Specifications and Plans, as prepared by the ENGINEERS, and understands all of the same; that he or his representative has made personal investigation at the site and has informed himself fully with regard to the conditions to be met in the execution of this Contract, and the undersigned proposes to furnish all labor, materials, tools, power, transportation, and construction equipment necessary for the construction of the Project and performing related work in full accordance with the aforesaid Contract Documents, including any and all addenda officially issued, the receipt of which is hereby acknowledged:

Addendum No. /Dated	Date of Receipt	Signature
_____	_____	_____
_____	_____	_____

AWARD OF CONTRACT:

Washtenaw County reserves the right to reject any and all proposals received as a result of this RFP. If a proposal is selected it will be the most advantageous regarding price (See: "Low Bidder" following), quality of service, the Vendors' qualifications and capabilities to provide the specified service, and other factors which the County may consider. The County does not intend to award a Bid fully on the basis of any response made to the proposal; the County reserves the right to consider proposals for modifications at any time before a Bid would be awarded, and negotiations would be undertaken with that Vendor whose proposal is deemed to best meet the County's specifications and needs.

Low Bidder:

A low bidder will be determined by the price, qualifications, and capabilities to provide the specified services.

PROPOSAL PRICE: The Bidder agrees to complete the Project for the following unit prices:

BASE BID ITEMS

Item No.	Item Description	Qty	Unit	Unit Price	Total Price
1.	Mobilization, Bonds, Insurance, Permits	1	LS	\$	\$
2.	Tree protection fences and temporary path route fencing	1	LS	\$	\$
3.	Soil Erosion Control Measures	1	LS	\$	\$
4.	Excavation of existing soils for proposed pathway & maintenance drive, disposal on-site	260	CY	\$	\$
5.	Complete removal of existing limestone surface materials and placement in proposed maintenance drive	260	CY	\$	\$
6.	Complete removal and lawful disposal of concrete debris, pipe, wood power pole and misc. items	1	LS	\$	\$
7.	Adjustment of manhole casting and communication handhole box along pathway	1	LS	\$	\$
8.	Aggregate strip at edge of walk north of Field Operations Bldg	21	LF	\$	\$
9.	All boulder work, using on-site source materials	1	LS	\$	\$
10.	Bituminous Hot Mix Asphalt Leveling course – 13L-20AA	155	TON	\$	\$
11.	Bituminous Hot Mix Asphalt Wearing course – 15T-20AAA	155	TON	\$	\$
12.	Limestone for pathway base – 21AA	525	TON	\$	\$
13.	Bioswale plantings and soil mixture	1	LS	\$	\$
14.	Acer saccharum (Sugar maple) – 3” caliper	5	EA	\$	\$
15.	Full restoration of all disturbed areas, topsoil, seed, straw, mulch, etc.	1	LS	\$	\$
16.	Remove, relocate, and/or repair existing irrigation system to accommodate proposed features	1	LS	\$	\$
17.	Permanent 6” dia. Steel Bollards – DuMor Model No. 402-42, S-1	7	EA	\$	\$
18.	Removable 6” dia. Steel Bollards – DuMor Model No. 402-42, S-1SL	3	EA	\$	\$
19.	Complete construction of formed concrete culvert crossing structure per detail	1	LS	\$	\$
20.	Concrete permeable paver system	2370	SF	\$	\$

Item No.	Item Description	Qty	Unit	Unit Price	Total Price
21.	Concrete slab for kiosk and pad for Gateway entry	500	SF	\$	\$
22.	Concrete footings for Gateway structure per detail	2	EA	\$	\$
Total Bid Amount (Items 1 through 22)				\$	\$

Dollars (\$ _____)

(Amount shall be shown in both words and figures. In case of a discrepancy, the amount shown in words shall govern.)

The undersigned has read the "Method of Measurement and Basis of Payment", and acknowledges that Pages MP-1 to MP-3 are part of his proposal.

The undersigned agrees that if the foregoing Proposal shall be accepted by the OWNER, he will, within ten (10) days (Sundays and legal holidays excepted) after receiving notice of such acceptance, enter into the attached form of Agreement and will complete the Project, ready for use, at the price and within the time stated in this Proposal, and that he will furnish the OWNER satisfactory Contract Bonds and certificates of insurance coverage.

The undersigned further agrees that if the foregoing Proposal shall be accepted, he will commence work immediately after the Contract has been awarded, the Agreement executed, and he has received a Notice to Proceed and he shall complete the entire work within **30** calendar days.

The undersigned attaches hereto his Bid Security, as required by the Advertisement and Information for Bidders, and the undersigned agrees that in case he shall fail to fulfill his obligations under the foregoing Proposal and/or shall fail to furnish bonds, as specified, the OWNER may, at its option determine that the undersigned has abandoned his rights and interests in such Contract and that his Bid Security accompanying his Proposal has been forfeited to the said OWNER, but otherwise the Bid Security shall be returned to the undersigned upon the execution of the Contract and the acceptance of the bonds.

The Bidder shall acknowledge that he/she is an equal opportunity employer and that they do not discriminate against other firms due to race, age, gender or physical conditions.

In submitting this bid, it is understood that the right is reserved by the OWNER to accept any bid, to reject any or all bids, and to waive irregularities in bidding in the interest of the OWNER.

The Bidder has completed the accompanying "Legal Status" form.

Dated and Signed at _____
this the _____ day of _____, 20_____.

OFFICIAL COMPANY ADDRESS

BIDDER'S NAME

By

Telephone

Title

_____ email

- By checking this box we hereby certify that we are a Washtenaw County company as defined in Section F of the Request for Proposal. If proven otherwise you may be subject to Disbarment and/or Suspension of doing business with Washtenaw County.**

IF THIS INFORMATION IS NOT SUBMITTED WITH SEALED BID AT THE TIME OF BID, THE BID WILL BE CONSIDERED INCOMPLETE.

**MEASUREMENT AND PAYMENT SCHEDULE
County Farm Park, Pathway Enhancements**

<u>ITEM IN PROPOSAL</u>	<u>METHOD OF MEASUREMENT</u>	<u>BASIS OF PAYMENT</u>
Mobilization, Bonds, Insurance, Permits	By the unit lump sum (LS).	Delivery to site of earthmoving equipment, sanitary facilities, and other equipment as required for start of excavation. Includes the establishment of the CONTRACTOR's temporary site facilities, pre-construction costs such as Bonds, Insurance, and all permits directly attributable to the project.
Tree Protection Fences and temporary path route fencing	By the unit lump sum (LS).	Furnish, install, and maintain site security, temporary path route fencing, and tree protection fences. Includes eventual removal at end of project.
Soil Erosion Control Measures	By the unit lump sum (LS).	Furnish, install, and maintain all permit required erosion control measures throughout project work. Includes eventual removal at end of project.
Excavation of existing soils for proposed pathway & maintenance drive, disposal on-site	By the unit cubic yard (CY).	For excavation of all soils and removal of all stump and root materials to accommodate proposed improvements, involves loading, hauling, grading of spoils at location nearby the project work.
Complete removal of existing limestone materials and placement in proposed maintenance drive	By the unit cubic yard (CY).	For removal of existing limestone to depth as indicated, relocation per drawing and details, shall include supply/installation of new fabric in new alignment.
Complete removal and lawful disposal of concrete debris, pipe, wood power pole, and miscellaneous items	By the unit lump sum (LS).	For removal and lawful disposal of miscellaneous debris as noted and as directed by OWNER.
Adjustment of manhole casting and fiber optic communication handhole box along pathway	By the unit lump sum (LS).	For supplying all necessary new materials as needed to adjust each unit, so their top is roughly one-inch above the pathway surface.
Aggregate strip at edge of walk, north of the Field Operations Bldg.	By the unit lineal feet (LF).	For furnishing and installing all materials as shown on plans or specified.
All boulder work, using on-site source materials	By the unit lump sum (LS).	For gathering on-site boulders from several locations, transport, and place in locations as indicated on drawings and/or as directed by the OWNER. Will include backfilling as needed.
Bituminous Hot Mix Asphalt – Leveling Course	By the unit ton (TON).	For furnishing and machine installing the entire asphalt mixture per the drawings and specifications. CONTRACTOR shall provide OWNER will material load slips certifying specification compliance prior to approval of full payment.

<u>ITEM IN PROPOSAL</u>	<u>METHOD OF MEASUREMENT</u>	<u>BASIS OF PAYMENT</u>
Bituminous Hot Mix Asphalt – Wearing Course	By the unit ton (TON).	For furnishing and machine installing the entire asphalt mixture per the drawings and specifications. CONTRACTOR shall provide OWNER will material load slips certifying specification compliance prior to approval of full payment.
Limestone for pathway base	By the unit ton (TON).	For furnishing and installing the limestone per the details and specifications. CONTRACTOR shall provide OWNER will material load slips certifying specification compliance prior to approval of full payment.
Bioswale plantings, soil medium, and one year maintenance/establishment program	By the unit lump sum (LS).	For furnishing and installing, all plant materials as needed per design details. Shall also include incorporating compost mix to create an acceptable planting medium. Submit to OWNER and receive approval of a detailed one-year maintenance/establishment program.
Acer saccharum	By the unit each (EA).	For furnishing and installing tree species as specified. Shall include two-year warranty period for placement of sub-quality performance of trees.
Full restoration of all disturbed areas, topsoil, seed, straw, mulch, etc.	By the unit lump sum (LS).	For backfilling improvements, and all restoration efforts including topsoil, seed, straw, and mulch of all disturbed areas.
Remove, relocate, and/or repair existing irrigation system to accommodate proposed features	By the unit lump sum (LS).	For complete inventory and investigation of existing irrigation system in order to modify it as needed to accommodate proposed improvements. Will include all materials and supplies to provide a fully functional system to the OWNER.
Permanent 6" dia. Steel Bollards	By the unit each (EA).	For furnishing and installing, all materials as specified.
Removable 6" dia. Steel Bollards	By the unit each (EA).	For furnishing and installing, all materials as specified.
Complete construction of formed concrete culvert crossing structure	By the unit lump sum (LS).	For complete construction including excavation, forming, expansion materials, reinforcement rods, concrete, boulders/rip-rap, and backfilling as indicated on drawings and as specified.
Concrete permeable paver system	By the unit square feet (SF).	For supplying and installing all construction materials including concrete pavers, forming, expansion materials, reinforcement rods, and concrete retaining edges as indicated on drawings and as specified.
Concrete slab for kiosk and pad for Gateway entry	By the unit square feet (SF).	For complete construction including excavation, forming, expansion materials, reinforcement rods, and concrete as

ITEM IN PROPOSAL

METHOD OF MEASUREMENT

BASIS OF PAYMENT

Concrete footing for Gateway structure

By the unit each (EA).

indicated on drawings and as specified. For complete construction including excavation, forming, expansion materials, reinforcement rods, and concrete as indicated on drawings and as specified.

END OF SECTION

NAME, ADDRESS, LEGAL STATUS, AND SIGNATURE OF BIDDER

This Proposal is submitted in the name of:

(Print) _____

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

Street _____

City _____ State _____ Zip Code _____

Telephone _____ Fax _____

Email _____

The undersigned hereby declares that they have legal status to represent the business checked below:

- INDIVIDUAL
- INDIVIDUAL DOING BUSINESS UNDER AN ASSUMED NAME
- CO-PARTNERSHIP

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

- CORPORATION INCORPORATED UNDER THE LAWS OF THE STATE OF _____. The Corporation is:
- LICENSED TO DO BUSINESS IN MICHIGAN
- NOT NOW LICENSED TO DO BUSINESS IN MICHIGAN

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

NAME AND TITLE	HOME ADDRESS
_____	_____
_____	_____
_____	_____

Signed and Sealed this _____ day of _____, 2009

By (Signature)

Printed name of signer Title

IF THIS INFORMATION IS NOT SUBMITTED WITH THE SEALED BID AT THE TIME OF BID, THE BID MAY BE CONSIDERED INCOMPLETE.

"Sample"
SERVICE CONTRACT
NAME OF CONTRACTOR

AGREEMENT is made this _____ day of _____, 2009, 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 **CONTRACTOR** located at **XYZ STREET, ANYWHERE, USA 99999** ("Contractor").

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

ARTICLE I - SCOPE OF SERVICES

The Contractor will provide construction services for per Washtenaw County Formal Bid #XXXX. The Contractor will furnish all labor, materials, tools, equipment, transportation or other facilities and services necessary to perform and complete the project in accordance with Contract Documents.

ARTICLE II - COMPENSATION

Upon completion of the above services and submission of invoices the County will pay the Contractor, for full performance of the work, the amount of **SPELL OUT DOLLAR AMOUNT (\$ XXX,XXX)**, subject to additions and deductions as documented through authorized change orders. The County shall make monthly progress payments to the Contractor on the basis of work performed and material suitably stored onsite during the preceding month of the Contract. To insure proper performance of the Contract, the County shall retain ten percent (10%) of the value of the work until final completion and acceptance of all work covered in the Contract.

ARTICLE III - REPORTING OF CONTRACTOR

Section 1 - The Contractor is to report to the Director of the Washtenaw County Parks and Recreation Commission 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 **XX/XX/XX** and ends on **XX/XX/XX** according to the project essential completion schedule unless subsequently modified through authorized change orders.

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 agree that the Contractor is neither an employee nor an agent of the County for any purpose.

Section 4 - The parties agree that all work done under this contract shall be completed in the United States and that none of the work will be partially or fully completed by either an offshore subcontractor or offshore business interest either owned or affiliated with the contractor. For purposes of this contract, the term, "offshore" refers to any area outside the contiguous United States, Alaska or Hawaii.

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. 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 nonowned 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 may be subject to the approval of the Washtenaw County Administrator, if requested by the 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 Washtenaw County Parks and Recreation Commission, 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 - PREVAILING WAGE RATES & CUB AGREEMENT

The Contractor agrees that all craftsmen, mechanics and laborers it employs to work on this project shall, at a minimum, receive the prevailing wages and fringe benefits of the Building Trade Department for corresponding classes of craftsmen, mechanics and laborers for the Washtenaw County area, as determined and published by the Davis-Bacon Division of the United States Department of Labor. Contractor agrees that all subcontracts entered into by the Contractor shall contain a similar provision covering any sub-contractor's employees who perform work on this project. Contractor further agrees to sign a project labor agreement as provided by the Construction Unity Board ("CUB Agreement"). A copy of the CUB Agreement is attached as an appendix to this Contract.

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 amendments 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 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 and supersedes all prior representations, negotiations or agreements whether written or oral.

ATTESTED TO: WASHTENAW COUNTY

By: _____
Lawrence Kestenbaum (DATE)
County Clerk/Register

By: _____
Robert L. Tetens (DATE)
Director, Parks & Recreation

APPROVED AS TO FORM: CONTRACTOR

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

By: _____
CONTRACTOR (DATE)

PERFORMANCE BOND

_____ as Principal, hereinafter called the CONTRACTOR, and _____, a corporation duly authorized to do business in the State of Michigan (referred to as "Surety"), are firmly bound unto

WASHTENAW COUNTY PARKS AND RECREATION COMMISSION

As obligee, hereinafter referred to as "OWNER", in the amount of

_____ Dollars (\$ _____)

(Amount shall be shown in both words and figures. In case of discrepancy, amount shown in words shall govern).

for the payment whereof the CONTRACTOR and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The CONTRACTOR has entered a written contract with the OWNER dated _____, for the construction of

PATHWAY ENHANCEMENTS at COUNTY FARM PARK

This bond is given for that contract in compliance with Act No. 213 of the Michigan Public Acts of 1963, as amended, being MCL 129.201 et seq.

Whenever the CONTRACTOR is declared by the OWNER 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 OWNER 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 OWNER, 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.

Surety shall have no obligation to the OWNER if the CONTRACTOR fully and promptly performs under the contract.

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__.

In the Presence of:

WITNESS

(fill in contractor's name)

Principal

Title

WITNESS

Surety

Title

Address of Surety

City Zip Code

LABOR AND MATERIAL PAYMENT BOND

_____ as Principal, (hereinafter called the CONTRACTOR), and _____, a corporation duly authorized to do business in the State of Michigan (referred to as "Surety"), are firmly bound unto

WASHTENAW COUNTY PARKS AND RECREATION COMMISSION

As obligee, hereinafter referred to as "OWNER", in the amount of

_____ Dollars (\$_____)

(Amount shall be shown in both words and figures. In case of discrepancy, amount shown in words shall govern).

for the payment whereof the CONTRACTOR and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The CONTRACTOR has entered a written contract with the OWNER dated _____, for the construction of

PATHWAY ENHANCEMENTS at COUNTY FARM PARK

This bond is given for that contract in compliance with Act No. 213 of the Michigan Public Acts of 1963, as amended, being MCL 129.201 et seq.

If the CONTRACTOR fails to promptly and fully repay claimants for labor and material reasonably required under the contract, the Surety shall pay those claimants.

Surety's obligations shall not exceed the amount stated in the second paragraph above, and Surety shall have no obligation if the Principal promptly and fully pays the claimants.

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

In the Presence of:

WITNESS

(fill in contractor's name)

Principal

Title

WITNESS

Surety

Title

Address of Surety

City

Zip Code

MEMORANDUM OF UNDERSTANDING

1. WORK DISPUTES

In return for the promise made in paragraph (3) below, the parties agree that there will be no strike, work stoppage or lock-out for the duration of this Memorandum. Any jurisdictional dispute shall be resolved through normal procedures.

There will be a job conference with all contractors and sub-contractors prior to starting work.

2. COFFEE BREAKS

There shall be no organized coffee breaks.

3. PAYMENT OF FRINGES

Any Union having a claim against a contractor or subcontractor for unpaid wages and/or fringe benefits for work performed on the project shall give written notice of such claim to such contractor or subcontractor (with a copy of the notice to the Construction Manager or General Contractor) within three (3) business days after such claim has become known. Upon receipt of such written notice, the Construction Manager or General Contractor involved shall withhold an amount equal to the claim from the next disbursement payable to the contractor, pending resolution of the dispute satisfactory to the Construction Manager or General Contractor. In the event of any such dispute, the Union agrees to use its best efforts to pursue any legal remedies available, including litigation by Fund Trustees. It is understood that the intent to this section is to accomplish prompt and effective resolution of any disputes between the Union and any contractor or subcontractor over payment of wages and fringes.

4. UNION WORK

The parties understand and agree that each contractor and subcontractor at all tiers of this project shall, prior to beginning work on the project, become signatory parties to the respective current collective bargaining agreements of the appropriate Local Unions of the Washtenaw County Skilled Building Trades Council.

(Contractor, Owner or Construction Manager)

(Representative of Washtenaw County Skilled Building Trades Council)

(Project Description)

(Date)

THIS MEMORANDUM APPLIES ONLY TO THE PROJECT AND/OR CONSTRUCTION ABOVE DESCRIBED.

WHITE – Union Copy
GREEN – Contractor or Construction Manager Copy
CANARY – Owner Copy
PINK – CUB Copy
GOLD – Project Copy

Printed On Site

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ARTICLE 1 - DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

Agreement: The written agreement/contract between OWNER and CONTRACTOR covering the work to be performed; other Contract Documents are attached to the Agreement.

Application for Payment: The form furnished by OWNER which is to be used by CONTRACTOR in requesting progress payments and which is to include the schedule of values required by Paragraph 14.1 and an affidavit of CONTRACTOR that progress payments theretofore received on account of the work have been applied by CONTRACTOR to discharge in full all of CONTRACTOR's obligations reflected in prior Applications for Payment.

Bid: The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the work to be performed.

Bidder: Any person, firm, or corporation submitting a Bid for the work.

Bonds: Bid, performance and payment bonds, and other instruments of security, furnished by CONTRACTOR and his surety in accordance with the Contract Documents.

Change Order: A written order to CONTRACTOR signed by OWNER authorizing an addition, deletion, or revision in the work, or an adjustment in the Contract Price or the Contract Time issued after execution of the Agreement.

Contract Documents: The Agreement, Addenda (whether issued prior to the Opening of Bids or the execution of the Agreement), Instructions to Bidders, CONTRACTOR's bid, the bonds, the Notice of Award, these General Conditions, the Supplementary Conditions, the Specifications, Drawings, and Modifications.

