

BIDDER'S COMPANY NAME:

# REQUEST FOR PROPOSAL

## # 6633

# CLARK AND AVIS SPIKE PRESERVE PARKING LOT CONSTRUCTION

FOR

*WASHTENAW COUNTY PARKS AND RECREATION COMMISSION  
Ann Arbor, MI*

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





**WASHTENAW COUNTY  
FINANCE DEPARTMENT**

**Purchasing Division**

P.O. Box 8645, 220 N. Main,  
Ann Arbor, MI 48107-8645  
Phone (734) 222-6760  
Fax (734) 222-6764

**REQUEST FOR PROPOSAL # 6633**

July 28, 2011

Washtenaw County Purchasing Division on behalf of the Washtenaw County Parks and Recreation Commission is issuing a Request for Proposal (RFP) #6633 for **Parking Lot Construction** at Clark and Avis Spike Preserve in Sharon Township, MI.

**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 4:00 p.m. on *Wednesday, August 24, 2011***

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 # 6633"**

A **mandatory pre-bid site meeting** will be held at **4:30 pm, Tuesday, August 9, 2011** at the Clark and Avis Spike Preserve on Grass Lake Road, east of Sylvan Road.

**Project Work Includes:**

Work under this Contract includes, but is not limited to, the construction and installation of a limestone parking lot, bituminous hot mix asphalt drive approach, removal of designated vegetation, bicycle parking, trailhead kiosk, stormwater management, landscaping and site restoration, and various related site work items.

## **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, Thursday, July 28, 2011 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](mailto:devaultb@ewashtenaw.org).

Please direct technical project questions regarding this RFP to Richard Kent, Washtenaw County Parks and Recreation, Park Planner at **734-971-6337 x319** or [kentr@ewashtenaw.org](mailto:kentr@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

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These Contract Documents are prepared in three separate parts:

- PART I - CONTRACT FORMS
- PART II - DETAILED SPECIFICATIONS
- PART III - DRAWINGS

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PART I  
CONTRACT FORMS



## **INSTRUCTIONS TO BIDDERS**

### **GENERAL**

Work under this Contract includes, but is not limited to, the construction and installation of a limestone parking lot, bituminous hot mix asphalt access drive, removal of designated vegetation, bicycle parking, trailhead kiosk, stormwater management, landscaping and site restoration, 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 21, 2011**  
**Project Anticipated Completion Date October 31, 2011**

**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 Service Contract 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: Clark and Avis Spike Preserve – Parking Lot Construction

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 #6633  
CLARK AND AVIS SPIKE PRESERVE PARKING LOT CONSTRUCTION  
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, RFP #6633**

Item No.	Item Description	Qty	Unit	Unit Price	Total Price
1.	Mobilization, bonds, insurance, permits	1	LS	\$	\$
2.	Soil erosion control measures	1	LS	\$	\$
3.	Complete removal and lawful disposal of trees, woody debris, fencing, and misc. items	1	LS	\$	\$
4.	Strip and respread topsoil	1	LS	\$	\$
5.	Excavation of existing soils for proposed access driveway, parking lot, and stormwater management facility, disposal on-site	420	CY	\$	\$
6.	Aggregate for parking lot base – MDOT 21AA, 6 inch depth	410	SY	\$	\$
7.	Limestone aggregate for access driveway base – MDOT 21AA, 10 inch depth	315	SY	\$	\$
8.	Crushed limestone for parking lot – MDOT 21AA, 6 inch depth	410	SY	\$	\$
9.	Bituminous Hot Mix Asphalt Leveling course – MDOT 13A HMA 2 inch depth	2,835	SF	\$	\$
10.	Bituminous Hot Mix Asphalt Wearing course – MDOT 13A HMA 2 inch depth	2,835	SF	\$	\$
11.	6" PVC storm pipe	42	LF	\$	\$
12.	Perforated 4" PVC underdrain pipe	73	LF	\$	\$
13.	Detention outlet control structure	1	LS	\$	\$
14.	End section and riprap	1	LS	\$	\$
15.	Bioswale soil mixture and filter fabric	1	LS	\$	\$
16.	Seed and mulch bioswale	100	SY	\$	\$
17.	Amelanchier arborea -12' min. hgt, 2.5" cal., B&B	2	EA	\$	\$
18.	Acer rubrum - 12' min. hgt, 2.5" cal., B&B	1	EA	\$	\$
19.	Juniperus virginiana – 5' min. hgt., B&B	1	EA	\$	\$
20.	Quercus rubra - 12' min. hgt, 2.5" cal., B&B	1	EA	\$	\$
21.	Cornus racemosa – 3' min. hgt, B&B	3	EA	\$	\$
22.	Cornus sericea 'Baileyi' – 3' min. hgt, B&B	3	EA	\$	\$
23.	Viburnum dentatum 'Morton' – 3' min. hgt, B&B	3	EA	\$	\$
24.	Bike racks	2	EA	\$	\$
25.	Installation of trailhead kiosk	1	EA	\$	\$

Item No.	Item Description	Qty	Unit	Unit Price	Total Price
26.	Permanent bollards	59	EA	\$	\$
27.	Removable bollards	2	EA	\$	\$
28.	Accessible parking sign	1	EA	\$	\$
29.	Installation of entrance sign	1	EA	\$	\$
30.	Fine grade, seed and mulch all disturbed areas with tall grass prairie mix	1,745	SY	\$	\$
<b>Total Bid Amount (Items 1 through 30)</b>				\$	\$

Dollars (\$ \_\_\_\_\_)

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

Informative Prices, if needed as directed by WCPARC.

Item	Item Description	Qty	Unit	Unit Price
1.	Undercutting of poor soils	20	CY	\$
2.	MDOT Class II granular material compacted in place to 97% max. density	20	CY	\$

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**  
**Clark and Avis Spike Preserve, Parking Lot Construction**

<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.
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.
Complete removal and lawful disposal of trees, woody debris, fencing, and misc. items	By the unit lump sum (LS)	For removal and disposal of existing trees, clearing of woody vegetation and fencing as indicated.
Strip and respread topsoil	By the unit lump sum (LS)	For stripping of topsoil and stockpiling during construction. Then respreading of topsoil in disturbed areas.
Excavation of existing soils for proposed access driveway, parking lot, and stormwater management facility, 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.
Aggregate for parking lot base – MDOT 21AA	By the square yard (SY)	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.
Limestone aggregate for access driveway base - MDOT 21AA	By the square yard (SY)	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.
Crushed limestone for parking lot – MDOT 21AA	By the square yard (SY)	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.
Bituminous Hot Mix Asphalt leveling course - MDOT 13A HMA, 2 inch depth	By the square foot (SF)	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 – MDOT 13A HMA, 2 inch depth	By the unit square foot (SF)	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.
6" PVC storm pipe	By the linear foot (LF)	For furnishing and installing all materials including pipe, trench aggregate and backfill.
Perforated 4" PVC underdrain pipe	By the linear foot (LF)	For furnishing and installing, all materials including stone backfill and aggregate as detailed.
Detention outlet control structure	By the unit lump sum (LS)	For furnishing and installing, all materials as detailed.
End section and riprap	By the unit lump sum (LS)	For furnishing and installing all materials including end section, riprap, and geotextile fabric.
Bioswale plantings, soil medium, filter fabric, and one year maintenance/ establishment program	By the unit lump sum (LS)	For furnishing and installing soil medium, and filter fabric as detailed. Shall also include incorporating compost mix to create an acceptable planting medium. Submit to OWNER and receive approval of a detailed one-year maintenance and establishment program.
Seed and mulch bioswale	By the unit square yard (SY)	For furnishing and installing bioswale seed mix as specified.
Tree and shrub plantings	By the unit each (EA)	For furnishing and installing trees and shrubs as specified. Shall include two-year warranty period for replacement of sub-quality performance of trees and shrubs.
Bike racks	By the unit each (EA)	For furnishing and installing, all materials as specified.
Installation of trailhead kiosk	By the unit each (EA)	For transport and installing, all materials as specified.
Permanent bollards	By the unit each (EA)	For furnishing and installing, all materials as specified.
Removable bollards	By the unit each (EA)	For furnishing and installing, all materials as specified.
Accessible parking sign	By the unit each (EA)	For furnishing and installing, all materials as specified.
Installation of entrance sign	By the unit each (EA).	For transport and installing, all materials as specified.

ITEM IN PROPOSAL

METHOD OF MEASUREMENT

BASIS OF PAYMENT

Fine grade, seed and mulch all disturbed areas with tall grass prairie mix

By the unit square yard (SY)

For fine grading, furnishing and installing tall grass prairie seed and mulch 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 \_\_\_\_\_, 20\_\_

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.

ARTICLE XXII – ELECTRONIC SIGNATURES

All parties to this contract agree that either electronic or handwritten signatures are acceptable to execute this agreement.