Contract Price: The total monies payable to CONTRACTOR under the Contract Documents.

Contract Time: The number of days stated in the Agreement for the Completion of the Work, computed as provided in Paragraph 17.2.

CONTRACTOR: The person, firm, or corporation with whom OWNER has executed the Agreement.

Day: A calendar day of twenty-four (24) hours measured from midnight to the next midnight.

Drawings (Plans): The drawings, also commonly known or referred to as Plans, which show the character and Scope of Work to be performed and which have been prepared or approved by OWNER and are referred to in the Contract Documents.

Field Order: A written order issued by OWNER which clarifies or interprets the Contract Documents in accordance with Paragraph 9.3 or orders minor changes in the work in accordance with Paragraph 10.2.

Modification: (a) A written amendment of the Contract Documents signed by both parties; (b) A Change Order; (c) A written clarification or interpretation issued by OWNER in accordance with Paragraph 9.3; or (d) A written order for a minor change or alteration in the work issued by OWNER pursuant to Paragraph 10.2. A Modification may only be issued after execution of the Agreement.

Notice of Award: The written notice by OWNER to the apparent successful Bidder stating that upon compliance with the conditions precedent to be fulfilled by him within the time specified, OWNER will execute and deliver the Agreement to him.

Notice to Proceed: A written notice given by OWNER to CONTRACTOR (with a copy to OWNER) fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform his obligations under the Contract Documents.

OWNER: The Washtenaw County Parks and Recreation Commission or Washtenaw County as named in the Agreement for whom the work is to be performed.

OWNER'S REPRESENTATIVE: The authorized representative of OWNER who is assigned to the project site or any part thereof.

Project: The entire construction to be performed as provided in the Contract Documents.

Resident Project Representative: The authorized representative of OWNER who is assigned to the Project site or any part thereof.

Shop Drawings: All drawings, diagrams, illustrations, brochures, schedules, and other data which are prepared by CONTRACTOR, subcontractor, manufacturer, supplier, or distributor and which illustrate the equipment, material, or some portion of the work.

Specifications: Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the work. The Specifications are customarily organized in 18 divisions in accordance with the Uniform System for Construction Specifications endorsed by the Construction Specifications Institute.

Subcontractor: An individual, firm, or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the work at the site.

Substantial Completion: The date as certified by OWNER when the construction of the Project or a specified part thereof is sufficiently completed, in accordance with the Contract Documents, so that the Project or specified part can be utilized for the purposes for which it was intended; or if there be no such certification, the date when final payment is due in accordance with Paragraph 14.13.

Work: Any and all obligations, duties, and responsibilities necessary to the successful completion of the Project assigned to or undertaken by CONTRACTOR under the Contract Documents, including all labor, materials, equipment, and other incidentals, and the furnishing thereof.

ARTICLE 2 - PRELIMINARY MATTERS

Execution of Agreement

2.1. At least three counterparts of the Agreement and such other Contract Documents as practicable will be executed and delivered by CONTRACTOR to OWNER within ten days of the Notice of Award and the OWNER will execute and deliver one counterpart to CONTRACTOR within ten days of receipt of the executed Agreement from CONTRACTOR. OWNER will identify those portions of the Contract Documents not so signed and such identification will be binding on all parties. The CONTRACTOR, and OWNER shall each receive an executed counterpart of the Contract Documents and additional conformed copies as required.

Delivery of Bonds

2.2. When the CONTRACTOR delivers the executed Agreements to OWNER, he/she shall also deliver to OWNER such Bonds as may be required to furnish in accordance with Paragraph 5.1.

Copies of Documents

2.3. OWNER shall furnish to CONTRACTOR up to five copies (unless otherwise provided in the Supplementary Conditions) of the Contract Documents as are reasonably necessary for the execution of the work. Additional copies will be furnished, upon request, at the cost of reproduction.

Contractor's Pre-Start Representations

2.4. CONTRACTOR represents that he has familiarized himself with, and assumes full responsibility for having familiarized himself with the nature and extent of the Contract Documents, work, locality, and with all local conditions and Federal, State, and local laws, ordinances, rules, and regulations that may in any manner affect performance of the work, and represents that he has correlated his study and observations with the requirements of the Contract Documents. CONTRACTOR also represents that he has studied all surveys and investigation reports of subsurface and latent physical conditions referred to in the General Requirements (Division 1) of the Specifications and made such additional surveys and investigations as he deems necessary for the performance of the work at the Contract Price in accordance with the requirements of the Contract Documents and that he has correlated the results of all such data with the requirements of the Contract Documents.

Commencement of Contract Time, Notice to Proceed

2.5. The Contract Time will commence to run on the thirtieth day after the day on which the executed Agreement is delivered by OWNER to CONTRACTOR; or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed; but in no event shall the Contract Time commence to run later than the ninetieth day after the day of Bid Opening or the thirtieth day after the day on which OWNER delivers the executed Agreement to CONTRACTOR. A Notice to Proceed may be given at any time within thirty days after the day on which OWNER delivers the executed Agreement to CONTRACTOR.

Starting the Project

2.6. CONTRACTOR shall start to perform his obligations under the Contract Documents on the date when the Contract Time commences to run. No work shall be done at the site prior to the date on which the Contract Time commences to run.

Before Starting Construction

2.7. Before undertaking each part of the work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. He shall at once report in writing to OWNER any conflict, error, or discrepancy which he may discover; however, he shall not be liable to OWNER for his failure to discover any conflict, error, or discrepancy in the drawings or Specifications.

2.8. Within ten days after delivery of the executed Agreement by OWNER to CONTRACTOR, CONTRACTOR shall submit to OWNER for approval, an estimated progress schedule indicating the starting and completion dates of the various stages of the work, and a preliminary schedule of shop drawing submissions.

2.9. Before starting the work at the site, CONTRACTOR shall furnish OWNER Certificates of Insurance as required by Article 5 of these General Conditions and Article VI of the Agreement. Within twenty days after delivery of the executed Agreement by OWNER to CONTRACTOR, but before starting the work at the site, a conference will be held to review the above schedules, to establish procedures for handling shop drawings and other submissions and for processing Applications for Payment, and to establish a working understanding between the parties as to the Project. Present at the conference will be OWNER or his representative, OWNER, Resident Project Representatives, CONTRACTOR, and his Superintendent.

ARTICLE 3 - CORRELATION, INTERPRETATION, AND INTENT OF CONTRACT DOCUMENTS

3.1. It is the intent of the Specifications and drawings to describe a complete Project to be constructed in accordance with the Contract Documents. The Contract Documents comprise the entire Agreement between OWNER and CONTRACTOR. They may be altered only by a Modification.

3.2. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. If CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, he shall call it to OWNER's attention in writing at once and before proceeding with the work affected thereby; however, he shall not be liable to OWNER or OWNER for his failure to discover any conflict, error, or discrepancy in the Specifications or drawings. In resolving such conflicts, errors, and discrepancies, the Documents shall be given precedence in the following order: Agreement, Modifications, Addenda, Supplementary Conditions, Instructions to Bidders, General Conditions, Specifications, and Drawings. Figure dimensions on drawings shall govern over scale dimensions, and detailed drawings shall govern over general drawings. Any work that may reasonably be inferred from the Specifications or drawings as being required to produce the intended result shall be supplied whether or not it is specifically called for. Work, materials, or equipment described in words which so applied have a well-known technical or trade meaning shall be deemed to refer to such recognized standards.

ARTICLE 4 - AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS

Availability of Lands

4.1. OWNER shall furnish, as indicated in the Contract Documents, and not later than the date when needed by CONTRACTOR, the lands upon which the work is to be done, rights-of-way for access thereto, and such other lands which are designated for the use of CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise specified in the Contract Documents. If CONTRACTOR believes that any delay in OWNER's furnishing these lands or easements entitles him to an extension of the Contract Time, he may make a claim therefor as provided in Article 12. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

Physical Conditions - Surveys and Reports

4.2. Reference is made to the General Requirements (Division 1) of the Specifications for identification of those surveys and investigation reports of subsurface and latent physical conditions at the Project site or otherwise affecting performance of the work which have been relied upon by OWNER in preparation of the drawings and Specifications.

Unforeseen Physical Conditions

4.3. CONTRACTOR shall promptly notify OWNER in writing of any subsurface or latent physical conditions at the site differing materially from those indicated in the Contract Documents. OWNER will promptly investigate those conditions and determine whether further surveys or subsurface tests are necessary. Promptly thereafter, OWNER shall obtain the necessary additional surveys and tests then furnish copies to CONTRACTOR. If OWNER finds that the results of such surveys or tests indicate that there are subsurface or latent physical conditions which differ materially from those intended in the Contract Documents, and which could not reasonably have been anticipated by CONTRACTOR, a Change Order shall be issued incorporating the necessary revisions.

Reference Points

4.4. The construction drawing or OWNER shall provide sufficient data for CONTRACTOR to establish reference points which are necessary to enable CONTRACTOR to proceed with the work. CONTRACTOR shall be responsible for surveying and laying out the work (unless otherwise provided in the Supplementary Conditions), and shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of OWNER. He shall report to OWNER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations. CONTRACTOR shall replace and accurately relocate all reference points so lost, destroyed or moved.

4.5. All elevations shown on the Plans or referred to herein are in feet above mean sea level datum as established by the United States Geological Survey, unless otherwise noted. The CONTRACTOR shall verify all the existing structure locations and elevations at points of connection or possible interference between his work and the existing structures and shall report at once to the OWNER any interferences or discrepancies discovered.

4.6. The CONTRACTOR shall cause to be replaced by a Registered Land Surveyor all survey monuments and/or property irons damaged or destroyed by his operations or the operations of his Subcontractor.

ARTICLE 5 - BONDS AND INSURANCE

Performance, Payment and Other Bonds

5.1. CONTRACTOR shall furnish performance and payment bonds as security for the faithful performance and payment of all his obligations under the Contract Documents. These bonds shall be in amounts at least equal to the Contract Price, and (except as otherwise provided in the Supplementary Conditions) in such form and with such sureties as are licensed to conduct business in the State of Michigan and are named in the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Treasury Department.

5.2. If the surety on any bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located, CONTRACTOR shall within five days thereafter substitute another bond and surety, both of which shall be acceptable to OWNER.

Insurance Required of the CONTRACTOR

5.3. Prior to commencement of the work, the CONTRACTOR shall purchase and maintain during the term of the Project such insurance as will protect him, the OWNER, and/or OWNER'S REPRESENTATIVE from claims arising out of the work described in this Contract and performed by the CONTRACTOR, Subcontractor(s), or Sub-subcontractor(s) consisting of:

5.3.1. Worker's Compensation Insurance including Employer's Liability to cover employee injuries or disease compensable under the Worker's Compensation Statutes of the states in which work is conducted under this Contract; disability benefit laws, if any; or Federal Compensation Acts such as U.S. Longshoremen or Harbor Workers, Maritime Employment, or Railroad Compensation Act(s), if applicable. Self-insurance plans approved by the regulatory authorities in the state in which work on this Project is performed are acceptable.

5.3.2. A Comprehensive General Liability policy to cover bodily injury to persons other than employees and for damage to tangible property, including loss of use thereof, including the following exposures:

- (a) all premises and operations;
- (b) explosion, collapse, and underground damage;
- (c) CONTRACTOR's Protective Coverage for independent CONTRACTORS and subcontractors employed by him;

- (d) Contractual Liability for the obligation assumed in the indemnification or hold harmless agreement found in the General Conditions section of this Contract;
- (e) the usual Personal Injury Liability endorsement with no exclusions pertaining to employment;
- (f) products and completed operations coverage -- this coverage shall extend through the Contract Guarantee period.

5.3.3. A Comprehensive Automobile Liability policy to cover bodily injury and property damage arising out of the ownership, maintenance, or use of any motor vehicle, including owned, non-owned, and hired vehicles. In light of standard policy provisions concerning:

- (a) loading and unloading; and
- (b) definitions pertaining to motor vehicles licensed for road use vs. unlicensed or self-propelled construction equipment, it is strongly recommended that the Comprehensive General Liability and the Comprehensive Auto Liability be written by the same insurance carrier, though not necessarily in one policy.

5.3.4. The CONTRACTOR will purchase for the OWNER an OWNER's Protective Liability policy to protect the OWNER, the OWNER, their consultants, agents, employees, and such public corporations in whose jurisdiction the work is located for their contingent liability for work performed by the CONTRACTOR, the Subcontractor(s), and the Sub-subcontractor(s) under this Contract.

5.3.5. The CONTRACTOR shall purchase a Builder's Risk-Installation Floater in a form acceptable to the OWNER covering property of the Project for the full cost of replacement as of the time of any loss which shall include as named insureds:

- (a) the CONTRACTOR;
- (b) all Subcontractors;
- (c) all Sub-subcontractors;
- (d) the OWNER, the OWNER's Representative;

as their respective interests may prove to be at the time of loss, covering insurable property which is the subject of this Contract, whether in place, stored at the job site, stored elsewhere, or in transit at the risk of the insured(s). Coverage shall be effected on an "All Risk" form including, but not limited to, the perils of fire, wind, vandalism, collapse, theft, and earthquake, with exclusions normal to the coverage. The CONTRACTOR may arrange for such deductibles as he deems to be within his ability of self-assume, but he will be held solely responsible for the amount of such deductible and for any non-insurance penalties. Any insured loss shall be adjusted with the OWNER and the CONTRACTOR and paid to the OWNER and CONTRACTOR as trustee for the other insureds.

5.3.6. Umbrella or Excess Liability: The OWNER or its representative may, for certain projects, require limits higher than those stated in Paragraph 5.4. which follows. The CONTRACTOR is granted the option of arranging coverage under a single policy for the full limit required or by a combination of underlying policies with the balance provided by an Excess or Umbrella Liability policy equal to the total limit(s) requested. Umbrella or Excess policy wording shall be at least as broad as the primary or underlying policy(ies) and shall apply both to the CONTRACTOR's general liability and to his automobile liability insurance.

5.3.7. Railroad Protective Liability: Where such an exposure exists, the CONTRACTOR will provide coverage in the name of each railroad company having jurisdiction over rights-of-way across which work under the Contract is to be performed. The form of policy and the limits of liability shall be determined by the railroad company(ies) involved. See Supplemental General Conditions for limits and coverage requested.

Limits of Liability

5.4. The required limits of liability for insurance coverages requested in Paragraph 5.3 shall be NOT LESS than the following:

5.4.1. Worker's Compensation:

Coverage A - Compensation	Statutory
Coverage B - Employer's Liability	\$100,000

5.4.2. Comprehensive General Liability:

Bodily Injury - Each Occurrence	\$1,000,000
Bodily Injury - Aggregate (Completed Operations)	\$1,000,000
Property Damage - Each Occurrence	\$1,000,000
Property Damage - Aggregate or Combined Single Limit	\$1,000,000

5.4.3. Comprehensive Automobile Liability:

Bodily Injury	\$1,000,000
Property Damage or Combined Single Limit	\$1,000,000

5.4.4. Umbrella or Excess Liability: \$3,000,000

Insurance - Other Requirements

5.5. The following conditions shall also be required in regard to insurance coverage.

5.5.1. Notice of Cancellation or Intent Not to Renew: Policies will be endorsed to provide that at least 30 days written notice of cancellation or of intent not to renew shall be given to the OWNER and to the OWNER.

5.5.2. Evidence of Coverage: Prior to commencement of the work, the CONTRACTOR shall furnish to the OWNER, Certificates of Insurance in force on the OWNER's form of certificate provided. Other forms of certificate are acceptable only if:

- (a) they include all of the items prescribed in the OWNER's form of certificate, including agreement to cancellation provisions outlined in Paragraph 5.5.1. above; and
- (b) they have written approval of the OWNER. The OWNER reserves the right to request complete copies of policies if deemed necessary to ascertain details of coverage not provided by the certificates. Such policy copies shall be "originally signed copies," and so designated.

5.5.3. Evidence of Insurance Required for the CONTRACTOR:

- (1) Worker's Compensation and Employer's Liability Comprehensive General Liability including:
 - (a) all premises and operations;
 - (b) explosion, collapse, and underground damage;
 - (c) CONTRACTOR's Protective;
 - (d) Contractual Liability for obligations assumed in the Indemnification-Hold Harmless Agreement of this Contract;

- (e) Personal Injury Liability;
- (f) products and completed operations;
- (2) Comprehensive Automobile Liability including owned, non-owned, and hired vehicles
- (3) Umbrella or Excess Liability

5.5.4. Qualification of Insurers: In order to determine financial strength and reputation of insurance carriers, all companies providing the coverages required shall be licensed or approved by the Insurance Bureau of the State of Michigan and shall have a financial rating not lower than XI and a Policyholder's service rating no lower than B+ as listed in A.M. Best's Key Rating Guide, current edition. Companies with ratings lower than B+:XI will be acceptable only upon written consent of the OWNER.

Additional Bonds and Insurance

5.6. Prior to delivery of the executed Agreement by OWNER to CONTRACTOR, OWNER may require CONTRACTOR to furnish such other bonds and such additional insurance, in such form and with such sureties or insurers as OWNER may require. If such other bonds or such other insurance is specified by written instructions given prior to Opening of Bids, the premiums shall be paid by CONTRACTOR; if subsequent thereto, they shall be paid by OWNER (except as otherwise provided in Article 11).

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

Supervision and Superintendence

6.1. CONTRACTOR shall supervise and direct the work efficiently and with his best skill and attention. He shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction, but he shall not be solely responsible for the negligence of others in the design or selection of a specific means, method, technique, sequence, or procedure of construction which is indicated in and required by the Contract Documents. CONTRACTOR shall be responsible to see that the finished work complies accurately with the Contract Documents.

6.2. CONTRACTOR shall keep on the work site at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the site and shall have authority to act on behalf of the CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

Labor, Materials, and Equipment

6.3. CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the work and perform construction as required by the Contract Documents. He shall at all times maintain good discipline and order at the site.

6.4. CONTRACTOR shall furnish all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water and sanitary facilities and all other facilities and incidentals necessary for the execution, testing, initial operation, and completion of the work.

6.5. All materials and equipment shall be new, except as otherwise provided in the Contract Documents. If required by OWNER, CONTRACTOR shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

6.6. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator, or processors, except as otherwise provided in the Contract Documents.

Substitute Materials or Equipment

6.7. Whenever a material, article, or piece of equipment is identified on the drawings or Specifications by reference to brand name or catalog number, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality, and function may be considered.

The CONTRACTOR may recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the Contract Documents by reference to brand name or catalog number, and if, in the opinion of the OWNER, such material, article, or piece of equipment is of equal substance and function to that specified, the OWNER may approve its substitution and use by the CONTRACTOR. Any cost differential shall be deductible from the Contract Price and the Contract Documents shall be appropriately modified by Change Order. The CONTRACTOR warrants that if substitutes are approved, no major changes in the function or general design of the project will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the CONTRACTOR without a change in the Contract Price or Contract Time.

Concerning Subcontractors

6.8. CONTRACTOR shall not employ any Subcontractor or other person or organization (including those who are to furnish the principal items of materials or equipment), whether initially or as a substitute, against whom OWNER may have reasonable objection. A Subcontractor or other person or organization identified in writing to OWNER prior to the Notice of Award will be deemed acceptable to OWNER. Acceptance of any Subcontractor, other person, or organization by OWNER shall not constitute a waiver of any right of OWNER to reject defective work or work not in conformance with the Contract Documents. If OWNER after due investigation has reasonable objection to any Subcontractor, other person or organization proposed by CONTRACTOR after the Notice of Award, CONTRACTOR shall submit an acceptable substitute and the Contract Price shall be increased or decreased by the difference in cost occasioned by such substitution, and an appropriate Change Order shall be issued. CONTRACTOR shall not be required to employ any Subcontractor, other person or organization against whom he has reasonable objection. CONTRACTOR shall not without the consent of OWNER make any substitution for any CONTRACTOR, other person, or organization that has been accepted by OWNER and determines that there is good cause for doing so.

Nothing contained in these Contract Documents shall create any contractual relationship between the OWNER and any Subcontractor or Sub-Subcontractor.