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

RFP # 6633, CLARK AND AVIS SPIKE PRESERVE PARKING LOT CONSTRUCTION

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

RFP # 6633, CLARK AND AVIS SPIKE PRESERVE PARKING LOT CONSTRUCTION

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

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## ARTICLE 1 - DEFINITIONS

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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

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### 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**

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**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**

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### **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

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

**5.4.3. Comprehensive Automobile Liability:**

Bodily Injury	\$1,000,000
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Property Damage \$1,000,000  
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**

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**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**

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**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**

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**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

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### **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**

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**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

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**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**

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**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**

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### **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**

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**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**

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### **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)**

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**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

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### 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

PART II

DETAILED SPECIFICATIONS

**1.00 GENERAL****1.01 DESCRIPTION OF WORK**

- A. Work under this Contract includes the construction and installation of a limestone parking lot, bituminous hot mix asphalt access drive, bicycle parking, trailhead kiosk, stormwater management, landscaping, removal of designated vegetation, site restoration, 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 three (3) successful projects of this type.
- B. Submit fully completed qualification forms as provided in this document.

**1.03 EXISTING FACILITIES ACCESS**

- A. 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 not available from the OWNER or site and must be provided by the CONTRACTOR, if necessary.

**1.05 CONSTRUCTION POWER**

- A. Electrical power to be used during construction is not available from the OWNER or site and must be provided by the CONTRACTOR, if necessary.

**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.
- B. The CONTRACTOR shall take all necessary measures to field verify all utilities in general proximity to the project work.

**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 Clark and Avis Spike Preserve 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 construction influence zone shall be properly signed warning park patrons of potential hazards of the construction work.
- C. All possible precautions shall be taken to protect the workmen from injury at no extra cost to the OWNER.
- D. 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 Road Commission New Commercial Driveway Permit.
- B. 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.

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 Clark and Avis Spike 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. 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 lawfully disposed of by the CONTRACTOR.

**1.03 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.

**1.04 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.

#### 1.05 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.

#### 1.06 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".

#### 1.07 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.

#### 1.08 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.

#### 1.09 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**

Not Applicable

END OF SECTION

## 1.00 GENERAL

### 1.01 SUMMARY

- A. Make submittals required by the Contract Documents, and revise and resubmit as necessary to establish compliance with the specified requirements, all as described in this Section.
- B. Related Work:
  - 1. Individual requirements for submittals also may be described in pertinent Sections of these Specifications.
- C. Work Not Included:
  - 1. Submittals not required will not be reviewed by the Landscape Architect.
  - 2. The Contractor may require his subcontractors to provide drawings, setting diagrams, and similar information to help coordinate the Work, but such data shall remain between the Contractor and his subcontractors and will not be reviewed by the Landscape Architect unless specifically called for within the Contract Documents.

### 1.02 SUBMITTALS

- A. Make submittals of Product Data, Shop Drawings, Samples, Substitution Requests, and other items in accordance with the provisions of this Section.

### 1.03 QUALITY ASSURANCE

- A. Coordination of Submittals:
  - 1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
  - 2. Verify that each item and the submittal for it conform in all respects with the specified requirements.
  - 3. By affixing the Contractor's signature to each submittal, certify that this coordination has been performed.

## PART 2 PRODUCTS

### 2.01 PRODUCT DATA

- A. Where product data is required include manufacturer's product description and specifications indicating the following:
  - 1. Product Name

2. Manufacturer
3. Technical Specification Data
4. Sizes, Finishes and Colors Available
5. Basic Uses
6. Limitations
7. Composition
8. Applicable Standards
9. Installation Instructions
10. Warranties

- B. Where contents of submitted data from manufacturers includes data not pertinent to the submittal, clearly show which portions of the contents are being submitted for review.
- C. Submit the number of copies that are required to be returned, plus 2 copies that will be retained by the Landscape Architect.

## 2.02 SAMPLES

- A. Provide sample or samples identical to the precise article proposed to be provided. Identify as described under "Identification of Submittals" below.
- B. Number of Samples Required:
  1. Unless otherwise specified, submit samples in the quantity that is required to be returned, plus two that will be retained by the Landscape Architect.
  2. By prearrangement in specific cases, a single sample may be submitted for review and, when approved, be installed in the Work at a location agreed upon by the Landscape Architect.
- C. Colors and Patterns: As called for in the Contract Documents, and whenever a choice of color or pattern is available in the specified products, submit accurate color and pattern charts to the Landscape Architect for selection.

## PART 3 EXECUTION

### 3.01 IDENTIFICATION OF SUBMITTALS

- A. Consecutively number all submittals:
  1. When material is resubmitted for any reason, transmit under new letter of transmittal and with a new transmittal number.
  2. On re-submittals, cite the original submittal number for reference.
- B. Accompany each submittal with a letter of transmittal showing all information required for identification and checking.

- C. On at least the first page of each submittal, and elsewhere as required for positive identification, show the submittal number in which the item was included.
- D. Submittal Log:
  - 1. Maintain an accurate submittal log for the duration of the Work, showing current status of all submittals at all times.
  - 2. Make the submittal log available to the Landscape Architect for review upon request.
- E. Submittals: Deliver all submittals to the Landscape Architect.

### 3.02 GROUPING OF SUBMITTALS

- A. Unless otherwise specified, make submittals in groups containing all associated items to assure that information is available for checking each item when it is received.
  - 1. Partial submittals may be rejected as not complying with the provisions of the Contract.
  - 2. The Contractor may be held liable for delays so occasioned.

### 3.03 TIMING OF SUBMITTALS

- A. Make submittals far enough in advance of scheduled dates for installation to provide time required for reviews, for securing necessary approvals, for possible revisions and re-submittals, and for placing orders and securing delivery.
- B. In scheduling, allow at least ten working days for review by the Landscape Architect following the receipt of the submittal.

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 OWNER shall be responsible for providing a testing firm to perform soil compaction density tests, and concrete quality control including concrete compression tests.
- B. 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
- 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 parties designated by the OWNER, which may include the CONTRACTOR.

END OF SECTION

SECTION 02100  
SITE PREPARATION

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
  - 1. Demolition
  - 2. Clearing and grubbing.
  - 3. Protection and salvaging of existing elements to remain.
  - 4. Trash and debris removal.
  - 5. Adjustment of existing utilities.
  - 6. Topsoil stripping.
  - 7. Soil erosion control.
  
- B. Related Sections:
  - 1. Section 02200 Earthwork

1.02 JOB CONDITIONS

- A. General:
  - 1. Prior to submitting bids, visit the site and review the existing conditions.
  - 2. Conduct demolition operations and removal of debris to ensure minimum interference with roads, streets, walks and occupied facilities.
  
- B. Safety: Ensure safe passage of persons around area of demolition. Conduct operations to prevent injury to adjacent buildings, structures, other facilities, and persons.
  
- C. Repairs: Promptly repair damages caused to adjacent facilities by demolition operations.
  
- D. Service Interruptions: Do not interrupt existing utilities serving occupied facilities, except when authorized by Owner. Provide temporary services, acceptable to Owner, during interruptions to existing facilities.

1.03 DEFINITIONS

- A. Acceptance: Wherever the terms "acceptance" or "accepted" are used herein, they mean acceptance of the Landscape Architect in writing.

PART 2 PRODUCTS

2.01 SAFETY FENCE

- A. Fabric: ALPI Safety Fence, 4 foot height, by American Tenax Products or approved substitute.
- B. Posts: Heavy duty "T" posts, 6 foot long.
- C. Supplier: Construction Supply, Highland, Michigan; (313) 887-6767.

## 2.02 SILT FENCE

- A. Material: Beltech 751, pre-fabricated silt fence or approved substitute.
- B. Supplier: ADS, Owosso, Michigan; (800) 237-7659.

## PART 3 EXECUTION

### 3.01 DEMOLITION

- A. General:
  - 1. Perform work during hours approved by the Owner.
  - 2. Meet requirements of applicable laws, codes, and regulations for removal, safety of adjacent property, dust control, run off control, erosion control and disposal.
  - 3. Notify the Owner immediately if hazardous or contaminated materials are discovered.
  - 4. Unless otherwise noted, demolition shall include the removal of items which would interfere with or be incongruous to construction of the project.
  - 5. Use water sprinkling, temporary dust proof enclosures and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level. Comply with governing regulations pertaining to environmental protection.
  - 6. Do not use water when it may create hazardous or objectionable conditions.
- B. Verification of Conditions:
  - 1. Prior to the start of removal work, visit the site with Owner and the Landscape Architect to clarify and verify the extent of removal work to be performed.
  - 2. Carefully identify limits of selective demolition.
  - 3. Mark interface surfaces as required to enable workmen to identify items to be removed and items to be left in place intact.
- C. Utilities:
  - 1. Shut off, cap, and otherwise protect existing public utility lines in accordance with the requirements of the public agency or utility having jurisdiction.
  - 2. It shall be the sole responsibility of the Contractor to protect and maintain all underground facilities for the duration of his work.