6.9. CONTRACTOR shall be fully responsible for all acts and omissions of his Subcontractors and of persons and organizations directly or indirectly employed by them and of persons and organizations for whose acts any of them may be liable to the same extent that he is responsible for the acts and omissions of persons directly employed by him. Nothing in the Contract Documents shall create any contractual relationship between OWNER and any Subcontractor or other person or organization having a direct contract with CONTRACTOR, nor shall it create any obligation on the part of OWNER to pay or to see to the payment of any monies due any Subcontractor or other person or organization, except as may otherwise be required by law. OWNER may furnish to any Subcontractor or other person or organization, to the extent practicable, evidence of amounts paid to CONTRACTOR on account of specific work done in accordance with the Schedule of Values.

6.10. The divisions and sections of the Specifications and the identifications of any drawings shall not control CONTRACTOR in dividing the work among Subcontractors or delineating the work to be performed by any specific trade.

6.11. CONTRACTOR agrees to bind specifically every Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of OWNER.

6.12. All work performed for CONTRACTOR by a Subcontractor shall be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which shall contain provisions that waive all rights the contracting parties may have against one another for damages caused by fire or other perils covered by insurance provided in accordance with Article 5 of these General Conditions and Article VII of the Agreement, except such rights as they may have to the proceeds of such insurance held by OWNER as trustee under Paragraph 5.3.5.

Patent Fees and Royalties

6.13. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the work and if to the actual knowledge of OWNER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. CONTRACTOR shall indemnify and hold harmless OWNER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses and expenses (including attorney's fees) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the work or resulting from the incorporation in the work of any invention, design, process, product or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights.

Permits

6.14. CONTRACTOR shall obtain and pay for all construction permits and licenses and shall pay all governmental charges and inspection fees necessary for the prosecution of the work, which are applicable at the time of his Bid. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall also pay all public utility charges.

Laws and Regulations

6.15. CONTRACTOR shall give all notices and comply with all laws, ordinances, rules and regulations applicable to the work. If CONTRACTOR observes that the Specifications or drawings are at variance therewith, he shall give OWNER prompt written notice thereof, and any necessary changes shall be adjusted by an appropriate Modification. If CONTRACTOR performs any work knowing it to be contrary to such laws, ordinances, rules, and regulations, and without such notice to OWNER, he shall bear all costs arising therefrom; however, it shall not be his primary responsibility to make certain that the Specifications and drawings are in accordance with such laws, ordinances, rules and regulations.

Taxes

6.16. CONTRACTOR shall pay all sales, consumer use, and other Federal, State and Local taxes required to be paid by him in accordance with the law of the place where the work is to be performed.

Use of Premises

6.17. CONTRACTOR shall confine his equipment, the storage of materials and equipment, and the operations of his workmen to areas permitted by law, ordinances, permits, or the requirements of the Contract Documents, and shall not unreasonably encumber the premises with materials or equipment. CONTRACTOR shall restore the areas to their original condition.

6.18. CONTRACTOR shall not load nor permit any part of any structure to be loaded with weights that will endanger the structure, nor shall he subject any part of the work to stresses or pressures that will endanger it.

Record Drawings

6.19. CONTRACTOR shall keep one record copy of all Specifications, drawings, Addenda, Modifications, and shop drawings at the site in good order and annotated to show all changes made during the construction process. These shall be available to OWNER and shall be delivered to him for OWNER upon completion of the Project. (Note: Further provisions in respect of such record drawings may be included in the General Requirements (Division 1).)

Safety and Protection

6.20. CONTRACTOR shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work. He shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:

- (a) all employees on the work and other persons who may be affected thereby;
- (b) all the work and all materials or equipment to be incorporated therein, whether in storage on or off the site;
- (c) other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

CONTRACTOR shall comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. He shall erect and maintain, as required by the conditions and progress of the work, all necessary safeguards for its safety and protection. He shall notify OWNERS of adjacent utilities when prosecution of the work may affect them. All damage, injury or loss to any property referred to in Paragraph 6.20(b) or 6.20(c) caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR; except damage or loss attributable to the fault of drawings or Specifications or to the acts or omissions of OWNER or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR. CONTRACTOR's duties and responsibilities for the safety and protection of the work shall continue until such time as all the work is completed and OWNER has issued a notice to OWNER and CONTRACTOR in accordance with Paragraph 14.13 that work is acceptable.

6.21. CONTRACTOR shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be CONTRACTOR's superintendent unless otherwise designated in writing by CONTRACTOR to OWNER.

6.22. It is the CONTRACTOR's sole responsibility to comply with the rules and regulations of the Occupational Safety and Health Act (OSHA). OWNER shall not be responsible for safety on the job.

Emergencies

6.23. In emergencies affecting the safety of persons or the work or property at the site or adjacent thereto, CONTRACTOR without special instruction or authorization from OWNER, is obligated to act, at his discretion, to prevent threatened damage, injury, or loss. He shall give OWNER prompt written notice of any significant changes in the work or deviations from the Contract Documents caused thereby, and a Change Order shall thereupon be issued covering the changes and deviations involved. If CONTRACTOR believes that additional work done by him in an emergency which arose from causes beyond his control entitles him to an increase in

the Contract Price or an extension of the Contract Time, he may make a claim therefor as provided in Articles 11 and 12.

Shop Drawings and Samples

6.24. After checking and verifying all field measurements, CONTRACTOR shall submit to OWNER for approval, in accordance with the accepted schedule of Shop Drawing submissions (see paragraph 2.8) three copies (or at OWNER's option, one reproducible copy) of all Shop Drawings, which shall have been checked by and stamped with the approval of CONTRACTOR and identified as OWNER may require. The data shown on the shop drawings will be complete with respect to dimensions, design criteria, materials of construction, and the like to enable OWNER to review the information as required.

6.25. CONTRACTOR shall also submit to OWNER for approval with such promptness as to cause no delay in work, all samples required by the Contract Documents. All samples will have been checked by and stamped with the approval of CONTRACTOR, identified clearly as to material, manufacturer, any pertinent catalog numbers, and the use for which intended.

6.26. At the time of each submission, CONTRACTOR shall in writing call OWNER's attention to any deviations that the Shop Drawing or sample may have from the requirements of the Contract Documents.

6.27. OWNER will review and approve with reasonable promptness Shop Drawings and samples, but his review and approval shall be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents. The approval of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make any corrections required by OWNER and shall return the required number of correct copies of shop drawings and resubmit new samples, until approved. CONTRACTOR shall direct specific attention in writing or on resubmitted shop drawings to revisions other than the corrections called for by OWNER on previous submissions. CONTRACTOR's stamp of approval on any shop drawing or sample shall constitute a representation to OWNER that CONTRACTOR has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data or he assumes full responsibility for doing so, and that he has reviewed or coordinated each shop drawing or sample with the requirements of the work and the Contract Documents.

6.28. Where a shop drawing or sample submission is required by the Specifications, no related work shall be commenced until the submission has been approved by OWNER. A copy of each approved shop drawing and each approved sample shall be kept in good order by CONTRACTOR at the site and shall be available to OWNER.

6.29. OWNER's approval of shop drawings or samples shall not relieve CONTRACTOR from his responsibility for any deviations from the requirements of the Contract Documents unless CONTRACTOR has in writing called OWNER's attention to such deviation at the time of submission and OWNER has given written approval to the specific deviation, nor shall any approval by OWNER relieve CONTRACTOR from responsibility for errors or omissions in the shop drawings.

(Note: Further provisions in respect to shop drawings and samples may be included in the General Requirements (Division 1).)

Cleaning

6.30. CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the work, and at the completion of the work he shall remove all waste materials, rubbish, and debris from and about the premises as well as all tools, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by OWNER. CONTRACTOR shall restore to their original condition those portions of the site not designated for alteration by the Contract

Documents. (Note: Further provisions in respect of cleaning may be included in the General Requirements (Division 1).)

Indemnification

6.31. CONTRACTOR shall indemnify and hold harmless OWNER and their agents, directors, officers, and employees from and against all claims, damages, losses and expenses including attorneys' fees arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense is:

- (a) attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom; and
- (b) caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

6.32. In any and all claims against OWNER or any of their agents or directors, officers, and employees by any employee of CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.31 shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for CONTRACTOR, or any Subcontractor under Worker's Compensation Acts, disability benefit acts, or other employee benefit acts.

6.33. The obligations of CONTRACTOR under Paragraph 6.30 shall not extend to the liability of OWNER, his agents or directors, officers, and employees arising out of:

- (a) the preparation of approval of maps, drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
- (b) the giving of or the failure to give directions or instructions by OWNER, his agents or directors, officers and employees provided such giving or failure to give is the primary cause of injury or damage.

ARTICLE 7 - WORK BY OTHERS

7.1. OWNER may perform additional work related to the Project by himself, or he may let other direct contracts therefor which shall contain General Conditions similar to these. CONTRACTOR shall afford the other contractors who are parties to such direct contracts (or OWNER, if he is performing the additional work himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of work, and shall properly connect and coordinate his work with theirs.

7.2. If any part of CONTRACTOR's work depends for proper execution or results upon the work of any such other CONTRACTOR (or OWNER), CONTRACTOR shall inspect and promptly report to OWNER in writing any defects or deficiencies in such work that render it unsuitable for such proper execution and results. His failure so to report shall constitute an acceptance of the other work as fit and proper for the relationship of his work except as to defects and deficiencies which may appear in the other work after the execution of his work.

7.3. CONTRACTOR shall do all cutting, fitting, and patching of his work that may be required to make its several parts come together properly and fit it to receive or be received by such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of OWNER and of the other contractors whose work will be affected.

7.4. If the performance of additional work by other contractors or OWNER is not noted in the Contract Documents prior to the execution of the contract, written notice thereof shall be given to CONTRACTOR prior to starting any such additional work. If CONTRACTOR believes that the performance of such additional work

by OWNER or others involves him in additional expense or entitles him to an extension of the Contract Time, he may make a claim therefor as provided in Articles 11 and 12.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.1. At any given time, OWNER may issue communications to CONTRACTOR through an OWNER's Representative hired to act on his behalf.

8.2. OWNER shall furnish the data required of him under the Contract Documents promptly and shall make payments to CONTRACTOR promptly after they are due as provided in Paragraphs 14.4 and 14.13.

8.3. OWNER's duties in respect to providing lands and easements and providing OWNERing surveys to establish reference points are set forth in Paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER's identifying and making available to CONTRACTOR copies of surveys and investigation reports of subsurface and latent physical conditions at the site or otherwise affecting performance of the work which have been relied upon by OWNER in preparing the drawings and Specifications.

8.4. OWNER's responsibilities in respect of liability and property insurance are set forth in Article 5.

8.5. In addition to his rights to request changes in the work in accordance with Article 10, OWNER (especially in certain instances as provided in Paragraph 10.4) shall be obligated to execute Change Orders.

8.6. OWNER's responsibility in respect of certain inspections, tests, and approvals is set forth in Paragraph 13.2.

8.7. In connection with OWNER's right to stop work or suspend work, see Paragraphs 13.8 and 15.1. Paragraph 15.2 deals with OWNER's right to terminate services of CONTRACTOR under certain circumstances.

8.8. Under some conditions a CONSULTANT may be contracted by OWNER to serve as OWNER's representative during the construction period.

ARTICLE 9 - OWNER'S STATUS DURING CONSTRUCTION

OWNER's Representative

9.1. The duties and responsibilities and the limitations of authority of OWNER's representative during construction are set forth in Articles 1 through 17 of these General Conditions and shall not be extended without written consent of OWNER.

Visits to Site

9.2. OWNER may make periodic visits to the site to observe the progress and quality of the executed work and to determine, in general, if the work is proceeding in accordance with the Contract Documents. He will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the work. His efforts will be directed toward providing assurance for OWNER that the completed Project will conform to the requirements of the Contract Documents. On the basis of his on-site observations as an experienced and qualified design professional, he will keep OWNER informed of the progress of the work and will endeavor to guard OWNER against defects and deficiencies in the work of CONTRACTORS.

Clarifications and Interpretations

9.3. OWNER will issue with reasonable promptness such written clarifications or interpretations of the Contract Documents (in the form of drawings or otherwise) as he may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If CONTRACTOR

believes that a written clarification and interpretation entitles him to an increase in the Contract Price, he may make a claim therefor as provided in Article 11.

Rejecting Defective Work

9.4. OWNER will have authority to disapprove or reject work which is "defective" (which term is hereinafter used to describe work that is unsatisfactory, faulty, or defective, or does not conform to the requirements of the Contract Documents or does not meet the requirements of the inspection, test, or approval referred to in Paragraph 13.2 or has been damaged prior to approval of final payment). He will also have authority to require special inspection or testing of the work as provided in Paragraph 13.7, whether or not the work is fabricated, installed, or completed.

Shop Drawings, Change Orders, and Payments

9.5. In connection with OWNER's responsibility for shop drawings and samples, see Paragraphs 6.23 through 6.28 inclusive.

9.6. In connection with OWNER's responsibility for Change Orders, see Articles 10, 11, and 12.

9.7. In connection with OWNER's responsibilities in respect of Applications for Payment, etc., see Article 14.

Resident Project Representatives

9.8. If the OWNER authorizes the OWNER, the OWNER shall provide one or more full-time resident project representatives to assist the OWNER in carrying out his responsibilities at the site. The duties, responsibilities, and limitation of authority of any such resident project representative shall be to endeavor to further protect the OWNER against defects and deficiencies in the work. But the furnishing of such resident project representatives shall not make the OWNER responsible for construction means, methods, techniques, sequences, or procedures or for any safety precautions or programs in connection with the work.

Decisions on Disagreements

9.9. OWNER will be the interpreter of the requirements of the Contract Documents and the judge of the performance thereunder. In his capacity as interpreter and judge he will exercise his best efforts to insure faithful performance by both OWNER and CONTRACTOR. He will not show partiality to either and will not be liable for the result of any interpretation or decision rendered in good faith. Claims, disputes, and other matters relating to the execution and progress of the work or the interpretation of or performance under the Contract Documents shall be referred to OWNER for decision, which he will render in writing within a reasonable time.

Limitations on OWNER's Responsibilities

9.10. Neither OWNER's authority to act under this Article 9 or elsewhere in the Contract Documents nor any decision made by him in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of OWNER to CONTRACTOR, any Subcontractor, any materialman, fabricator, supplier, or any of their agents or employees or any other person performing any of the work.

9.11. OWNER will not be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, and he will not be responsible for CONTRACTOR's failure to perform the work in accordance with the Contract Documents.

9.12. OWNER will not be responsible for the acts or omissions of CONTRACTOR or any Subcontractors, or any of his or their agents or employees, or any other persons at the site or otherwise performing any of the work.

ARTICLE 10 - CHANGES IN THE WORK

10.1. Without invalidating the Agreement, OWNER may, at any time or from time to time, order additions, deletions, or revisions in the work; these will be authorized by Change Orders. Upon receipt of a Change Order, CONTRACTOR shall proceed with the work involved. All such work shall be executed under the applicable conditions of the Contract Documents. If any Change Order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made as provided in Article 11 or Article 12 on the basis of a claim made by either party.

10.2. OWNER may authorize minor changes or alterations in the work not involving extra cost and not inconsistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order. If CONTRACTOR believes that any minor change or alteration authorized by OWNER entitles him to an increase in the Contract Price, he may make a claim therefor as provided in Article 11.

10.3. Additional work performed by CONTRACTOR without authorization of a Change Order will not entitle him to an increase in the Contract Price or an extension of the Contract Time, except in the case of an emergency and as provided in Paragraphs 10.2 and 13.7.

10.4. OWNER shall execute appropriate Change Orders covering changes in the work to be performed as provided in Paragraph 4.3, and work performed in an emergency as provided in Paragraph 6.23 and any other claim of CONTRACTOR for a change in the Contract Time or the Contract Price which is then approved by OWNER.

10.5. It is CONTRACTOR's responsibility to notify his Surety of any changes affecting the general Scope of Work or change in the Contract Price and the amount of the applicable bonds shall be adjusted accordingly. CONTRACTOR shall furnish proof of such adjustment to OWNER.

ARTICLE 11 - CHANGE OF CONTRACT PRICE

11.1. The Contract Price constitutes the total compensation payable to CONTRACTOR for performing the work. All duties, responsibilities, and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

11.2. The Contract Price may only be changed by a Change Order. Any claim for an increase in the Contract Price shall be based on written notice delivered to OWNER within fifteen days of the occurrence of the event giving rise to the claim. Notice of the amount of the claim with supporting data shall be delivered within forty-five days of such occurrence unless OWNER allows an additional period of time to ascertain accurate cost data. Any claims, not delivered to OWNER within forty-five days or within any additional period allowed by OWNER in writing, shall be forfeited by the CONTRACTOR and shall not be honored by the OWNER. All claims for adjustments in the Contract Price shall be determined OWNER and CONTRACTOR cannot otherwise agree on the amount involved. Any change in the Contract Price resulting from any such claim shall be incorporated in a Change Order.

11.3. The value of any work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

- (a) where the work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved;
- (b) by mutual acceptance of a lump sum;
- (c) on the basis of the Cost of the Work (determined as provided in Paragraph 11.4.).

Cost of the Work

11.4. The term Cost of the Work means the sum of all costs necessarily incurred and paid by the CONTRACTOR in the proper performance of the work. Except as may be otherwise agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in Paragraph 11.5.

11.4.1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the work under schedules of job classifications agreed upon by OWNER and CONTRACTOR: Payroll costs for employees not employed full time on the work shall be apportioned on the basis of their time spent on the work. Payroll costs shall include, but not be limited to salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, worker's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site. The expenses of performing work after regular working hours, on Sunday or legal holidays shall be included in the above to the extent authorized by the OWNER.

11.4.2. Cost of all materials and equipment furnished and incorporated in the work, including costs of transportation and storage thereof, and manufacturers' field services required in connection therewith: All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds, and all returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

11.4.3. Payments made by CONTRACTOR to the Subcontractors for work performed by Subcontractors: If required by OWNER, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to him and shall deliver such bids to OWNER who will then determine which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work Plus a Fee, the Cost of the Work shall be determined in accordance with Paragraphs 11.4 and 11.5. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

11.4.4. Costs of special consultants (including, but not limited to, engineers, landscape architects, architects, testing laboratories, surveyors, lawyers, and accountants) employed for services specifically related to the work.

11.4.5. Supplemental costs including the following:

- (a) The proportion of necessary transportation, traveling and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the work;
- (b) Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workmen, which are consumed in the performance of the work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR;
- (c) Sales, use or similar taxes related to the work, and for which CONTRACTOR is liable, imposed by any governmental authority;
- (d) Deposits lost for causes other than CONTRACTOR's negligence, royalty payments and fees for permits and licenses;
- (e) Losses, damages and expenses, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the execution of and to the work, provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's Fee. If, however, any such loss or damage requires reconstruction and

CONTRACTOR is placed in charge thereof, he shall be paid for his services a fee proportionate to that stated in Paragraph 11.6.2;

- (f) The cost of utilities, fuel and sanitary facilities at the site;
- (g) Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the work;
- (h) Cost of premiums for bonds and insurance which OWNER is required to pay.

11.5. The term Cost of the Work shall not include any of the following:

11.5.1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, landscape architects, architects, estimators, lawyers, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in his principal or a branch office for general administration of the work and not specifically included in the schedule referred to in Subparagraph 11.4.1. -- all of which are to be considered administrative costs covered by the CONTRACTOR's Fee.

11.5.2. Expenses of CONTRACTOR's principal and branch offices other than his office at the site.

11.5.3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the work and charges against CONTRACTOR for delinquent payments.

11.5.4. Cost of premiums for all bonds and for all insurance policies whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except as otherwise provided in Subparagraph 11.4.5(h)).

11.5.5. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

11.5.6. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 11.4.

11.5.7. Temporary shut down of work due to unknown existing condition. CONTRACTOR shall not charge OWNER for equipment of labor for idled operations due to unforeseen condition at the work site.