3. Should conflicts arise between the location of existing underground lines and proposed locations of new underground elements, Contractor shall notify the Architect immediately. Upon notification of the existence of a conflict, the Landscape Architect shall determine what adjustments to the Contract Documents will be necessary in order to resolve conflicts between existing and proposed underground elements.

D. Conditions to Remain:

1. Protect from damage all adjoining property and adjacent areas not scheduled for construction.
2. Provide bracing and shoring of adjacent structures to remain if necessary to prevent movement or structural failure.
3. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing prior to the start of work.

### 3.02 CLEARING AND GRUBBING

A. Removal:

1. Contractor shall remove trees and plant materials that conflict with new construction, as indicated in the drawings.
2. Trees to be removed will be marked by the Contractor for approval by the Owner and the Landscape Architect prior to removal.
3. Use only hand methods for grubbing inside the drip line of trees indicated to be left standing.
4. Removal of trees, shrubs, and other plant material shall include branches, trunks, stumps, and root systems to 24" below new grade. Within areas scheduled for walks, parking lots, structures or other improvements affected by settlement, woody material shall be completely removed.

B. Backfilling:

1. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.
2. Place fill material in horizontal layers not exceeding 6" loose depth, and thoroughly compact to a density equal to adjacent original ground.
3. In areas to receive further excavation or earthwork, see Section 02200, Earthwork.

C. Disposal: All woody material shall be disposed of off-site.

### 3.03 PROTECTION

A. Tree Protection:

1. Existing trees, shrubs, and plant material to remain shall be protected as detailed on the plans.



2. Do not remove branches from existing trees to remain without approval from the Landscape Architect.
3. Do not use trees which are to remain for any purpose such as crane stays, guy anchors, etc.
4. Storage of materials, parking vehicles or stockpiling inside the drip line of trees to remain shall not be permitted.
5. Damage to any trees shall be repaired by qualified nurserymen or replaced with approved equal materials.
6. The Contractor shall be held liable for the destruction of existing trees scheduled to remain. Said existing trees six inch (6") dbh or smaller shall be replaced with nursery grown balled and burlapped stock of the same size and species. Should destruction occur with trees larger than six inch (6") dbh occur, the Contractor shall reimburse the Owner the amount stipulated in the latest edition of the Michigan Shade Tree Evaluation Chart published by the Michigan Forestry and Park Association for the particular species involved. The percentage of full value for the tree based on its condition and location shall be determined by the Owner or Landscape Architect.
7. Owner shall be justly compensated for any damage to existing trees, whether repairable or not, at the rate of \$50.00 per inch of cross-section diameter 12" above grade (ex: 10" dia x \$50 = \$500).

B. Utilities:

1. Existing utilities to remain shall be protected and maintained to prevent leakage, sedimentation settlement, or other damage.
2. Damage shall be required or replaced to former condition and as required by the utility company or municipal or state government department affected.

C. Survey Markers:

1. Protect survey markers from damage.
2. Replace or repair immediately any survey markers destroyed or dislocated.

### 3.04 REMOVAL OF DEBRIS

- A. General: Rubbish or debris shall be removed from the site daily and legally disposed. No large quantities will be allowed to accumulate.
- B. Burning: No burning of rubbish or debris will be permitted.

### 3.05 ADJUSTMENT OF EXISTING UTILITIES

- A. General: All manholes, valve boxes, gate valves, etc., (if any) shall be adjusted to conform to shape and grade of finished grade. This adjustment shall be in accordance with the regulating agency of the utility involved.

### 3.06 STRIPPING TOPSOIL

- A. Topsoil:
  - 1. Strip topsoil under sidewalks, paving, or any area to receive change in grade, to underlying subsoil in a manner to prevent intermingling with underlying subsoil.
  - 2. Remove heavy growths of grass from areas before stripping.
  - 3. Where trees are indicated to be left standing, stop topsoil stripping at drip line of tree.
  - 4. Stockpile topsoil for re-use after rough grading operations.
  - 5. Topsoil shall remain the property of the Owner and shall not be removed from the site.
  
- B. Boulders: Boulders (if encountered) shall be stockpiled as directed by Owner.