CONTRACTOR's Fee

11.6. The CONTRACTOR's Fee which shall be allowed to CONTRACTOR for his overhead and profit shall be determined as follows:

11.6.1. A fixed mutually acceptable. If no mutually acceptable fixed fee can be agreed upon, then,

11.6.2. A fee based on the following percentages of the various portions of the Cost of the Work:

- (a) for costs incurred under Paragraphs 11.4.1. and 11.4.2.; the CONTRACTOR's Fee shall be ten (10) percent;
- (b) for costs incurred under Paragraph 11.4.3., the CONTRACTOR's Fee shall be five (5) percent; and if a subcontract is on the basis of Cost of the Work Plus a Fee, the maximum allowable to the Subcontractor as a fee for overhead and profit shall be ten (10) percent; and
- (c) no fee shall be payable on the basis of costs itemized under Paragraphs 11.4.4., 11.4.5., and 11.5.

11.7. The amount of credit to be allowed by CONTRACTOR to OWNER for any such change which results in a net decrease in cost, will be the amount of the actual net decrease. When both additions and credits are involved in any one change, the combined overhead and profit shall be figured on the basis of the net increase, if any.

11.8. Whenever the cost of any work is to be determined pursuant to Paragraphs 11.4 and 11.5, CONTRACTOR will submit in form prescribed by OWNER an itemized cost breakdown together with supporting data.

Cash Allowances

11.9. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the work so covered to be done by such materialmen, suppliers, or Subcontractors and for such sums within the limit of the allowances as OWNER may approve. Upon final payment, the Contract Price shall be adjusted as required and an appropriate Change Order issued. CONTRACTOR agrees that the original Contract Price includes such sums as he deems proper for costs and profit on account of cash allowances. No demand for additional cost or profit in connection therewith will be allowed.

ARTICLE 12 - CHANGE OF THE CONTRACT TIME

12.1. The Contract Time may only be changed by a Change Order. Any claim for an extension in the Contract Time shall be based on written notice delivered to OWNER within fifteen days of the occurrence of the event giving rise to the claim. Notice of the extent of the claim with supporting data shall be delivered within forty-five days of such occurrence unless OWNER allows an additional period of time to ascertain more accurate data. All claims for adjustment in the Contract Time shall be determined by OWNER. Any change in the Contract Time resulting from any such claim shall be incorporated in a Change Order.

12.2. The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of CONTRACTOR if he makes a claim therefor as provided in Paragraph 12.1. Such delays shall include, but not be restricted to, acts or neglect by any separate CONTRACTOR employed by OWNER, fires, floods, labor disputes, epidemics, abnormal weather conditions, or Acts of God.

12.3. All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article 12 shall not exclude recovery for damages (including compensation for additional professional services) for delay by either party.

ARTICLE 13 - WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

Warranty and Guarantee

13.1. CONTRACTOR warrants and guarantees to OWNER that all materials and equipment will be new unless otherwise specified and that all work will be of good quality and free from faults or defects and in accordance with the requirements of the Contract Documents and of any inspections, tests, or approvals referred to in Paragraph 13.2. All unsatisfactory work, all faulty or defective work, and all work not conforming to the requirements of the Contract Documents at the time of acceptance thereof or of such inspections, tests, or approvals, shall be considered defective. Prompt notice of all defects shall be given to CONTRACTOR. All defective work, whether or not in place, may be rejected, corrected, or accepted as provided in this Article 13.

Tests and Inspections

13.2. If the Contract Documents, laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction require any work to specifically be inspected, tested, or approved by some public body,

CONTRACTOR shall assume full responsibility therefor, pay all costs in connection therewith and furnish OWNER the required certificates of inspection, testing, or approval. All other inspections, tests and approvals required by the Contract Documents shall be performed by organizations acceptable to OWNER and CONTRACTOR and the costs thereof shall be borne by CONTRACTOR unless otherwise specified.

13.3. CONTRACTOR shall give OWNER timely notice of readiness of the work for all inspections, tests, or approvals. If any such work required so to be inspected, tested, or approved is covered without written approval of OWNER, it must, if requested by OWNER, be uncovered for observation, and such uncovering shall be at CONTRACTOR's expense unless CONTRACTOR has given OWNER timely notice of his intention to cover such work and OWNER has not acted with reasonable promptness in response to such notice.

13.4. Neither observations by OWNER, nor inspections, tests, or approvals by persons other than CONTRACTOR shall relieve CONTRACTOR from his obligations to perform the work in accordance with the requirements of the Contract Documents.

Access to Work

13.5 OWNER and his representatives and other representatives of OWNER will at reasonable times have access to the work. CONTRACTOR shall provide proper and safe facilities for such access and observation of the work and also for any inspection or testing thereof by others.

Uncovering Work

13.6. If any work is covered contrary to the written request of OWNER, it must, if requested by OWNER, be uncovered for his observation and replaced at CONTRACTOR's expense.

13.7. If any work has been covered which OWNER has not specifically requested to observe prior to its being covered, or if OWNER considered it necessary or advisable that covered work be inspected or tested by others, CONTRACTOR at OWNER's request shall uncover, expose, or otherwise make available for observation, inspection, or testing as OWNER may require, that portion of the work in question, furnishing all necessary labor, material, and equipment. If it is found that such work is defective, CONTRACTOR shall bear all the expenses of such uncovering, exposure, observation, inspection, and testing and of satisfactory reconstruction, including compensation for additional professional services, and an appropriate deductive Change Order shall be issued. If, however, such work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction if he makes a claim therefor as provided in Articles 11 and 12.

OWNER May Stop the Work

13.8. If the work is defective, or CONTRACTOR fails to supply sufficient skilled workmen or suitable materials or equipment, or if CONTRACTOR fails to make prompt payments to Subcontractors or for labor, materials, or equipment, OWNER may order CONTRACTOR to stop the work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR or any other party.

Correction or Removal of Defective Work

13.9. If required by OWNER prior to approval of final payment, CONTRACTOR shall promptly, without cost to OWNER and as specified by OWNER, either correct any defective work, whether or not fabricated, installed or completed, or, if the work has been rejected by OWNER, remove it from the site and replace it with non-defective work. If CONTRACTOR does not correct such defective work or remove and replace such rejected work within a reasonable time, all as specified in a written notice from OWNER, OWNER may have the deficiency corrected or the rejected work removed and replaced. All direct and indirect costs of such correction or removal and replacement, including compensation for additional professional services, shall be

paid by CONTRACTOR, and an appropriate deductive Change Order shall be issued. CONTRACTOR shall also bear the expenses of making good all work of others destroyed or damaged by his correction, removal or replacement of his defective work.

One-Year Correction Period

13.10. If, after the approval of final payment and prior to the expiration of one year after the date of Substantial Completion or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, any work is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions, either correct such defective work, or, if it has been rejected by OWNER, remove it from the site and replace it with non-defective work. If CONTRACTOR does not promptly comply with the terms of such instructions, OWNER may have the defective work corrected or the rejected work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, shall be paid by CONTRACTOR.

Acceptance of Defective Work

13.11. If, instead of requiring correction or removal and replacement of defective work, OWNER (and, prior to approval and final payment) prefers to accept it, they may do so. In such case, if acceptance occurs prior to approval of final payment, a Change Order shall be issued incorporating the necessary revisions in the Contract Documents, including appropriate reduction in the Contract Price; or, if the acceptance occurs after approval of final payment, an appropriate amount shall be paid by CONTRACTOR to OWNER.

Neglected Work by CONTRACTOR

13.12. If CONTRACTOR should fail to prosecute the work in accordance with the Contract Documents, including any requirements of the progress schedule, OWNER, after seven days written notice to CONTRACTOR may, without prejudice to any other remedy he may have, make good such deficiencies and the cost thereof (including compensation for additional professional services) shall be charged against CONTRACTOR if OWNER approves such action, in which case a Change Order shall be issued incorporating the necessary revisions in the Contract Documents including an appropriate reduction in the Contract Price. If the payments then or thereafter due CONTRACTOR are not sufficient to cover such amount, CONTRACTOR shall pay the difference to OWNER.

ARTICLE 14 - PAYMENTS AND COMPLETION

Schedules

14.1. At least ten days prior to submitting the first application for a progress payment, CONTRACTOR shall submit a progress schedule, a final schedule of shop drawing submissions and a schedule of values of the work. These schedules shall be satisfactory in form and substance to OWNER. The schedule of values shall include quantities and unit prices aggregating the Contract Price, and shall subdivide the work into component parts in sufficient detail to serve as the basis for progress payments during construction. Upon approval of the schedules of values by OWNER, it shall be incorporated into the form of Application for Payment furnished by OWNER.

Application for Progress Payment

14.2. At least ten days before each progress payment falls due (but not more often than once a month), CONTRACTOR shall submit to OWNER for review an Application for Payment filled out and signed by CONTRACTOR covering the work completed as of the date of the application and accompanied by such data and schedules as OWNER may reasonably require. If payment is requested on the basis of material and equipment not incorporated in the work but delivered and suitably stored at the site or at another location

agreed to in writing, the Application for Payment shall also be accompanied by such data, satisfactory to OWNER, as will establish OWNER's title to the material and equipment and protect his interest therein, including applicable insurance. Each subsequent Application for Payment shall include an affidavit of CONTRACTOR stating that all previous progress payments received on account of the work have been applied to discharge in full all of CONTRACTOR's obligations reflected in prior Applications for Payment. Except where greater retention is necessary pursuant to definite circumstances specifically provided for in the construction contract, the following schedule of retained amounts from progress payments shall be followed:

- (a) Not more than 10% of the dollar value of all work in place until work is 50% in place.
- (b) After the work is 50% in place, additional retainage shall not be withheld unless the OWNER determines that the CONTRACTOR is not making satisfactory progress, or for other specific cause relating to the CONTRACTOR's performance under the Contract. If the OWNER so determines, the OWNER may retain not more than 10% of the dollar value of work more than 50% in place.
- (c) The retained funds shall not exceed the pro rata share of the OWNER's matching requirement under the construction contract and shall not be co-mingled with other funds of the OWNER and shall be deposited in an interest bearing account in a regulated financial institution in this state wherein all such retained funds are kept by the OWNER which shall account for both retainage and interest on each construction contract separately. An OWNER is not required to deposit retained funds in an interest bearing account if the retained funds are to be provided under a state or federal grant and the retained funds have not been paid to the OWNER.
- (d) Except as provided in 14.2.6 and 14.2.7, retainage and interest earned on retainage shall be released to the CONTRACTOR together with the final progress payment.
- (e) At any time after 94% of work under the Contract is in place and at the request of the original CONTRACTOR, the OWNER shall release the retainage plus interest to the original CONTRACTOR only if the original CONTRACTOR provides to the OWNER an irrevocable letter of credit in the amount of the retainage plus interest, issued by a bank authorized to do business in this state, containing terms mutually acceptable to the CONTRACTOR and the OWNER.

14.2.1. If a dispute regarding a matter described in 14.2.2. arises, the CONTRACTOR and the OWNER shall designate an agent who has background, training, and experience in the construction of facilities similar to that which is the subject of the Contract, as follows:

- (a) in an agreement reached within 10 days after a dispute arises;
- (b) if an agreement cannot be reached within 10 days after a dispute arises, the OWNER shall designate an agent who has background, training, and experience in the construction of facilities similar to that which is the subject of the Contract and who is not an employee of the OWNER.

14.2.2. The OWNER may request dispute resolution by the agent regarding the following:

- (a) at any time during the term of the Contract, to determine whether there has been a delay for reasons that were within the control of the CONTRACTOR, and the period of time that delay has been caused, continued, or aggravated by actions of the CONTRACTOR.
- (b) at any time after 94% of work under the Contract is in place, whether there has been an unacceptable delay by the CONTRACTOR in performance of the remaining 6% of work under the Contract. The agent shall consider the terms of the Contract and the procedures normally followed in the industry and shall determine whether the delay was for failure to follow reasonable and prudent practices in the industry for completion of the project.

14.2.3. This dispute resolution process shall be used only for the purpose of determining the rights of the parties to retained funds and interest earned on retained funds and is not intended to alter, abrogate, or limit any rights with respect to remedies that are available to enforce or compel performance of the terms of the Contract by either party.

14.2.4. The agent may request and shall receive all pertinent information from the parties and shall provide an opportunity for an informal meeting to receive comments, documents, and other relevant information in order to resolve the dispute. The agent shall determine the time, place, and procedure for the informal meeting. A written decision and reasons for the decision shall be given to the parties within 14 days after the meeting.

14.2.5. The decision of the agent shall be final and binding upon all parties. Upon application of either party, the decision of the agent may be vacated by order of the circuit court only upon a finding by the court that the decision was procured by fraud, duress, or other illegal means.

14.2.6. If the dispute resolution results in a decision:

- (a) that there has been a delay as described in 14.2.2.(a), all interest earned on retained funds during the period of delay shall become the property of the OWNER;
- (b) that there has been unacceptable delay as described in 14.2.2.(b), the OWNER may contract with a subsequent contractor to complete the remaining 6% of the work under the Contract, and interest earned on retained funds shall become the property of the OWNER. A subsequent contractor under this subdivision shall be paid by the OWNER from the following sources until each source is depleted, in the order listed below:
 - (1) the dollar value of the original Contract, less the dollar value of funds already paid to the original CONTRACTOR and the dollar value of work in place for which the original CONTRACTOR has not received payment;
 - (2) Retainage from the original CONTRACTOR, or funds made available under a letter of credit provided under 14.1.(e);
 - (3) interest earned on retainage from the original CONTRACTOR, of funds made available under a letter of credit provided under 14.1.(e).

14.2.7. If the OWNER contracts with a subsequent CONTRACTOR as provided in 14.2.6.(b), the final progress payment shall be payable to the original CONTRACTOR within the time period specified in 14.4.1. The amount of the final progress payment to the original CONTRACTOR shall not include interest earned on retained funds. The OWNER may deduct from the final progress payment all expenses of contracting with the subsequent CONTRACTOR. This act shall not impair the right of the OWNER to bring an action or to otherwise enforce a performance bond to complete work under a construction Contract.

CONTRACTOR's Warranty of Title

14.3. CONTRACTOR warrants and guarantees that title to all work, material and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER at the time of payment free and clear of all liens, claims, security interests and encumbrances (hereafter in these General Conditions referred to as "Liens").

Approval of Payments

14.4. OWNER will, within ten days after receipt of each Application for Payment, either indicate in writing his approval of payment, or return the application to CONTRACTOR indicating in writing his reasons for refusing to approve payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the application. OWNER shall, after presentation to him of an approved Application for Payment, pay CONTRACTOR the amount approved by OWNER as provided under 14.4.1.

14.4.1. Each progress payment requested, including reasonable interest if requested under 14.4.2. shall be paid within thirty (30) days after receipt by the OWNER of the Application for Payment.

14.4.2. Upon failure of the OWNER to make a timely progress payment pursuant to this section, the person designated to submit requests for progress payments may include reasonable interest on amounts past due in the next request for payment.

14.5. Approval of any payment requested in an Application for Payment will constitute a representation by OWNER, or OWNER's Representative based on on-site observations of the work in progress as an experienced and qualified design professional and on his review of the Application for Payment and the accompanying data and schedules that the work has progressed to the point indicated; that, to the best of his knowledge, information and belief, the quality of the work is in accordance with the Contract Documents (subject to an evaluation of the work as a functioning Project upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents and any qualifications stated in his approval); and that CONTRACTOR is entitled to payment of the amount approved. However, by approving any such payment OWNER will not thereby be deemed to have represented that he made exhaustive or continuous on-site inspections to check the quality or the quantity of the work, or that he has reviewed the means, methods, techniques, sequences, and procedures of construction, or that he has made any examination to ascertain how or for what purpose CONTRACTOR has used the monies paid or to be paid to him on account of the Contract Price, or that title to any work, materials, or equipment has passed to OWNER free and clear of any liens.

14.6. Approval of final payment will constitute an additional representation by OWNER that the conditions precedents to CONTRACTOR's being entitled to final payment as set forth in Paragraph 14.13 have been fulfilled.

14.7. OWNER may refuse to approve the whole or any part of any payment if, in his opinion, it would be incorrect to make such representation. He may also refuse to approve any such payment, or, because of subsequently discovered evidence of the results of subsequent inspections or tests, nullify any such payment previously approved, to such extent as may be necessary in his opinion to protect OWNER from loss because:

- (a) The work is defective, or completed work has been damaged requiring correction or replacement;
- (b) Claims or liens have been filed or there is reasonable cause to believe such may be filed;
- (c) The Contract Price has been reduced because of Modifications;
- (d) OWNER has been required to correct defective work or complete the work in accordance with Paragraph 13.11; or
- (e) Of unsatisfactory prosecution of the work, including failure to furnish acceptable submittals or to clean up.

Substantial Completion

14.8. Prior to final payment, CONTRACTOR may, in writing to OWNER, certify that the entire Project is substantially complete and request that OWNER issue a Certificate of Substantial Completion. Within a reasonable time thereafter, CONTRACTOR and OWNER shall make an inspection of the Project to determine the status of completion. If OWNER does not consider the Project substantially complete, he will notify CONTRACTOR in writing giving his reasons therefor. If OWNER considers the Project substantially complete, he will prepare and deliver a tentative Certificate of Substantial Completion which shall fix the date of Substantial Completion and the responsibilities between OWNER and CONTRACTOR for maintenance, heat, and utilities. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment, and the certificate shall fix the time within which such items shall be completed or corrected, said time to be within the Contract Time.

14.9. OWNER shall have the right to exclude CONTRACTOR from the Project after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

Partial Utilization

14.10. Prior to final payment, OWNER may request CONTRACTOR in writing to permit him to use a specified part of the Project which he believes he may use without significant interference with construction of the other parts of the Project. If CONTRACTOR agrees, he will certify to OWNER that said part of the Project is substantially complete and request OWNER to issue a Certificate of Substantial Completion for that part of the Project which is substantially complete. Within a reasonable time thereafter CONTRACTOR and OWNER shall make an inspection of that Part of the Project to determine its status of completion. If OWNER does not consider that it is substantially complete, he will notify CONTRACTOR in writing giving his reasons therefor. If OWNER considers that part of the Project to be substantially complete, he will execute and deliver to CONTRACTOR a certificate to that effect, fixing the date of Substantial Completion as to that part of the Project, attaching thereto a tentative list of items to be completed or corrected before final payment and fixing the responsibility between OWNER and CONTRACTOR for maintenance, heat and utilities as to that part of the Project. OWNER shall have the right to exclude CONTRACTOR from any part of the Project which OWNER has so certified to be substantially complete, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

Final Inspection

14.11. Upon written notice from CONTRACTOR that the Project is complete, OWNER will make a final inspection with CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies.

Final Application for Payment

14.12. After CONTRACTOR has completed all such corrections to the satisfaction of OWNER and delivered all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, and other documents -- all as required by the Contract Documents -- he may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by such data and schedules as OWNER may reasonably require, together with complete and legally effective releases or waivers (satisfactory to OWNER) of all liens arising out of the Contract Documents and the labor and services performed and the materials and equipment furnished thereunder. In lieu thereof and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full; an affidavit of CONTRACTOR that the releases and receipts include all labor, services, material, and equipment for which a lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the work for which OWNER or his property might in anyway be responsible, have been paid or otherwise satisfied; and consent of the Surety, if any, to final payment. If any Subcontractor, materialman, fabricator, or supplier fails to furnish a release or receipt in full, CONTRACTOR may furnish a bond or other collateral satisfactory to OWNER to indemnify him against any lien.

Approval of Final Payment

14.13. If, on the basis of his observation and review of the work during construction, his final inspection and his review of the final Application for Payment -- all as required by the Contract Documents -- OWNER is satisfied that the work has been completed and CONTRACTOR has fulfilled all of his obligations under the Contract Documents, he will, within ten days after receipt of the final Application for Payment, indicate in writing his approval of payment. Thereupon OWNER will give written notice to CONTRACTOR that the work is acceptable subject to the provisions of Paragraph 14.16. Otherwise, he will return the application to CONTRACTOR, indicating in writing his reasons for refusing to approve final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the application. OWNER shall within ten days of presentation to him of an approved final Application for Payment, pay CONTRACTOR the amount approved by OWNER.