### 3.07 SOIL EROSION AND SEDIMENTATION CONTROL

- A. General Requirements:
  - 1. Public Act 346, the Soil Erosion and Sedimentation Control Act of 1972, must be followed. Should the local regulatory agency determine that the construction operation is in violation of the Soil Erosion Act, the Contractor shall take immediate action to remedy the situation.
  - 2. Responsibility to render the site erosion free rests with the Contractor. Approval by the Owner of any method to accomplish this does not relieve the Contractor of full responsibility.
  - 3. Delays due to shut down from non-compliance with the Soil Erosion Act are the responsibility and at the expense of the Contractor.
  
- B. Operations:
  - 1. Prior to construction, silt fence shall be installed as indicated on the plans.
  - 2. Operations shall be conducted in such a manner as to reduce and contain erosion. The amount of time land is exposed to the elements by grading operations shall be the minimum.
  - 3. Temporary sediment traps, diversion ditches, stabilized access road, etc., shall be constructed at locations indicated on plan in a timely fashion so as to minimize sedimentation of water courses.

### 3.08 INSPECTION AND TESTING

- A. Notification: Notify Landscape Architect upon completion of site preparation to enable inspection by the Testing Agency (if deemed necessary).

END OF SECTION

SITE PREPARATION  
02100.5

## SECTION 02200

### EARTHWORK

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Section Includes:
  - 1. Excavation work
  - 2. Site grading
  - 3. Preparation of subgrade for walks, pavements, structures, lawn and planting areas
  
- B. Related Sections:
  - 1. Section 02100 Site Preparation
  - 2. Section 02216 Topsoil Placement
  - 3. Section 02260 Finish Grading
  - 4. Section 02480 Landscape Work
  - 5. Section 02920 Soil Preparation and Soil Mixes

##### 1.02 REFERENCES

- A. MDOT - Michigan Department of Transportation, "Standard Specifications for Construction", current edition.
  
- B. ASTM - American Society of Testing Materials, latest edition.

##### 1.03 DEFINITIONS

- A. Maximum Density: Maximum unit weight per volume for an established material.
  
- B. Optimum Moisture: Percentage of water at maximum density.
  
- C. Borrow: Material required for earthwork construction in excess of the quantity of suitable material available from required excavation grading or cutting. Borrow may be necessary even though not shown on the plans.
  
- D. Suitable Excavated Material: Mineral (inorganic) soil free of cinders, refuse, sod, boulders, rocks, pavement, soft or plastic clays, vegetation or other organic material, capable of being compacted as specified. Moisture content has no bearing on the suitability of materials to be used.
  
- E. Granular Material: Course grained materials having no cohesion, which derive their resistance to displacement from internal stability.
  
- F. Cohesive Material: Fine grained material which produces resistance to displacement by mutual attraction between particles. Clays are cohesive.

EARTHWORK

02200.1

- G. Rough Grade: Earth grade before placing structure or landscaping.
- H. Subgrade: Earth grade upon which a pavement structure is to be placed.
- I. Rock Excavation: Boulders or rock weighing 4,000 pounds (approximately one cubic yard) or more and all solid rock, slate, shale sandstone and other hard materials that require continuous use of pneumatic tools, heavy rippers or continuous drilling and blasting for removal. Pavements are not included.
- J. Proof Rolling: Applying test loads over the rough grade or subgrade surface by means of a heavy pneumatic tire roller or other approved means, to locate and permit timely correction of deficiencies likely to adversely affect performance of the pavement structure.
- K. Acceptance: Wherever the terms "acceptance" or "accepted" are used herein, they mean acceptance of Landscape Architect in writing.

#### 1.04 QUALITY ASSURANCE

- A. Codes and Standards: Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

#### 1.05 SITE CONDITIONS

- A. Existing Utilities:
  - 1. Locate existing underground utilities in the areas of work. If utilities are to remain in place, provide adequate means of protection during earthwork operations.
  - 2. Should uncharted, or incorrectly charted piping or other utilities be encountered during excavation, consult the utility owner immediately for directions.
  - 3. Cooperate with Owner and utility companies in keeping respective services and facilities in operation.
  - 4. Repair damaged utilities to satisfaction of utility owner.
- B. Use of Chemicals or Explosives: Not permitted without prior written authorization from the Owner. If herbicides or soil sterilants are specified on the drawings or elsewhere in these specifications, the brand and type shall be approved by the Owner prior to application.
- C. Protection of Persons and Property:
  - 1. Barricade open excavations occurring as part of this work with barricade construction approved by governing authorities. Operate warning lights as recommended by authorities having jurisdiction.
  - 2. Protect structures, utilities, sidewalks, pavements and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.
  - 3. Every effort shall be made to accommodate the public during construction.