14.14. If after Substantial Completion of the work, final completion thereof is materially delayed through no fault of CONTRACTOR, OWNER shall without terminating the Agreement make payment of the balance due for that portion of the work fully completed and accepted. If the remaining balance for work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.1, the written consent of the Surety to the payment of the balance due for that portion of the work fully completed and accepted shall be submitted by the CONTRACTOR to the OWNER prior to certification of such payment. Such payment shall be made under the terms and conditions governing final payment except that it shall not constitute a waiver of claims.

CONTRACTOR's Continuing Obligation

14.15. CONTRACTOR's obligation to perform the work and complete the Project in accordance with the Contract Documents shall be absolute. Neither approval of any progress or final payment by OWNER, nor the issuance of a Certificate of Substantial Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Project or any part thereof by OWNER, nor any act of acceptance by OWNER nor any failure to do so, nor any correction of defective work by OWNER shall constitute an acceptance of work not in accordance with the Contract Documents.

Waiver of Claims

14.16. The making and acceptance of final payment shall constitute:

- (a) A waiver of all claims by OWNER against CONTRACTOR other than those arising from unsettled liens, from defective work appearing after final inspection pursuant to Paragraph 14.11, or from failure to comply with the requirements of the Contract Documents or the terms of any special guarantees specified therein; and
- (b) A waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

OWNER May Suspend Work

15.1. OWNER may, at any time and without cause, suspend the work or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR which shall fix the date on which work shall be resumed. CONTRACTOR shall resume the work on the date so fixed. CONTRACTOR will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if he makes a claim therefor as provided in Articles 11 and 12.

OWNER May Terminate

15.2. If CONTRACTOR is adjudged bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for CONTRACTOR or for any of his property, or if he files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws, or if he repeatedly fails to supply sufficient skilled workmen or suitable material or equipment, or if he disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction, or if he disregards the authority of OWNER, or if he otherwise violates any provision of the Contract Documents, then OWNER may, without prejudice to any other right or remedy and after giving CONTRACTOR and his Surety seven days' written notice, terminate the services of CONTRACTOR and take possession of the Project and of all materials, equipment, tools, construction equipment and machinery thereon owned by CONTRACTOR, and finish the work by whatever method he may deem expedient. In such case CONTRACTOR shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Project, including compensation for additional

professional services, such excess shall be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such costs incurred by OWNER shall be determined and incorporated in a Change Order.

15.3. Where CONTRACTOR's services have been so terminated by OWNER, said terminations shall not affect any rights of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies by OWNER due CONTRACTOR will not release CONTRACTOR from liability.

15.4. Upon seven days' written notice to CONTRACTOR, OWNER may without cause and without prejudice to any other right or remedy elect to abandon the Project and terminate the Agreement. In such case, CONTRACTOR shall be paid for all work executed and any expense sustained plus a reasonable profit.

CONTRACTOR May Stop Work or Terminate

15.5. If, through no act or fault of CONTRACTOR, the work is suspended for a period of more than ninety days by OWNER or under an order of court or other public authority, or OWNER fails to act on any Application for Payment within thirty days after it is submitted, or OWNER fails to pay CONTRACTOR any sum approved within thirty days of its approval and presentation, then CONTRACTOR may, upon seven days' written notice to OWNER, terminate the Agreement and recover from OWNER payment for all work executed and any expense sustained plus a reasonable profit. In addition and in lieu of terminating the Agreement, if OWNER has failed to act on an Application for Payment or OWNER has failed to make any payment as aforesaid, CONTRACTOR may upon seven days' notice to OWNER and OWNER stop the work until he has been paid all amounts then due.

ARTICLE 16 - OFFICE SPACE (When Applicable)

16.1. The CONTRACTOR shall establish and maintain, at his own expense, office headquarters at the site of the Project. Telephone and fax service shall be provided. At the office headquarters shall be kept a complete set of the Contract Documents and shop drawings.

16.2. The CONTRACTOR shall arrange office space for the OWNER in a separate building or in a room completely partitioned off from the CONTRACTOR's office, if in the same building. The CONTRACTOR shall provide adequate heating and lighting telephone and fax service within the OWNER's office.

ARTICLE 17 - MISCELLANEOUS

Giving Notice

17.1. Whenever any provision of the Contract Documents requires the giving of written notice it shall be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to him who gives the notice.

Computation of Time

17.2. When any period of time is referred to in the Contract Documents by days, it shall be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day shall be omitted from the computation.

General

17.3. All monies not paid when due hereunder shall bear interest at the maximum rate allowed by law at the place of the Project.

17.4. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by Paragraphs 6.30, 13.1, 13.10, and 14.3 and the rights and remedies available to OWNER thereunder, shall be in addition to and shall not be construed in any way as a limitation of any rights and remedies available to them which are otherwise imposed or available by law, by special guarantee, or by other Provisions of the Contract Documents.

17.5. Should OWNER or CONTRACTOR suffer injury or damage to his person or property because of any error, omission, or act of the other or of any of his employees or agents or others for whose acts he is legally liable, claim shall be made in writing to the other party within a reasonable time of the first observance of such injury or damage.

17.6. The Contract Documents shall be governed by the law of the place of the Project.

END OF SECTION

1.00 GENERAL**1.01 DESCRIPTION OF WORK**

- A. Work under this Contract includes the construction and installation of natural boulder retaining walls, bituminous asphalt and concrete pathways, limestone pathways, permeable concrete pavers, concrete retaining curbs, concrete seat walls, concrete flatwork, landscaping, soil erosion control measures, removal of designated vegetation, and various related site work.

1.02 CONTRACTOR QUALIFICATIONS

- A. The CONTRACTOR and his subcontractors shall have a minimum of five (5) consecutive years of experience in projects related to the work of these Specifications and at least five (5) successful projects of this type.
- B. Submit qualifications with the bid on forms provided in this document.

1.03 EXISTING FACILITIES ACCESS

- A. The CONTRACTOR shall be responsible for maintaining access to the existing park area via existing or alternative trails as shown on the Drawings. Alternative trail routes shall be agreed upon by OWNER before implementation.
- B. Access to existing facilities shall not be temporarily disrupted without coordination and prior written approval of the OWNER.

1.04 CONSTRUCTION WATER

- A. Water for construction is available from the OWNER and may be obtained from a hose bib at the picnic pavilion. The CONTRACTOR shall be responsible for providing an approved backflow prevention device to protect the water source and all necessary piping as required by local agency. A meter shall be installed by the CONTRACTOR for the purpose of establishing compensation for water use if the quantity of anticipated water consumption will be significant.

1.05 CONSTRUCTION POWER

- A. Electrical power to be used during construction is available from the OWNER and may be obtained from the 120V/15A plug on the nearby picnic pavilion or Field Operations Building. The CONTRACTOR shall make only safe, NEC and OSHA approved connections to power sources.

1.06 NOTIFICATION OF UTILITIES

- A. The CONTRACTOR shall notify all utilities prior to any excavation. The CONTRACTOR shall contact "MISS-DIG" not less than 72 hours before starting construction for assistance in locating utilities or for any work to be done on utilities. The toll free phone number is 800-482-7171 or 811.

1.07 WORK SCHEDULE

- A. Prior to commencing the work, the CONTRACTOR shall provide to the OWNER a detailed schedule of the proposed work. The schedule shall include a list of tasks required to complete the work; their relevancy to each other; expected duration; and completion dates. The schedule shall include contingency for optional work items.
- B. Submit revised progress schedules at monthly held progress meeting.

1.08 CONSTRUCTION SEQUENCE

- A. Any temporary barricades, equipment, pathway routes, signs, and/or other work necessary to accomplish the proposed work shall be the responsibility and at the expense of the CONTRACTOR.
- B. The CONTRACTOR shall coordinate and schedule his work regularly with the OWNER.

1.09 PROJECT PROGRESS MEETING

- A. It shall be the responsibility of the CONTRACTOR to have a representative present at each progress meeting. The meetings shall be held at least once every two weeks or as directed by the OWNER.

1.10 PEDSTRIAN TRAFFIC AND SITE USE BY PUBLIC

- A. The availability and use of County Farm Park is important to park patrons, parks maintenance staff, and the general public, the CONTRACTOR shall not close pathways at any time without providing safe alternative routes. The pedestrian traffic shall always be maintained by use of temporary fencing and/or alternative pathway routes approved by OWNER.
- B. The CONTRACTOR shall provide as many signs and barricades as required by the OWNER to protect and safely maintain pedestrian traffic flow through the construction area at all times. The CONTRACTOR shall add any additional devices required by the OWNER to provide a smooth and safe flow of traffic.
- C. The construction influence zone shall be properly signed warning park patrons of potential hazards of the construction work.
- D. All possible precautions shall be taken to protect the workmen from injury at no extra cost to the OWNER.
- E. Access to fire hydrants and water valves shall always be maintained. The CONTRACTOR's truck and equipment operations within the park shall be governed by the OWNER and State of Michigan regulations.

1.11 CONSTRUCTION PERMITS

- A. The CONTRACTOR will be required to follow the requirements established by all permits necessary for the construction of this project. The following is a list of all permits that must be obtained prior to the beginning of construction.
 - 1. Washtenaw County Soil Erosion Permit.
 - 2. Washtenaw County Water Resources Office - Use Permit.
- B. The Soil Erosion Control Permit shall be applied for by the CONTRACTOR. The CONTRACTOR will be required to obtain the permit, pay all associated fees, and adhere to all requirements of the permit. The CONTRACTOR must submit a copy of the issued permit to the OWNER prior to construction.

1.12 REFERENCE TO SOIL BORINGS

- A. A soil report and soil boring logs are appended to these Specifications. The CONTRACTOR shall familiarize themselves with the results of the soil report.

END OF SECTION

1.0 GENERAL**1.01 DESCRIPTION**

- A. The CONTRACTOR shall provide all labor, materials, tools and equipment necessary for the preparation and completion of the site project.
- B. The availability and use of this County Park or Natural Area Preserve is important to park patrons, maintenance staff, and the general public. The CONTRACTOR shall not close any facility at any time without written permission of OWNER. If a facility is partially closed, the CONTRACTOR is responsible for providing safe alternative routes for vehicular or pedestrian traffic that is continuously maintained during all construction work once OWNER approves method.
- C. The CONTRACTOR shall conduct his operations in a manner as to minimize disturbance of existing facilities.

1.02 TEMPORARY RELOCATION OF LANDSCAPING

- A. The CONTRACTOR shall temporarily relocate shrubs and perennial plants interfering with construction operations after consult with the OWNER. Cooperation with the OWNER's personnel will be required for temporary protective measures and relocations. Relocation and replacement is paid under the appropriate Site Protection and Restoration line item.
- B. Trees and shrubs are not to be removed unless required by the Plans and/or with the express permission of the OWNER. Where trees are to be removed or are permitted to be removed by the OWNER, the CONTRACTOR shall remove such trees and stumps to a depth of at least two feet below the proposed finish grade. All stumps, roots, logs, branches, brush, and debris shall be removed from the site and disposed of by the CONTRACTOR.

1.03 PROTECTION OF TREES

- A. All trees that are to be preserved and, in the opinion of the OWNER, might be subject to damage by the CONTRACTOR's operations, shall be adequately protected against damage by means of temporary fencing. A minimum of four (4) feet high, orange construction fencing shall be securely strapped to steel or wooden posts capable of maintaining the fence fabric in an erect upright manner throughout the construction operations. The CONTRACTOR shall also maintain this fencing without additional costs to the OWNER until project completion. Such protection is not to be removed until authorized by the OWNER. The actual alignment and placement of the fence shall be as indicated on the Plans or as directed by OWNER.
- B. Machine excavation shall not occur within the drip zone area of any tree, the diameter of the area in feet being equal to the diameter of the tree in inches. If hand excavation within this area cuts across a large root of a tree, the cutting of which, in the opinion of the OWNER, would be injurious to the tree, the CONTRACTOR shall tunnel under such root and protect it from injury throughout the work.
- C. Existing trees that are determined to interfere with the work, and OWNER permits the removal, shall be removed by the CONTRACTOR at his expense and in a safe manner. No tree shall be removed without the expressed approval of the OWNER unless indicated on the Plans.

1.04 WORK AREA AND STORAGE OF MATERIALS

- A. The working area shall be organized in an orderly manner with storage and tool sheds, sanitary facility, parking areas for employees, and all other necessary facilities maintained by the CONTRACTOR. The CONTRACTOR shall keep the site access reasonably clean and dust free.
- B. All materials, supplies and equipment, whether furnished by the CONTRACTOR or by the OWNER, shall be delivered, stored and handled as to prevent overall damage including impacts of foreign materials and/or damage by water, freezing, breakage or other causes. The OWNER may require the CONTRACTOR to provide an enclosed storage shed for the storage of materials, supplies and equipment. Packaged materials shall be delivered in the original unopened containers and shall be properly stored until ready for use. All materials which have been stored shall meet the requirements of the Specifications at the time they are used in the project.
- C. Where the CONTRACTOR is required to do work within the rights-of-way under the jurisdiction of Washtenaw County, he shall meet the requirements of Washtenaw County for the work and storage within their jurisdiction. Such requirements must be met as a minimum requirement, and if the specifications given herein impose further limitations on the work, they shall also be met as the required work standard.

1.05 EXISTING PUBLIC UTILITIES

- A. Existing public utilities and underground structures, such as pipe lines, electric or communication conduits, sewers and water lines are partially shown on the Plans. The information shown on the Plans is believed to be reasonably correct and complete; however, neither the correctness nor the completeness of such information is guaranteed.
- B. The CONTRACTOR shall conduct his operations so as not to damage any existing utility whether shown in the Plans or not. The CONTRACTOR shall correct, at his own expense, any injury caused during the operations of his subcontractors or suppliers.
- C. If the CONTRACTOR desires, or is required by the utility companies, to relocate or protect any power or telephone poles to facilitate his work, any expense encountered from such relocation shall be borne by the CONTRACTOR.

1.06 NOTIFICATION TO UTILITIES

- A. Prior to the start of any operations in the vicinity of any utilities, the CONTRACTOR shall notify the utility companies or MISS-DIG at 800-482-7171 or 811 and request that they stake out the locations of the utilities in question.

1.07 SANITARY REQUIREMENTS

- A. The CONTRACTOR shall provide adequate sanitary facilities for all persons employed on the project. The sanitary facilities shall conform in every way to the requirements of the "General Safety Rules and Regulations for the Construction Industry".

1.08 UTILITIES

- A. The CONTRACTOR shall make all necessary arrangements for the provisions of all utility services, temporary or permanent, required under this contract. The CONTRACTOR shall pay all costs for such connections and services.

- B. All utility services shall be inspected by and shall meet the requirements of the applicable codes and governmental bodies.

1.09 PUMPING AND DRAINAGE

- A. Adequate pumping and drainage facilities shall be provided and water, from whatever source, entering the work during any stage of construction shall be removed promptly and disposed of in a manner satisfactory to the OWNER. All pumping and drainage shall be done with no damage to property or structures and without interference with the right of the public, OWNERS of private property, pedestrians, vehicular traffic, or the work of other CONTRACTORS. Dewatering shall be done in such a manner that the soil under or adjacent to existing structures shall not be disturbed, removed or displaced.
- B. The overloading or obstructing of existing drainage facilities shall not be permitted, and the CONTRACTOR shall be solely responsible for any damages caused to such existing drainage facilities during his operations.

1.10 WINTER CONSTRUCTION

- A. The OWNER shall have permissive authority over the work which is proposed to be done during the winter months. The CONTRACTOR shall provide adequate weather protection, temporary heating and take any other measures which are necessary to insure that the work performed during the winter months is properly installed and protected against damage from freezing or other weather conditions that would affect the work.

2.00 PRODUCTS

Not Applicable.

3.00 EXECUTION

3.01 CONTROL OF WATER POLLUTION AND SILTATION

- A. General Requirements
 - 1. The CONTRACTOR shall conduct his work in a manner to comply with the Soil Erosion and Sedimentation Control Act of 1972, (MICH P.A. 347) that will not cause damaging siltation or pollution of the water in streams, rivers, lakes and reservoirs.
 - 2. Construction operations shall be conducted in such manner as to reduce erosion to the practicable minimum and prevent damaging siltation to water body systems of the Huron River watershed. The area of erodible land exposed to the elements by grading operations, at any one time shall be subject to approval of the OWNER and the duration of such exposure prior to final trimming and finishing of the areas shall be as short as practical. The OWNER shall have full authority to order the suspension of grading and other operations pending adequate and proper performance of trimming, finishing and maintenance work or to restrict the area of erodible land exposed to the elements.
 - 4. Gravel or stone, consisting of durable particles of rock and containing only negligible quantities of fines, shall be used for construction pads and access drives.
 - 5. The disturbance of lands and waters that are outside the limits of construction as staked is prohibited, except as found necessary and approved by the OWNER.

6. The CONTRACTOR shall conduct his work in such manner as to prevent the entry of fuels, oils, bituminous materials, chemicals, sewage, or other harmful materials into streams, rivers, lakes or reservoirs. The CONTRACTOR is solely responsible for all costs for satisfactory clean-up measures.

B. Temporary Control Requirements

1. The CONTRACTOR shall provide temporary soil erosion and sedimental controls according to the Washtenaw County Soil Erosion Control Officer, soil erosion and sedimentation control standards and specifications or revisions thereof.
2. Permanent soil erosion control measures for all slopes, channels, ditches or any disturbed land area shall be completed within 15 calendar days after final grading or the final earth change has been completed or where significant earth change activity ceases, temporary soil erosion control measures shall be implemented within 30 calendar days. All temporary soil erosion control measures shall be maintained until permanent soil erosion control measures are implemented.

3.02 FINISH GRADING, TOP SOIL

- A. After all backfilling and rough grading has been completed and thoroughly compacted, the entire disturbed area at the site shall be graded to smooth, even surfaces as shown by the proposed new contours shown on the Plans. The portion of the disturbed area where no new contours are shown shall be graded to smooth, even surfaces approximating the original surfaces.
- B. All debris and larger stones and sticks and the like shall be removed and disposed of and the entire disturbed area made ready for the addition of top soil and seeding.
- C. After all construction has been completed the CONTRACTOR shall spread 4 inches of approved top soil over all graded areas. The stockpiled material may be used for this purpose. If there is not sufficient top soil on the site, the CONTRACTOR shall secure and deliver to the site whatever amount is required at his own expense.

END OF SECTION

1.00 GENERAL**1.01 DESCRIPTION**

- A. The OWNER shall provide a testing services and pay for cost of soil compaction testing, concrete testing, and various other tests which may be required for the project. Only the OWNER shall authorize testing and inspections. If the CONTRACTOR has testing or inspections executed without prior written authorization of the OWNER, the CONTRACTOR shall be responsible for all costs of these services from their own operating budget.

1.02 MATERIAL TESTING

- A. The CONTRACTOR shall be responsible for providing a testing firm (acceptable to the OWNER) to perform soil compaction density tests, asphalt material analysis and compaction density tests, and concrete quality control including concrete compression tests.
- B. The CONTRACTOR shall provide the service of an independent materials testing laboratory to provide material and compaction testing. The type and minimum frequency of testing shall be as follows:
1. Backfill
 - Sieve analysis per source
 - Proctor per source
 - One (1) compaction test per lift per 1000 square feet of excavation area or as directed by OWNER of material applied
 2. Aggregate
 - Sieve analysis per source
 - One (1) compaction test per 1000 square feet of base area and/or every 100 lineal feet on pathway alignments or as directed by OWNER
 3. Asphalt
 - MDOT Modified Marshall Test as needed
 - One (1) compaction test per 1000 square feet per lift of bituminous material applied and/or every 100 lineal feet of pathway per lift of bituminous material applied or as directed by OWNER
- C. The OWNER shall determine the exact location of all tests. The CONTRACTOR shall notify the OWNER of all testing needs at least 48 hours in advance of installing all materials requiring testing. Any area or material failing tests shall be corrected and retested at the CONTRACTOR's expense.
- D. Copies of test reports shall be furnished to the OWNER and distributed to parties designated by the OWNER, including the CONTRACTOR.

1.03 AUDIO VIDEO TAPE COVERAGE

- A. The CONTRACTOR, when required by the contract, shall furnish to the OWNER, a digital color audio-video recording of all existing conditions and features that may be impacted by their work for all areas of proposed improvements. The CONTRACTOR will provide for this request if audio-video taping is indicated in the proposal as pay item.
- B. The digital audio-video recording shall be of such quality to accurately describe and inventory the existing conditions. The recording shall be produced one (1) week prior to the placement of materials or equipment in the construction area.

- C. The recording work must be recorded while the visibility is clear and at no time will it be allowed during periods of ground fog.
- D. The recording shall be continuous running and shall include date, time, and location at appropriate intervals. The location shall be easily referenced to the Contract Drawings.

END OF SECTION

1.00 GENERAL

1.01 REMOVALS

- A. The CONTRACTOR shall remove trees and plant materials that conflict with new construction, as indicated on the Plans.
- B. Trees to be removed will be marked by the OWNER prior to the CONTRACTOR executing the removal operations.
- C. Grubbing of roots inside the drip line of trees to remain shall be executed only by hand tools.
- D. Removal of trees, shrubs, and other plant materials shall include all branches, trunks, stumps, and root systems to a depth of 24" below new grades. Subgrade areas with proposed improvements such as walks, pathways, play equipment, and/or other amenities affected by settlement must have all woody plant material debris removed completely.
- E. All removed plant material debris shall be ground and chipped by acceptable means and standards for reuse as landscape bedding mulch.

1.02 BACKFILLING

- A. All lawn or turf areas and depressions caused by clearing and grubbing operations shall be backfilled with satisfactory soils.
- B. All areas to receive hardscape improvements shall be backfilled with compacted Class II granular material per Section 02200, Earthwork.

END OF SECTION

1.0 GENERAL**1.01 DESCRIPTION**

- A. The CONTRACTOR shall provide all labor, materials, tools, and equipment necessary to properly dismantle and/or remove the items shown on the Plans or specified herein. This work shall include removal of concrete pavements, curb and gutters, asphalt, subsoils, stone pathways, sod and topsoil, plants, and other identified amenities of infrastructure.
- B. The CONTRACTOR shall conduct his operations in a manner as to minimize disturbance of existing facilities.

2.00 PRODUCTS

Not Applicable.

3.00 EXECUTION**3.01 GENERAL**

- A. The CONTRACTOR shall exercise special precautions during construction, not to damage any remaining pavements, sidewalks, or curb, gutter, and no construction equipment with tractor tire lugs or other defacing or damaging components will be permitted on these surfaces. Where it is necessary for equipment to travel over these areas, the CONTRACTOR shall provide suitable planks and blocking or other approved devices to prevent damaging paved surfaces.
- B. The CONTRACTOR shall conduct his operations in a manner as to minimize disturbance of existing facilities.

3.02 PAVEMENTS

- A. Cut and remove from the project all pavements, curb and gutter, or sidewalks that would be damaged by the work. Cutting of concrete pavement, where permitted, shall be done with a concrete saw, in a manner meeting the approval of the OWNER. Asphalt pavements shall be cut by a tool leaving a square neat cut 12 inches wider on each side than the width of the trench, and care shall be taken during construction operations so as not to cave the banks or undermine remaining pavement. Any reinforcement encountered shall not be cut out, but will be left protruding at least two feet from the face of the cut and shall be bent out of the way to be replaced later and spliced to new reinforcement.
- B. All strips of the existing pavement which are less than 2 feet wide and which are between the cut pavement and concrete curb or surface edge, shall be removed and replaced.

3.03 SIDEWALKS, CURB AND GUTTERS, AND DRIVEWAYS

- A. In cutting through sidewalks, driveways, or curb and gutter, the CONTRACTOR shall remove full slabs of sidewalk or driveway panels or full lengths of curb and gutter to the nearest regular joint on each side of the excavation unless otherwise shown on Plans.

3.04 CATCH BASINS, MANHOLES, SIGNS, AND PIPING

- A. The CONTRACTOR shall exercise special precautions during construction, not to damage any remaining catch basins, manholes, and piping. However, if these units are shown to be removed or relocated, abandonment and capping efforts shall be executed in strict compliance of specifications by the utility agency they serve.

- B. All covers and frames shall remain the property of utility they serve and shall be delivered to them.
- C. Several signs are located throughout the project work. These signs shall be removed and reattached in locations as directed on the Plans or by OWNER.

END OF SECTION

1.00 GENERAL**1.01 DESCRIPTION**

- A. The CONTRACTOR shall perform all excavation and backfilling necessary to complete the work. This shall include the excavation of earth and rock, the removal and disposal of unsuitable material, dewatering, placement of suitable fill and backfill material, and the restoration and final grading for all earth surfaces.
- B. Work shall be done as shown on the Plans, as detailed in the Specifications, and as directed by the OWNER, and in accordance with Section 205 of the 2003 Edition of the MDOT Standard Specification for Construction, except as specified herein.
- C. The Contractor shall remove, add to, re-shape, re-grade, and re-compact the existing surface materials, and shall construct the amenities, parking lots, or pathways to the cross-section(s) as indicated on the Plans, as detailed in the Specifications, and as directed.
- D. See Section 1.00 – General Requirements for additional detail.

1.02 SOIL BORINGS

- A. Soil boring results are appended to these Specifications with locations noted. Boring logs are shown to be generally representative of the site and to assist in the design and construction of the work.

2.00 PRODUCTS**2.01 BACKFILL MATERIAL**

- A. For areas not requiring "granular backfill" material, backfill shall be of the excavated material, with the exception that materials such as soft clay, topsoil, muck, cinders, vegetable matter, refuse, boulders and other objectionable and non-packing earth shall be excluded from the backfill and removed from the site. Stone larger than 3 inches in any dimension shall be excluded from the backfill and removed from the site by the CONTRACTOR.
- B. Where "granular material" backfill is required as specified herein, backfill material shall be defined as a material meeting granular material Class II as defined in 2003 MDOT 902.08.

3.00 EXECUTION**3.01 GENERAL EXCAVATION**

- A. Excavation shall be performed by any practicable method consistent with the integrity and protection of the work and neighboring structures, workmen, and the public. Topsoil shall be separately removed and stockpiled for reuse.
- B. The Contractor shall construct earth grades as required to develop the typical and/or detailed cross-section(s) as shown on the Plans, as detailed in the Specifications, and as directed.
- C. Foreign material or unsuitable foundation material encountered such as wood, boulders, etc., which obstruct the excavation, shall be removed. Such materials found at the bottom of the excavation shall be removed and the foundation restored with approved materials.
- D. If excess excavation is made or the material becomes disturbed so as to require removal beyond the prescribed limits, the resulting space shall be filled with selected material solidly tamped into

place, in not more than 6-inch layers to the satisfaction of the OWNER, before the construction work proceeds. At the direction of the OWNER, the excess excavation may be filled with 2,000 psi concrete at the CONTRACTOR's expense.

- E. The excavation shall be kept dry during the work. Where water is encountered in the excavation, it shall be removed by pumping or well points. All necessary precautions shall be taken to prevent damage to existing wells and to completed or partially completed structures. The CONTRACTOR shall be responsible for all damages caused by him due to inadequate or improper protection.
- F. The CONTRACTOR is solely responsible for the maintenance and protection of the subgrade. Further, any damage to the subgrade which, in the opinion of the OWNER, is caused as a result of the CONTRACTOR'S operation(s), or its subcontractors' or suppliers' operation(s), shall be repaired by the CONTRACTOR at the Contractor's expense. This includes any additional earthwork and/or maintenance materials as directed by the OWNER, for the purposes of the CONTRACTOR'S maintenance and protection of the subgrade. The CONTRACTOR shall **not** be entitled to any additional compensation for the implementation of these procedures.
- G. At various times throughout the work, the OWNER may direct the CONTRACTOR to use smaller and/or lighter equipment, and to defer certain work tasks, in order to protect the grade and/or adjacent areas. The CONTRACTOR shall not be entitled to any additional compensation for the use of smaller equipment, lighter equipment, or work task deferral.

3.02 SHORING, SHEETING AND BRACING

- A. Where sheet piling, shoring, sheeting, bracing, or other supports are necessary, they shall be furnished, placed, maintained, and except as shown or specified otherwise, removed by the CONTRACTOR.
- B. All sheet piling, shoring, sheeting and bracing shall be designed by a Professional Engineer engaged by the CONTRACTOR with demonstrated competence and experience in such work. The sheeting system shall be designed to prevent bottom failure and hydrostatic uplift within the excavation. Provision shall also be made in the design for lateral pressures due to side slope and construction equipment or other surcharge loads, as applicable.
- C. Bracing against the existing wall shall be designed assuming no structural contribution from the stone facing. The bracing shall support the force of the water on the west side.
- D. The CONTRACTOR shall provide to the ENGINEER for his review, design calculation and arrangement drawings of the sheeting system prior to ordering any materials for bracing, sheeting, etc., and prior to the commencement of the excavation.
- E. All materials, except as otherwise specified, used for sheeting and sheet piling, lagging, braces, shores, and stringers, or waling strips shall be of approved quality and dimensions throughout.
- F. Materials for sheeting systems shall be furnished and driven or set in place by the CONTRACTOR, where necessary or wherever ordered by the ENGINEER, whether the same is or is not considered necessary by the CONTRACTOR. If, in the opinion of the ENGINEER, the materials furnished by the CONTRACTOR are not of proper quality or sufficient size or not properly placed to ensure the safety of the work or of adjacent structures and property, the CONTRACTOR shall, upon notice from the ENGINEER to that effect, forthwith procure, furnish and set in place or drive other and satisfactory materials, or place the material in a satisfactory manner; and if he shall fail or neglect to do so, the ENGINEER may order all or any part of the work to be stopped until such materials so used are furnished and placed; and the CONTRACTOR shall not be entitled to claim, demand, or receive any compensation for larger

size or better quality or different disposal of materials ordered by the ENGINEER, nor any compensation for allowance of any kind whatsoever for or on account of any damage or delay resulting from such stoppage of work.

- G. Steel sheet piling may be either new or used. It shall be of adequate strength, straight and properly braced. Steel sheet piling shall be of the interlocking type. Friction in the interlocks shall not be assumed to contribute to the strength of the sheet piling.
- H. The design, planning, installation and removal, if required, of all sheet piling, shoring, sheeting, and bracing shall be accomplished in such a manner as to maintain the required excavation or trench section and to maintain the undisturbed state of the soils below and adjacent to the excavation.
- I. Steel sheet piling for the excavation shall be driven straight and in-line. The piling shall be supported aboveground, before driving, by a guide frame at least 20 ft high which will keep the piling accurately in the required position and vertical. Each piece of piling shall be driven only a few feet at a time and driving shall proceed continuously around the perimeter so that the piles shall reach their full penetration together.
- J. Walers and bracing shall be supplied and installed as required to complete the sheeting system. Walers and braces shall be of adequate strength for the load imposed. Splices in walers shall develop the full strength of the member in bending, shear, and axial compression.
- K. If bracing members are to be removed during construction, the timing and procedure for removal shall not induce excessive stresses in the permanent structures or in steel sheet piling and bracing members.
- L. If the construction sequence of structures requires the transfer of bracing to the completed portions of any structure, the CONTRACTOR shall secure written acceptance of the ENGINEER prior to the installation of such bracing.
- M. The neglect, failure, or refusal of the ENGINEER to order the use of sheeting, or sheet piling or steel, or to order the same to be left in place, or the giving or failure to give of any order or directions as to the manner or methods of driving or placing sheeting, sheet piling, bracing, shores, etc., shall not in any way relieve the CONTRACTOR of any or all obligations under this Contract. Sheeting left in place shall be cut off one (1) ft below existing grade.
- N. The rules of the OSHA and the State Department of Labor with respect to excavation and construction shall at all times be strictly observed.

3.03 FILLING AND BACKFILLING

- A. Against the retaining wall, the CONTRACTOR shall fill with excavated material, provided it has no unacceptable boulders, wood, or other debris. Material shall be adequately dried prior to backfilling so as to insure good compaction. Material shall be compacted in 1' maximum lifts.
- B. Otherwise, material for backfilling shall be soil or soil-rock mixture free of organic and other deleterious matter and shall contain no more than 15% rocks or lumps larger than 2-1/2 inches in the greatest dimension, compacted to 90% density.

3.04 BANK RESTORATION WITH BLANKET DRAIN

- A. The right downstream embankment (adjacent to the right wing wall) shall be excavated and washouts filled with compacted soil.

- B. Construct the blanket drain with filter fabric and aggregates as shown on the Drawings.
- C. Add toe drain header with at least two (2) outlets. Header shall be 4" polyethylene pipe.
- D. Replace and grout existing rip rap to match existing.
- E. 4" polyethylene pipe and perforations shall conform to AASHTO M252 and all applicable MDOT specifications.
- F. Grout shall be as per MDOT R-3. Construct, cure and protect as per MDOT 813.03.C.3 and 813.03.E.2 with existing stones.

3.05 GRADING

- A. The CONTRACTOR shall grade the site to achieve the elevations as shown on the Plans. All disturbed areas beyond the grading limits shall be restored to prior condition.
- B. Surplus excavated material not needed for embankment shall be disposed of by the CONTRACTOR. Headwalls, culverts, drains, sewers and appurtenances filled or damaged by the CONTRACTOR during the course of his operations shall be cleaned, repaired, or replaced at his expense.
- C. All temporary earth changes shall be in conformance with the Soil and Erosion Control Act.

3.06 RESTORATION

- A. Headwalls, culverts, and drainage systems filled or damaged by the CONTRACTOR during the course of his operations shall be cleaned, relaid or rebuilt with new materials to a condition equal to the original state, and of thickness equal to the original structure and to the original line and grade at the CONTRACTOR's expense.
- B. Where the excavation is located beside a ditch and/or where an existing ditch is filled or disturbed in the CONTRACTOR's operations, the CONTRACTOR shall clean, repair, or replace the ditch with properly pitched bottom and side slopes and of section and capacity not less than the original section.
- C. Where excavation has been through lawn areas, the CONTRACTOR shall restore the disturbed area by placing topsoil and seeding or sodding over the final backfill material.
- D. The CONTRACTOR shall remove excess dirt and other construction material from the site of the work and leave the site in a condition equal to its original state.
- E. The final condition of the road shall be subject to the approval of the Washtenaw County Road Commission as well as review by the ENGINEER.

END OF SECTION

1.00 GENERAL**1.01 DESCRIPTION**

- A. The CONTRACTOR shall furnish all labor, materials, tools and equipment necessary to construct the various pavements and surfaces as described herein and/or shown on the Plans.
- B. This work shall include, but not necessarily be limited to, the following:
 - 1. Asphalt Bituminous pathways, parking lots, driveways, game courts, and tennis courts
 - 2. Limestone or natural aggregate pathways
 - 3. Bituminous Stamping and Color Treatment
- C. Where MDOT occurs in statements in this Section, it shall mean Michigan Department of Transportation (2003 Ed.)

1.02 RELATED WORK

- A. Removal of the items listed in Subsection 1.01.B, if existing, is described in Section 2.03 - Demolition.
- B. Preparation of a stabilized subgrade is described in Section 2.04 - Earthwork.

2.00 PRODUCTS**2.01 SUBBASE**

- A. Subbase shall meet the requirements of MDOT Specification, Class II granular material.

2.02 AGGREGATE BASE COURSE

- A. Aggregate base materials shall meet the requirements of MDOT Specifications 902.06, 21AA series limestone.

2.03 AGGREGATE PATHWAY COURSE

- A. Aggregate materials considered for "natural" type pathway surfacing shall meet the requirements of MDOT Specification 902.06, 23A series road gravel.
- B. Limestone aggregate materials used for pathways or surfaces shall be 100% crushed limestone, commonly known as limestone screenings and shall be free of all dirt, clay, and foreign debris. A sample of the proposed material to be used on the project shall be provided by the CONTRACTOR to the OWNER for their review and approval prior to purchase or delivery to the project site. The source of materials must be clearly indicated on the package supplied for consideration. The OWNER will provide written notice of acceptance of suitable material for this application to CONTRACTOR.

2.04 HOT MIX BITUMINOUS ASPHALT

- A. The bituminous mixtures to be used for this work shall be as follows:

WORK ITEM**MDOT BITUMINOUS MIXTURE #**

Bituminous Pavement Leveling - Regular

13A or 1500L-20AAA, as directed by the

Bituminous Pavement Wearing - Regular

Supervising Professional
13A, 36A, or 1500T-20AAA, as directed
by the Supervising Professional

Bituminous Pathways, Game Courts and
Tennis Courts

36A as directed by the Supervising
Professional.

B. Asphalt Binders shall be grade PG 58-28 meeting the requirements specified in Section 904 of the 2003 edition of the MDOT Standard Specifications, and any current supplemental MDOT update.

C. The Contractor shall have a 10-foot long straight-edge, backhoe, air-compressor and jackhammer available during all paving operations.

2.05 RECLAIMED ASPHALT PAVEMENT (RAP) IN BITUMINOUS MIXTURES

A. The use of Reclaimed Asphalt Pavement (RAP) in bituminous mixtures shall be allowed only in pathways, parking lots, and driveways in accordance with Section 501.02.A.2 of the 2003 edition of the MDOT Standard Specifications.

B. RAP materials shall not be included in bituminous mixtures used for game courts or tennis courts. All materials within these bituminous mixtures shall be of first use origin.

3.00 **EXECUTION**

3.01 SUBBASE PREPARATION

A. All granular fill materials placed within the subbase shall be compacted to the thickness shown on the Plans and shall conform to MDOT Standard Specifications, conditioning method No. 1.

B. Density values less than 95% will be sufficient cause for the OWNER to require an adjustment to the compacted area.

C. Subbase grades shall be trimmed and placed to grades in alignment with Plans in order to accommodate associated pavement or surface treatments.

3.01 AGGREGATE BASE AND SURFACE MATERIALS

A. Aggregate base courses or when used as a final surfacing treatment shall be compacted to the thickness shown on the Plans and shall conform to MDOT Standard Specifications, conditioning method No. 1.

B. Aggregate base courses or when used as a final surfacing treatment shall be compacted to the thickness shown on the Plans and shall conform to MDOT Standard Specifications, conditioning method No. 1.

C. During CONTRACTOR start-up operations, a procedure to attain the control density will be established. The goal of the compactive effort will be to establish a procedure, which will achieve the control density. Density values less than 97% will be sufficient cause for the OWNER to require an adjustment to the compacted area. Once the procedure has been established on the start-up section, the procedure shall be used for the remainder of the material to be placed, unless subsequent tests indicate a need to change the procedure.

D. Compaction tests of the aggregate base or pathway surface materials are to be conducted at 100 feet increments along the alignment or as directed by the OWNER.