- D. Defective Work: If during progress of the work, testing indicates that materials do not meet specified requirements, remove defective work and replace at no cost to the Owner.
- E. Moisture Content:
  - 1. Moisture content has no bearing on the suitability of material to be used, however, some materials may require extensive manipulation to achieve required compaction. It is the contractor's responsibility to determine the economics of using or disposing and replacing of such materials.
  - 2. Materials determined by the contractor to be uneconomical for use may be disposed of off-site or on-site in areas approved by the Landscape Architect or Engineer and replaced with other material at no additional cost to the Owner.

## PART 2 PRODUCTS

### 2.01 MATERIALS

- A. Fill:
  - 1. Granular Material: MDOT specification for Class III granular material limited to 1.0 in. maximum size.
  - 2. Select Granular Material: MDOT specification for Class II or IIa granular material limited to 1.0 in. maximum size.
  - 3. Ordinary Fill: Suitable excavated material or material meeting the requirements of suitable excavated materials.
- B. Topsoil: Surface soils containing organic matters and productive of plant life. Refer to Section 02216.
- C. Pipe Bedding: Compact granular material.
- D. Aggregate Base: Crushed natural aggregate, or limestone graded to conform to MDOT Specification for 21AA aggregates.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verification of Conditions: Examine site and verify that conditions are suitable to receive work and that no defects or errors are present which would cause defective installation of products or cause latent defects in workmanship and function.
- B. Unsuitable Conditions: Before proceeding with work, notify Owner and Landscape Architect in writing of all unsuitable conditions and conflicts.

### 3.02 PREPARATION

#### A. Protection of Existing Conditions:

1. General: Use every possible precaution to prevent damage to existing conditions to remain such as structures, utilities, irrigation systems, plant materials and paving on or adjacent to the site of the work.
2. Barriers: Provide barricades, fences or other barriers as necessary to protect existing conditions to remain from damage during construction.
3. Operations: Do not store materials or equipment, permit burning, or operate or park equipment under the branches of existing plants to remain.
4. Notification of Damages: Submit written notification of all conditions damaged during construction to the Owner and Landscape Architect immediately.
5. Determination of Damage of Plant Material: Landscape Architect will determine the extent of damage and value of damaged plant material. Refer to Section 02100 for evaluation criteria.
6. Replacement of Existing Plant Material: Replace existing plants to remain which are damaged during construction with plants of the same species and size as those damaged at no cost to the Owner. Refer to Section 02100 for conditions that apply to trees that cannot be replaced due to size or location.

#### B. Survey Requirements:

1. Lines and Levels: Establish lines and levels, locate and lay out by instrumentation and similar appropriate means for all grading.
2. Additional Staking: Provide grade stakes and string lines as required to achieve rough grade with positive surface drainage.

#### C. Utilities:

1. Before starting excavation establish location and extent of underground utilities occurring in work area.
2. Notify utility companies to remove and relocate lines which are in conflict with design locations.

### 3.03 EXCAVATION

#### A. General:

1. Excavate as required for construction of the work. Utilize or dispose of excavated materials as required.
2. Remove unsuitable material to firm underlying soils beneath footings, pipelines, floor slabs, paved areas and walks. Backfill to required subgrade elevation with suitable compacted fill.
3. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Landscape Architect. Unauthorized excavation, as well as remedial work directed by the Landscape Architect shall be at the Contractor's expense. Backfill and compact unauthorized excavations of the same classification, unless otherwise directed by Landscape Architect.

- B. Stability of Excavations:
  - 1. Slope sides of excavations to comply with local codes and ordinances having jurisdiction.
  - 2. Maintain sides and slopes of excavations in a safe condition until completion of backfilling.
  
- C. Shoring and Bracing:
  - 1. Provide materials for shoring and bracing, such as sheet piling, uprights, stringers and cross-braces in good serviceable condition, where excavation side slopes are limited by space or stability of material.
  - 2. Establish requirements for trench shoring and bracing to comply with local codes and authorities having jurisdiction.
  - 3. Maintain shoring and bracing in excavations regardless of time period excavations will be open. Extend shoring and bracing as excavation progresses.
  
- D. Dewatering:
  - 1. Prevent surface water and subsurface or ground water from flowing into excavations and from flooding project site and surrounding area.
  - 2. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, well points, sumps, suction and discharge lines and other dewatering system components necessary to convey water away from excavations.
  - 3. Convey water removed from excavations and rain water to collecting or run-off areas. Establish and maintain temporary drainage ditches and other diversions outside excavation limits for each structure. Do not use trench excavations as temporary drainage ditches.
  