3.02 BITUMINOUS PAVEMENT PLACEMENT

- A. All concrete work shall be completed prior to placing any bituminous mixtures.
- B. The CONTRACTOR shall schedule the paving operation to avoid longitudinal cold joints.
- C. Bituminous wearing courses shall be placed in lifts of 2-inches or less; base courses may be placed in lifts of 3-inches or less. The orientation of bituminous courses for game or tennis courts shall be installed in the following directions; base course parallel to net alignment (across play) and top or wearing course perpendicular to net alignment (length-wise to court play).
- D. All specified and detailed bituminous thickness dimensions are compacted-in-place.
- E. The CONTRACTOR shall construct the pavement courses to provide the final cross-slopes or grades as specified on the drawings or as directed by the Supervising Professional.
- F. During the placement of base courses, the speed of the paving machine(s) shall not exceed 50-feet per minute. During the placement of wearing courses on tennis court areas, the speed of the paving machine(s) shall not exceed 30-feet per minute.
- G. The CONTRACTOR shall furnish and operate enough materials and equipment as to keep the paving machine(s) moving continuously at all times. Failure to do so shall be cause for the suspension of the paving operation until the CONTRACTOR can demonstrate to the satisfaction of the OWNER or Supervising Professional, that sufficient resources have been dedicated to perform the work in accordance with the specifications.
- H. Each layer of bituminous mixture shall be compacted to at least 95 percent (or as determined acceptable by the Supervising Professional) of the control density, as determined by using the MDOT MODIFIED MARSHALL TEST. All edges of bituminous mixture in contact with or adjacent to turf areas or other soft materials upon placement shall be tightly hand-tool compacted to produce a densely closed edge.
- I. Prior to placing the bond coat on an existing bituminous surfaces to remain, the CONTRACTOR shall kill all vegetation by applying an approved weed killer ("Round-Up" by Monsanto, or equal), and shall thoroughly clean all joints & cracks in the existing pavement (and any gutter to be overlaid) with compressed air and/or vacuum-type street cleaning equipment to remove all dirt and debris to a depth of at least 1-inch, and shall thoroughly clean the entire surface to be paved, with a Vac-All or similar vacuum-type street cleaning equipment.
- J. MDOT SS-1h bond coat shall be applied at a uniform rate of 0.10 gallons/square yard, on all exposed, existing bituminous and concrete surfaces which will come in contact with the new bituminous material. The CONTRACTOR shall take extra care to avoid covering surfaces which are not to be paved. After September 15, SS-1h bond coat shall not be diluted by more than 25%.
- K. The CONTRACTOR shall provide a minimum of two rakers during the placement of all wearing and leveling courses. Further, the CONTRACTOR shall provide, when directed by the Supervising Professional, a second "Break-Down" roller in order to achieve the specified asphalt densities.
- L. The CONTRACTOR shall provide a minimum of 24-hours notice to the Supervising Professional prior to paving, and shall obtain a "Permit To Pave" from the Supervising Professional in advance of scheduling paving.

- M. The CONTRACTOR and Supervising Professional shall carefully observe the paving operation for signs of faulty mixtures. Points of weakness in the surface shall be removed or corrected by the CONTRACTOR, at their expense, prior to paving subsequent lifts of bituminous material. Such corrective action may include the removal and replacement of thin or contaminated sections of pavement, including sections which are weak or unstable. Once the CONTRACTOR or his representative is notified by the Supervising Professional that the material being placed is out of allowable tolerances, or there is a problem with the paving operation, the CONTRACTOR shall stop the paving operation at once, and shall not be permitted to continue placing bituminous material until again authorized by the Supervising Professional.

- N. At various times throughout the work, the Supervising Professional may direct the CONTRACTOR to use smaller and/or lighter equipment, and to defer certain work tasks, in order to protect the grade and/or adjacent areas. The CONTRACTOR shall not be entitled to any additional compensation for the use of smaller equipment, lighter equipment, or work task deferral.

END OF SECTION

PART 1 GENERAL**1.1 SECTION INCLUDES**

- A. Demolition
- B. Clearing and grubbing
- C. Protection of existing amenities and elements
- D. Debris removal
- E. Stripping of topsoil
- F. Soil erosion control measures

1.2 RELATED SECTIONS

- A. Section 02200 – Earthwork and Grading
- B. Section 02800 – Landscaping

1.3 SUBMITTALS

- A. Submit a minimum of 4 sets of shop drawings and 2 sets of structural calculations signed and sealed by a Professional Engineer in the state of Michigan.
- B. Manufacturer shall provide site specific foundation design signed and sealed by a Professional Engineer in the state of Michigan. Generic or “typical” foundation details and design shall not be acceptable.
- C. Structural calculations shall show the conformance to the local building code information:
 - 1. International Building Code (IBC latest Edition),
 - a. 30 P.S.F. (Ground Snow)
 - b. 90 M.P.H., Exposure C
 - c. Seismic Design Category C

1.4 QUALITY ASSURANCE

- A. Supplier Qualifications:
 - 1. The product shall be designed and fabricated at a facility operated and directly supervised by the supplier.
 - 2. The supplier shall have at least 5 years of experience in the design and fabrication of pre-engineered steel shelters.
 - 3. Membership in American Institute of Steel Construction.
 - 4. Membership in American Welding Society.
 - 5. Full time on-staff licensed Professional Engineer.
 - 6. Full time on-staff quality control manager.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Coordinate delivery requirements with Owner and other installers.
- B. Store products in manner to prevent damage prior to installation. Where products need to be stored outdoors, store off the ground and place so that water will drain
- C. Inspect parts within 48 hours of delivery, compare with manufacturer's bill of materials and report any missing or non-conforming parts to the manufacturer within this time frame.

1.6 WARRANTY

- A. Provide manufacturer's standard five year warranty.

PART 2 PRODUCTS**2.1 MODEL**

EA14.67-P10 as manufactured by ICON Shelter Systems.

2.2 ACCEPTABLE MANUFACTURER

- A. ICON Shelter Systems, Inc., 1455 Lincoln Ave, Holland, MI 49423
Telephone 800-748-0985, fax 616-369-0944 or email info@iconshelters.com.
- B. Contact the regional representative for pricing and delivery:
Sinclair Recreation, Matt Campenella
128 E. Lakewood Blvd. Suite 40
Holland, MI 49424
Phone: (616)-392-7441
Fax: (616)392-8634
- C. Substitutions must be approved a minimum of five (10) days prior to the bid date. Any approval of alternate manufacturers shall be through an addendum prior to the bid date and shall not be allowed without written notification.
- D. Alternate suppliers shall meet the requirements shown in Section 1.6. Alternate suppliers must provide proof of: equivalency of the shot blast, e-coat and powder-coat process and finish. Structural design shall include all loads to the foundation and shall not exceed the loads specified in the chart on the installation drawings. Designs using wood, light gauge metal framing or sheet metal other than roof/wall panels and related trim and flashing shall not be approved.

2.3 APPLICATIONS

- A. Shelters: Pre-engineered, prefabricated all-steel framed shelters; column, rafter, and purlin structure, with steel roof panels or T&G roof deck or Sandwich Panel roof deck, all flashing, trim, accessories, and fasteners required for a complete installation.
- B. Structural framing (Columns, rafters, tie-beams, purlins, etc.) shall be Hollow Structural Sections (HSS) meeting ASTM A500 grade B. "I" beams, tapered columns, open "C" channels, cold-formed box sections or wood products shall not be accepted.
- C. Compression rings shall be made of structural channel sections or welded plate sections that meet ASTM A36 grade steel.
- D. Structural connections shall be made with A325 high-strength bolts and A563 structural nuts, ASTM F1554 grade 36 anchor bolts, self-drilling screws and pop-rivets.

2.4 ACCESSORIES

- A. Electrical Access
 - 1. Access holes to be placed in the connections plates to allow electrical wiring from the column base up to the peak.

2.5 FABRICATION

- A. All columns, rafters, tie-beams, purlins, compression rings shall be factory welded assemblies with provisions for bolted connections in the field. There will be no field welding required for any connections. All base plates, stiffener plates, rafter clips and end plates shall be factory welded in place.

- B. Factory welded connections shall be made by certified welders in accordance with the latest edition of AWS D1.1 and D1.3 Specifications. All welders shall be AWS certified.
- C. Factory Frame Finish: Powder coated per the following procedure; the steel shall be shot-blasted to the specification of SSPC-SP10 (shot-blasted to near white condition), this will remove all oil residue, mil scale, weld spatter and slag. The second step the steel is washed and zinc phosphated in an eight stage electro deposition pretreatment process. Then it is immersed in a liquid epoxy and coated to uniform 0.7-0.9 mils, this E-coat process totally encapsulates the part preventing rusting, no welding shall be allowed after the E-coating has been applied. Then a double coat of TGIC polyester powder is applied, one coat of color and one clear coating for a final finish that is 8-12 mils thick. All materials shall be inspected to meet 100% coating, proper cure, film thickness and impact resistance. Color to be selected from the manufacturer's standard color chart. No wet-coat powder-coat alternatives shall be accepted.

PART 3 EXECUTION

- A. When unloading, pad the forks and use other precautions to protect the powder-coated finish. Do not use chains to move materials. Handle all materials carefully in the field to avoid scratching the powder-coat finish. Before installing the roof, clean the steel and touch up any scratches and chips in the powder-coat finish using touch up paint from the manufacturer.
- B. The shelter shall be set on prepared footings or concrete slab (provided by others). Footing details shall be designed by an engineer (retained by other than the manufacturer), based on load information as provided on the manufacturer's supplied drawings. Foundation shall be constructed to all local building code requirements and per good construction practices for the specific site conditions.
- C. In accordance with OSHA Steel Erection Standard 29 CFR 1926.750 Part R, anchor bolts shall be installed for proper column stability and shall have a minimum of four (4) anchor bolts per column.
- D. Install all parts and pieces per the manufacturer's supplied installation instructions and these specifications. The underside of the tongue and groove decking or sandwich panel roof deck shall be sealed before installation as specified and approved by the landscape architect or owner.

END OF SECTION

1.00 GENERAL**1.01 SECTION INCLUDES**

- A. Providing labor, materials, tools and equipment to furnish and install a permeable concrete paving stone system as indicated on the plans and as specified herein.

1.02 RELATED SECTIONS

Section 02200 -- Earthwork

Section 03300-- Concrete

1.03 APPLICABLE STANDARDS AND SPECIFICATIONS

- A. American Society for Testing and Materials (ASTM)

1.04 DEFINITIONS

- A. Base Course: Layer of open-graded aggregate beneath the bedding course layer, comprised of small- to medium-particle-sized stone (typically 1/2" to 1"). Recommended depth of the sub-base layer shall be four inches (4"), but shall not exceed six inches (6").
- B. Bedding Course: Layer of open-graded aggregate directly beneath the unit pavers, comprised of small particle-sized stone chips (typically 1/4" to 3/8" rock). Also commonly called the "setting bed." Recommended depth of the bedding course layer shall be 2".
- C. Bundle: Several layers of paver clusters stacked vertically, packaged, and tagged for shipment. Also commonly called a "cube."
- D. Chamfer: A 45-degree beveled edge around the top of a paver unit, usually 1/8" to 1/4" wide. It facilitates snow removal, helps prevent edge chipping, and delineates the paving's individual units.
- E. Cluster: The group of pavers forming a single layer from a bundle of pavers or the group of pavers held by the clamp of a paver laying machine.
- F. Flats: The portion of the side faces of a paver other than the spacer bars.
- G. Laying Face: The working edge of the pavement where the laying of pavers is occurring.
- H. Mechanical Installation: The use of specialized machines to lift clusters of pavers from the bundles and place them on the prepared bedding course. These specialized machines are designed specifically for this application.
- I. Method Statement: The paver installer's and manufacturer's plan for construction and quality control of the pavers.
- J. Spacer Bars: Small protrusions on each side of pavers which are used to keep them uniformly spaced while minimizing chipping and spalling. Mechanically installed pavers must have spacer bars.
- K. Sub-base Course: Layer of open-graded aggregate beneath the base course layer, comprised of large particle-sized stone (typically 2-1/2" to 3" fractured rock). Depth shall vary depending upon site conditions and specific requirements. Minimum depth of the sub-base course shall be twelve inches (12").

- L. Void Filler: Open-graded aggregate used to fill the openings in the paver units. The bedding course aggregate may be used as the void filler. Smaller particle-sized stone chips (1/8" to 1/4") are preferable, if available.
- M. Wearing Course: The top surface of the paver surrounded by a chamfer.

1.05 SUBMITTALS

- A. Submit the following in accordance with Division 1.
 - 1. The dimensions of the manufacturer's proposed mold assembly including pattern, dimensions of all cavities including radii, spacer bars and the top portion of the mold known as the head or shoe.
 - 2. The Method Statement.
 - 3. The Quality Control Plan.
 - 4. Material samples of pavers, void filler aggregate, bedding course aggregate, base and sub-base course aggregate, including a current sieve analysis of each showing conformance to the specifications.
 - 5. A detailed description of the manufacturer's quality control procedures.
 - 6. Examples of the manufacturer's record-keeping forms.
 - 7. Examples of the installer's record-keeping forms.

1.06 QUALITY ASSURANCE

A. Quality Control Plan

The installer and manufacturer shall establish, provide and maintain a quality control plan. The quality control plan shall provide reasonable assurance that the materials and completed construction submitted for acceptance will conform to the contract requirements. Although guidelines are established and certain requirements are specified, they are minimal, and the installer and manufacturer shall assume full responsibility for meeting all requirements.

The installer and manufacturer shall agree upon a method for measuring the clusters at the factory and in the field. That method shall be submitted in writing to the owner for approval.

The Quality Control Plan shall contain at a minimum, but not limited to, the following elements:

- 1. The manufacturer's quality control procedures.
- 2. The manufacturer's production records showing at a minimum the date of manufacture, a mix design designation, mold number, mold cycles, and sequential pallet numbers. Copies of such records shall be made available to the owner upon request.
- 3. A description of the anticipated growth in the cluster size and a plan for managing the growth so as to not interfere with placement by paving machine(s), if mechanically installed.

4. The installer's quality control procedures, including but not limited to, dimensional control methods, paving machine(s) head adjustment, typical daily work schedule to insure that all pavers placed on the bedding course on any given day are adjusted as required and vibrated, and installation of void filler completed at the end of that work day.
5. Provision for identifying and recording actual daily production and the bundle numbers of pavers used in each day's installation.

B. Sampling and Testing

The manufacturer shall employ an independent testing company, qualified to undertake tests in accordance with the applicable standards specified herein. Test results shall be provided to the installer and the owner, upon request.

Pavers shall be checked for density and dimensional variation, compressive strength (ASTM C140), density and absorption (ASTM C140) and abrasion resistance (ASTM C418).

1. The initial testing frequency shall be one set of tests for each 100,000 full-sized pavers delivered to the site or at any time a change in the manufacturing process, mix design, cement, aggregate or other material occurs.
2. The following number of full-sized pavers shall be randomly sampled for each test: five (5) for dimensional variation; three (3) for density and absorption; three (3) for compressive strength; and three (3) for abrasion resistance.
3. If all pavers tested pass all requirements for a sequence of 400,000 pavers, then the testing frequency may be relaxed to one set of tests for each 200,000 full-sized pavers. If any pavers fail any of the required tests, then the testing frequency shall revert to the initial testing frequency.
4. When any of the individual test results fail to meet the specified requirements, the cluster of pavers represented by that test sample shall be rejected. The manufacturer shall provide additional testing from both before and after the rejected test sample to determine the sequence of the paver production run that should be considered unacceptable.
5. Additional testing, as described above, shall be carried out at no additional expense to the owner. The sequence of pavers found to be defective shall, if they have been delivered to the site, be removed from the site promptly at no expense to the owner or installer.
6. Pavers shall be sound and free from defects that would interfere with the proper placing of the pavers or impair the strength or performance of the construction.

C. Method Statement

The installer and manufacturer shall prepare a Method Statement describing the overall plan to complete the work. This plan shall include at a minimum:

1. The quality control plan.
2. A description of the anticipated mold life, rate and effect of mold wear on pavers produced, individual mold runs, and a mold rotation plan.

3. Clear diagrams showing the proposed starting point of the installation, the proposed direction of installation, progress on a week-by-week basis, and the dimensional controls to be used to maintain specified joint width and straight joint lines.
4. A method of measuring the clusters at the factory and in the field.
5. A description of the anticipated growth in cluster size due to mold wear and a plan for dealing with that growth or other dimensional variances.
6. A description and the personnel and equipment to be employed for each portion of the work including manufacture, installation and quality control.
7. The manufacturer's proposed production rate and mold life for this project and supply data demonstrating experience on similar past projects. Installer shall state the proposed installation rate.
8. The installer's intention to machine-lay or hand-lay the pavers and provide qualifying experience to date for the appropriate method of proposed installation.

D. Qualifications

Every manufacturer and installer shall demonstrate that they have supplied and/or installed ecological pavers for projects of a similar nature, with regard to installation and production capacity of at least 300,000 square feet. Qualifications shall be submitted at the time of bid, without exception.

Paver Manufacturer's Qualifications

1. The manufacturer shall demonstrate a minimum of 5 years successful experience in the manufacture of interlocking concrete block pavers.
2. The manufacturer shall have sufficient production capacity and established quality control procedures to produce, transport, and deliver the required number of pavers with the quality specified, without causing a delay to the work.
3. The manufacturer shall have suitably experienced personnel and a management capability sufficient to produce the number of quality pavers as depicted on the contract drawings and as specified herein.

Paver Installer's Qualifications

1. Installers shall be required to provide their installation history, including references in writing with contact information, demonstrating to the satisfaction of the owner their ability to perform the paver installation and related work indicated in the plans and specifications.
2. The installer shall have suitably experienced personnel and a management capability sufficient to execute the work shown on the contract drawings and specified herein.
3. The installer's foreman shall demonstrate, including references, a minimum of 5 years experience in the installation of unit paver systems similar in size and nature to this project.

1. Concrete paving stones shall be delivered to the site, with or without pallets, in such a way that no damage occurs to the product during hauling and unloading.
2. All pavers shall be delivered to the site in approximately the chronological order in which they were manufactured. They shall be staged on site, as per the method statement.
3. Each bundle of pavers shall be marked with a weather-proof tag identifying at a minimum the manufacturer, the date of manufacture, the mold number, the project name and phase for which the pavers were manufactured and the sequential bundle number.

2.00 PRODUCTS

2.01 ECOLOGICAL PAVERS

A. All interlocking paving stones for the project shall be Fendt Builders Supply, "Eco-Brick™-Permeable Pavers", available at 3285 W. Liberty Rd., Ann Arbor, MI. Contact Kurt Weber at 734-663-4277. Color to be Mossy Oak blend.

B. All interlocking paving stones shall comply with the quality specifications for solid concrete interlocking paving units as required per ASTM C 936.

1. Portland Cement: Conform to ASTM C 150.
2. Aggregates: Conform to ASTM C 33 for normal weight concrete aggregate (no expanded shale or lightweight aggregate) except that grading requirements shall not necessarily apply.
3. Water: Clean and free from any deleterious matter.
4. Other Constituents: Air-entraining admixtures, integral water repellents and finely ground silica shall have a proven record of performance and shall conform to the relevant ASTM standards.
5. Compressive Strength: At the time of delivery to the work site, the average compressive strength of the pavers shall not be less than 8,000 psi, with no individual unit less than 7,200 psi. Testing procedures shall be in accordance with ASTM C 140 specifications.
6. Absorption: The average absorption shall not be greater than five percent (5%), with no individual unit result greater than seven percent (7%) per ASTM C 140 specifications.
7. Resistance to Freezing and Thawing: The manufacturer shall satisfy the purchaser by laboratory testing that the paving units have adequate resistance to freezing and thawing per ASTM C 67-83 specifications. The specimens shall have no breakage and not greater than one percent (1%) loss in dry weight of any individual unit when subjected to 50 cycles of freezing and thawing.
8. Dimensional Tolerances: Pavers shall be prismatic in plan and formed with straight, uniform edges. The tolerance for the flat portions of the sides shall not exceed 1/32" as measured with a steel straight edge. "Slumped" pavers exceeding this tolerance will be rejected. The length, width and thickness of the paving stones shall meet the allowable tolerances specified in ASTM C 936.

9. Color: Monochromatic colors from standard range of colors and/or natural gray.
10. No paver shall be used for this project which has been manufactured in a mold that exceeds the mold life specified in the Method Statement, without written approval of the installer and owner.
11. The measurement across a cluster for any mold shall not increase more than ½" for the entirety of the use of the mold for this project.

2.02 VISUAL INSPECTION

All units shall be sound and free of defects that would interfere with the proper placing of the unit or impair the strength or permanence of the construction. Minor cracks incidental to the usual methods of manufacture, or minor chipping resulting from customary methods of handling in shipment, delivery and installation, shall not be deemed grounds for rejection.

2.03 AGGREGATE MATERIALS

A. Bedding Course and Void Filler Aggregate

The bedding course and void filler aggregate shall be free of organics and soluble salts, or other contaminants likely to cause efflorescence. The grading requirement shall be in compliance with the following gradation chart.

ASTM Sieve Size	Percent Passing (by weight)
1/2 inch	100 – 100
3/8 inch	94 – 100
¼ inch	39 – 94
No. 4	23 – 39
No. 8	8 – 23
No. 16	0 - 8

B. Base Course Aggregate

The base course aggregate shall consist of open-graded stone and meet the following gradation chart.

<u>ASTM Sieve Size</u>	<u>Percent Passing (by weight)</u>
1-1/2 inch	100 – 100
1 inch	90 – 100
3/4 inch	48 – 90
½ inch	27 – 48
¼ inch	12 – 27
No. 4	0 - 12

C. Sub-Base Course Aggregate

The sub-base course aggregate shall consist of open-graded stone and meet the following gradation chart.

<u>ASTM Sieve Size</u>	<u>Percent Passing (by weight)</u>
4 inch	100 – 100
3 inch	80 – 100
2-1/2 inch	50 – 80
2 inch	20 – 50
1-1/2 inch	5 - 20
1 inch	0 – 5

3.00 EXECUTION

3.01 – SUBGRADE

The installer shall verify that the subgrade has been shaped and compacted in conformance to the lines, grades and cross-sections shown on the plans, to provide for the construction of the Bio-Aquifer Storm System pavement structure.

Site grades can be raised to the design subgrade elevation using clean native earth fill (free of deleterious material). This fill should be placed in lifts not exceeding six inches (6") and

compacted to a minimum of ninety-five percent (95%) Standard Proctor density. The final subgrade profile should be uniformly compacted to a minimum of ninety-eight percent (98%)

Standard Proctor density and proof-rolled to delineate soft areas. Removing the unstable soil and replacing with clean, dry compacted earth fill shall be performed to repair these areas.

The requirements to include sub-drains in the pavement design would depend on the subgrade soil conditions. It is recommended that an experienced, qualified geotechnical engineer determine the requirements for sub-drains. If required, the sub-drain pipe shall consist of a four-inch (4") diameter PVC perforated pipe wrapped with filter fabric. The pipe would be placed at subgrade elevation and surrounded with a minimum of four inches (4") of approved open-graded stone. The sub-drain shall drain into a catch basin or other frost-free positive outlet.

3.02 – PLACEMENT OF SUB-BASE COURSE

The thickness of the sub-base course layer will depend upon the subgrade soil conditions and the anticipated traffic loadings. It is recommended that a site assessment be carried out by an experienced, qualified geotechnical engineer to determine the requirements of the base course.

The base course shall consist of a minimum thickness of twelve inches (12") and be compacted using a vibratory smooth-drum roller. It shall be installed in lifts not to exceed six inches (6"). Upon completion of the sub-base course installation, the area shall be proof-rolled using a heavy rubber-tired vehicle (such as a loaded tandem truck) to identify any areas requiring additional compaction. The sub-base course shall be installed to the elevation and cross-section per the plan documents.

3.03 – PLACEMENT OF BASE COURSE

The base course shall consist of a thickness of four inches (4"), placed in one lift, and be compacted using a vibratory smooth-drum roller. The base course shall be installed to the elevation and cross-section per the plan documents.

3.04 – PLACEMENT OF BEDDING COURSE

The bedding course shall be spread loose in a uniform layer to give a depth after compaction of the paving units of about two inches (2"). The contractor shall screed the bedding course using either an approved mechanical screed beam apparatus or by the use of screed guides and boards.

The screeded bedding aggregate shall not be subjected to any traffic by either mechanical equipment or pedestrian use prior to the installation of the paver units. The voids left after the removal of the screed rails shall be filled with loose aggregate as the paver bedding course proceeds.

3.05 – PLACEMENT OF ECOLOGICAL PAVERS

All edge restraints shall be constructed as shown on the plans and in place prior to the installation of the pavers. Poured-in-place concrete curbs are recommended for the Bio-Aquifer Storm System.

The pavers shall be installed in approximately the order in which they were manufactured. No cluster shall be installed next to a cluster that was manufactured more than 1,000 cycles before or after.

Lay pavers in the pattern as shown on the drawings. Lay pavers away from the existing laying face or edge restraint in such a manner as to ensure that the pattern remains square. Chalk lines shall be used upon the bedding course to maintain straight joint lines. Joint spacing between pavers shall be between 1/8" and 1/4"; however, the joint width may need to be increased to 3/8" (if

necessary) to maintain straight joint lines. Lines and grades shown on the plans shall be established and maintained during the installation of the wearing course.

Pavers shall be cut using a table-mounted masonry saw. Block splitting shall not be permitted. All cut faces shall be vertical. Dry cutting of the pavers shall be performed utilizing a dust collection system.

Once the pavers have been placed upon the bedding course and all cut pavers have been inserted to provide a full and complete surface, inspect the pavers for damaged units and remove and replace those units. Once all pattern lines have been straightened, the void filler shall then be placed into the paver openings to the top of the chamfer on the pavers and the surface swept broom clean.

The pavement surface shall be compacted to achieve consolidation of the bedding course and paving stones and brought to design levels and profiles by two passes of a suitable plate compactor. Compaction of the pavers shall be accomplished by the use of a vibratory plate compactor capable of a minimum of 4,500 pounds of compaction force. No compaction shall be permitted within three feet (3') of unrestrained edges of the pavement.

After compaction, inspect the pavers for damaged units and remove and replace those units. On completion of vibration after void filling, the surface tolerances shall be plus or minus $\frac{1}{2}$ " from finish levels. The pavers shall be flush to $\frac{1}{4}$ " above edge restraints.

Additional void filler material shall be swept in the paver voids to within $\frac{1}{2}$ " from the bottom of the chamfer on the paving stones. Upon completion, the wearing course surface shall be swept clean of all excess materials. Remove from the site all surplus materials, equipment and debris resulting from these operations.

END OF SECTION

1.00 GENERAL

1.01 DESCRIPTION

- A. Under this Section the CONTRACTOR shall furnish all labor, materials, and equipment necessary to establish temporary and permanent vegetative ground covers, permanent landscape plant materials, and riprap as described herein and/or shown on the Plans.
- B. This work shall include, but not necessarily be limited to, the following:
 - 1. Temporary Seeding
 - 2. Permanent Seeding
 - 3. Native Seed Mix for Swale Area
 - 4. Compost
 - 5. Sodding
 - 6. Riprap
- C. Where MDOT occurs in statements in this Section, it shall mean Michigan Department of Transportation, 2003 Edition.
- D. The lawn and landscape operations shall not be started until all CONTRACTORS on the site have fully completed their work. Any lawn or landscape areas damaged by other trades performing work at the site shall be fully repaired or replaced at the expense of the CONTRACTOR.

1.02 TEMPORARY REQUIREMENTS

- A. All areas subjected to erosion for up to 12 months, and all areas where temporary seeding will be required to produce sufficient growth to retard erosion prior to the establishment of finished grade or permanent vegetation shall be implemented in the manner prescribed in this Section. Temporary seeding and mulching shall not be paid separately but considered incidental to the work.
- B. The CONTRACTOR shall temporarily relocate plantings as indicated in Section 2.01 Site General Provisions.

1.03 PERMANENT REQUIREMENTS

- A. The CONTRACTOR shall permanently prepare, fertilize, and seed or sod or riprap the areas designated on the Plans or disturbed by the CONTRACTOR. Sod shall be placed on areas having a slope of 3:1 (three horizontal and one vertical) or steeper and as indicated on the Plans. Grass seed shall be placed on areas having a slope flatter than 3:1. Sod may be placed in other areas at the CONTRACTOR's own option and expense. Riprap shall be placed where shown on the Plans or required by the Soil Erosion permit specifications.

- B. Seeding and sodding shall be accomplished within the following schedule:

Dates to sod May 1 - Oct 30

Dates to seed

Turf Mixes Apr 20 - Jun 1

 Aug 10 - Oct 1

FORBS

Genus/Species Name	Common Name
<i>Solidago speciosa</i>	Showy goldenrod
<i>Aster oolentangiensis</i>	Sky Blue Aster
<i>Aster sagittifolius</i>	Arrow-leaved Aster
<i>Monarda fistulosa</i>	Wild bergamot
<i>Rudbeckia triloba</i>	Brown-eyed Susan
<i>Verbena stricta</i>	Hoary vervain

Forbs lbs per Acre	5
Total Dry Area Mix lbs per Acre	15

ANNUAL COVER CROP SEED

Annual Rye (<i>Lolium multiflorum</i>) lbs per Acre	15
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Combine the annual cover crop seed with the grass and forb seeds prior to sowing of seed.

Total seeding mixture rate of native seed & cover crop lbs per acre	30
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RECOMMENDED SEED SOURCES

Michigan Wildflower Farm, 11770 Cutler Road, Portland, MI 48875
 phone: 517-647-6010 www.michiganwildflowerfarm

Native Plant Nursery, PO Box 7841 Ann Arbor phone: 734-677-3260

2.05 COMPOST MATERIALS

- A. Compost soil mixture may be acquired from the city of Ann Arbor Compost Center located at 4120 Platt Rd., Ann Arbor. Phone 734-971-8600. Seasonal pricing may apply. Alternative sources for product can be submitted to OWNER for consideration and approval.

2.06 SOD

- A. Sod shall meet the requirements of MDOT Specification Section 917 for Class A sod.

2.07 MULCH

- A. Mulch shall meet the requirements of MDOT Specification Section 917 for straw mulch.

2.08 RIPRAP

- A. Riprap shall meet the requirements of MDOT Specification Section 916 for heavy riprap.

3.00 EXECUTION

3.01 TEMPORARY SEEDING AND MULCHING

- A. The seedbed immediately before seeding shall be firm but not so compact as to prohibit covering seed, securing adequate germination, or root penetration. Tillage implements shall be used as necessary to provide at least a 3-inch depth of firm but friable soil, free of large clods and stones.
- B. Seed may be broadcast by hand, by cyclone-type mechanical seeders or applied with a drill, cultipacker-seeder, or other suitable equipment. Seed should be covered approximately 1-inch deep either during seeding operation or by following broadcast application with cultipacker or similar tool.
- C. Mulching shall be used with all seedings on disturbed soil areas and for temporary use without seeding during months unfavorable to seeding.
- D. Immediately after seeding, mulch with unweathered small grain straw (preferably wheat) or hay spread uniformly at the rate of 1-1/2 ton per acre, or 100 lbs (2-3 bales) per 1,000 sq ft.

PERMANENT SEEDING AND SODDING

- A. Topsoil shall be spread to a depth of 4 inches unless otherwise shown on the Plans. Placement of topsoil shall conform to MDOT Specification Section 816.
- B. All areas to be seeded or sodded shall be fertilized in accordance with MDOT Specification Section 816.
- C. Seeding for permanent turf area shall be installed a rate of 8lb. per 1000SF.
- D. Sodding shall conform to MDOT Specification Section 816.

3.03 MULCHING

- A. All seeded areas shall be mulched with straw. Mulch shall be anchored using mulch adhesive. Mulching shall conform to MDOT Specification 816.

3.04 NATIVE PLANTINGS

- A. Seeding should occur between April 01 and June 15 or other agreed and approved dates.
- B. Loosen subgrade and spread 3" of topsoil to meet finish grade after light rolling and natural settlement.
- C. Do not use any commercial fertilizer since it may encourage weed growth.
- D. Sow seed by hand or with a broadcaster and press into the soil. Do no cover seed more than 1/4" deep.
- E. Apply a 1" thick mulch layer of crimped straw within 24 hours of completion of seeding.

- F. Maintain and establish plants by watering, weeding, mowing, trimming, replacing, etc. throughout the maintenance periods identified in the contract.
- G. Erect barricades to protect newly planted areas from foot traffic.
- H. At the end of the one-year maintenance period ensure there is a healthy close stand of grasses and forbs, free of weeds and surface irregularities for evaluation. A ratio of 50% coverage over 25 sf with no bare spots exceeding 5"x5" is required. If necessary, adjustments may be required to offset any performance issues.
- I. At the end of the three year maintenance period ensure there is a healthy close stand of grasses and forbs, free of weeds and surface irregularities for evaluation. A ratio of 90% coverage over 25 sf with no bare spots exceeding 5"x5" is required.

3.05 RIPRAP

- A. Placement of riprap shall conform to MDOT Specification Section 208 for heavy riprap.

END OF SECTION

1.00 GENERAL**1.01 DESCRIPTION**

- A. The CONTRACTOR shall furnish all labor, materials, tools, and equipment necessary to construct and install all site improvement products as described herein and/or shown on the Plans.
- B. The site improvement products for this project shall include the following:
 - 1. Permanent 6" diameter steel bollard – DuMor, Inc., model no. 402-42, S-1, Bronze color
 - 2. Removable 6" diameter steel bollard– DuMor, Inc., model no. 402-42, S-1SL, Bronze color

1.02 RELATED WORK

- A. Section 02200 - Earthwork.
- B. Section 03300 – Cast-in-place Concrete

1.03 SUBMITTALS

- A. The CONTRACTOR shall submit shop drawings and/or manufacturer's installation guidelines for all site improvement products as described herein prior to actual fabrication and/or installation to the OWNER for review and acceptance.

1.04 PRODUCT HANDLING

- A. All site improvement products shall be protected in any acceptable manner to prevent damage prior to installation. The CONTRACTOR shall replace at his expense any component damaged during handling or installation with the same specified product.

1.05 PRODUCT INFORMATION

- A. Only products manufactured and supplied by the designated vendors or suppliers as specified herein shall be used on the project. Some information on products is included at the end of the specification section. Substitutions will not be considered.

2.00 PRODUCTS**2.01 STEEL BOLLARDS**

- A. This product is available through DuMor Inc.(Site Furnishings), local sales representative Rob Nalli, Superior Play, Brighton, Michigan, 888-778-7529.

3.00 EXECUTION**3.01 INSTALLATION**

- A. Install all site amenities and improvements level, plumb, and at the require height assignments as detailed, specified or as directed by manufacturer's instructions for assembly.
- B. All amenities shall be installed in or on poured-in-place concrete footings a minimum of 12" in diameter and 42" below top of safety surfacing or finished grade. Slightly slope top of footing away from embedded element to shed water.

END OF SECTION

1.00 GENERAL**1.01 SECTION INCLUDES**

- A. Providing labor, materials, tools and equipment to furnish and install all cast-in-place concrete flatwork (air entrained), footings, foundations, and walls, including reinforcement, concrete materials, mixture design, placement procedures, and finishes as indicated on the plans and specified herein.

1.02 RELATED SECTIONS

Section 01010 – General Requirements

Section 01020 – Site General Provisions

Section 02200 -- Earthwork

Section 02600—Paving and Surfacing

1.03 APPLICABLE STANDARDS AND SPECIFICATIONS

- A. American Society for Testing and Materials (ASTM)
- B. American Concrete Institute's Standard Specifications (ACI)

1.04 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C94M requirements for production facilities and equipment.
- B. Comply with ACI 301.
- C. Comply with ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

1.05 SUBMITTALS

- A. Product data: For each type of product indicated.
- B. Other Action Submittal:
 - 1. Design Mixtures: For each concrete mixture
 - 2. Shop Drawings: For steel reinforcement and sonotube formwork, slipform formwork, material test reports and mix design.

2.00 PRODUCTS**2.01 FORMWORK**

- A. Furnish all formwork and formwork accessories according to ACI 301

2.02 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source throughout Project:

1. Portland Cement: Conform to ASTM C 150.
2. Aggregates: Conform to ASTM C 33 for normal weight concrete aggregate (no expanded shale or lightweight aggregate), ¾" nominal maximum aggregate size.
3. Water: Clean and free from any deleterious matter. ASTM C 94/C94M.
4. Color: Monochromatic colors from standard range of colors and/or natural gray.
5. Custom Color Stain: Specifically for the straw bale concrete wall, the concrete shall be stained with Scofield Co., Lithochrome "Tintura Stain" - #6007 Wheat Grain. Local supplier Livonia Decorative Concrete Products 36959 Amrhein Road, Livonia, MI 734-425-7028. An approved equal or substitute product may be submitted to OWNER for consideration.

2.03 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- B. Plain-Steel Wire: ATSM A 82/A 82M, as drawn.
- C. Plain-Steel Welded Wire Reinforcement: ASTM A 185 plain, fabricated from as-drawn steel wire into flat sheets.
- D. Deformed-Steel Welded Wire Reinforcement: ASTM A 497/A 497M, flat sheet.

2.04 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 2. Retarding Admixture: ASTM C 494/C 494M, Type B..
 3. Water Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.05 CONCRETE MIXTURES

- A. Normal-Weight Concrete: Prepare design mixes, proportioned according to ACI 301, as follows:
1. Minimum Compressive Strength: 4,000psi at 28 days or as referenced in detail drawings.
 2. Maximum Water-Cementitious Materials Ratio: 0.45.
 3. Cementitious Materials: Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of Portland cement, which would otherwise be used, but not less than 20 percent (max).
 4. Slump Limit: 4 inches for concrete with a verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.
 5. Air Content: 6% plus or minus 1.5 percent at point of delivery for 1 inch max aggregate size. Do not allow air content of trowel-finished floor or walk slabs to exceed 3%.

2.06 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116, and furnish batch ticket information.
1. When air temperature is between 85 and 90 deg F, reduce mixing and deliver time from 1 1/2 hrs to 75 minutes, when air temperature is above 90 deg F. Reduce mixing and deliver time to 60 minutes.

2.07 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete.
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.
- D. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B dissipating.

3.00 EXECUTION**3.01 FORMWORK**

Design, construct, erect, brace, shore-up, and maintain all formwork according to ACI 301.

3.02 PLACEMENT OF BASE COURSE

The base course shall consist of a specified thickness, generally placed in one lift, and be compacted using a vibratory smooth-drum roller, vibratory plate compactor, and "pogo stick" compacted as needed. The base course shall be installed to the cross-section per the plan documents.

3.03 EMBEDDED ITEMS

Place and secure anchorage devices and other embedded items required for adjoining work attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

3.04 STEEL REINFORCEMENT

Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

3.05 CONCRETE PLACEMENT

- A. Comply with ACI 301 for placing concrete.
- B. Do not add water to concrete during delivery, at project site, or during placement.
- C. Consolidate concrete with mechanical vibrating equipment.

3.06 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Contraction Joints in Slab-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness.
- C. Isolation Joints: Install joint-filler strips at junctions with slabs-on-grade and vertical surfaces, such as columns pedestals, foundation walls, grade beams, and other locations, as indicated.
 - 1. Extend joint fillers full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.

3.06 FINISHED FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defective areas repaired and patched. Remove fins and other projections that exceed specified limits on formed-surfaces irregularities.
 - 1. Extend joint fillers full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections that exceed specified limits on formed-surfaces irregularities.
 - 1. Apply to concrete surfaces exposed to public view.
- C. Rubbed Finish: Apply the following rubbed finish, defined in ACI 301, to smooth-formed finishes as-cast concrete where indicated:
 - 1. Smooth-rubbed finish.
 - 2. Grout-cleaned finish.
 - 3. Cork-floated finish.

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

E. Custom Tinted Finish: Tinted concrete material shall be installed or applied per manufacturer instructions. The entire exposed portions of the concrete wall surfaces shall be tinted as specified.

3.07 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R for screeding, re-straightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Float Finish: Consolidate surface with power-drive floats or by hand floating if area is small or inaccessible to power-drive floats. Restraighten, cut down high spots, and fill low spots. Repaet float process and restraightening until surface is left with uniform, smooth, granular texture.

C. Nonslip Broom Finish: Apply a non-slip broom finish to surfaces indicated and to exterior concrete pads sloped at entries. Immediately after float finishing, slightly roughen trafficked area by fine brooming with fiber-bristle broom perpendicular to main traffic route.

3.08 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with ACI 301 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq.ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after, placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

D. Curing Methods: Cure formed and unformed concrete for at least seven days according to ACI 308.1 by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days.
2. Curing Compound: Apply uniformly in continuous operation by power sprayer or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after application. Maintain continuity of coating and repair damage during curing period.

3.09 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. Tests: Perform according to ACI 301.

1. Testing Frequency: Three composite samples shall be obtained for each day's pour of each concrete mix exceeding 5 cu. yd. but less than 25 cu. yd. plus one set for each additional 50 cu. yd. or fraction thereof.

3.10 REPAIRS

Remove and replace any concrete placed that does not comply with requirements in this section installed as part of this contract.

END OF SECTION