- E. Material Storage:
  - 1. Stockpile satisfactory excavated materials within limits of site construction or in staging area, until required for backfill or fill.
  - 2. Place, grade and shape stockpiles for proper drainage.
  - 3. Locate and retain soil materials away from edge of excavations.
  - 4. Dispose of excess soil material and waste material as specified in Section 02100.
  
- F. Cold Weather Protection: Protect excavation for footings against freezing when atmospheric temperature is less than 35 degrees F.
  
- G. Utilities:
  - 1. Maintain, reroute or extend as required, existing utility lines to remain which pass through excavation area.
  - 2. Protect utility services uncovered by excavation.
  - 3. Cap off, plug or seal, discontinued utility services and remove from site within excavated areas.

### 3.04 BACKFILL AND FILL

- A. General: Place acceptable soil material in layers to required subgrade elevations, for each area classification listed below.
  - 1. Under topsoil at grassed area, use ordinary fill material to 4" below finish grade.
  - 2. Under slabs, walks and pavements: Use ordinary fill material or granular fill material.
  
- B. Timing: Backfill excavations as promptly as work permits, but not until completion of the following:
  - 1. Acceptance by Landscape Architect or Engineer of construction below finish grade.
  - 2. Inspection, testing approval, and recording locations of underground utilities.
  - 3. Removal of trash and debris.
  
- C. Ground Surface Preparation:
  - 1. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to replacement of fills.
  - 2. Plow strip, or break-up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface.
  - 3. When existing ground surface has a density less than that specified under "Compaction" for the particular area classification, break up the ground surface, pulverize, moisture-condition to the optimum moisture content, and compact to required depth and percentage of maximum density.
  - 4. If existing soil cannot be compacted, remove to depth of maximum density or as required by the Landscape Architect or Engineer, and replace with approved material and compact.
  
- D. Placement and Compaction:
  - 1. Place backfill and fill materials in layers not more than 9" in loose depth for material compacted by mechanical compaction equipment, and not more than 4" in loose depth for material compacted by hand-operated tampers.
  - 2. Before compaction, moisten or aerate each layer as necessary to provide the optimum moisture content.
  - 3. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification.
  - 4. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

### 3.05 COMPACTION REQUIREMENTS

- A. General: Control soil compaction during construction providing minimum percentage of density specified for each area classification.
  
- B. Percentage of Maximum Density Requirements: Compact subgrade and each layer of backfill or fill material to not less than the following percentages of maximum density at optimum moisture content in accordance with ASTM D 1557, method D:



1. Lawn or Unpaved Areas: 90% maximum density.
2. Walks and Pavements: 95% maximum density.
3. Footings: 95% maximum density.

C. Moisture Control:

1. Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material, to prevent free water appearing on surface during or subsequent to compaction operations.
2. Remove and replace at no cost to the Owner, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
3. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing or pulverizing until moisture content is reduced to a satisfactory value.

D. Moisture - Density Relationship:

1. Cohesive (Clays) or Granular (Sands) Soils - ASTM D1557 (Modified Proctor).
2. Granular (Sands) Soils - Michigan Cone Test.

E. Testing: By Landscape Architect or Owner approved independent laboratory.

F. Access: Provide equipment and personnel for access to test locations when requested by Landscape Architect or Engineer.

### 3.06 GRADING

A. General:

1. Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.
2. Lawn or Unpaved Areas: Finish areas to receive topsoil by cutting or filling to within not more than 0.10' above or below the required subgrade elevation.
3. Drives: Shape surface of areas under pavement to line, grade and cross-section, with finish grade not more than 0.10' above or below the required subgrade elevation (cut to 8" below underside of pavement if not otherwise indicated).

B. Compaction: After grading, compact subgrade surfaces to the depth and percentage of maximum density for each area classification.

### 3.07 PROOFROLL SUBGRADE SURFACE

A. General: Provide two complete passes over area to receive pavement structure.

B. Correction of Deficiencies:

1. Fill depressions with compacted material similar to subgrade soil.

2. Undercut areas not providing satisfactory support for pavement structure.
  - a. Fill with compacted material similar to subgrade soil.
  - b. Place geotextile material when soil below undercut will not satisfactory support construction equipment or when directed by Engineer.

### 3.08 MAINTENANCE

- A. Protection of Graded Areas:
  1. Protect newly graded areas from traffic and erosion.
  2. Keep free of trash and debris.
  3. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.
- B. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape, and compact to required density prior to further construction.

### 3.09 SURPLUS MATERIALS

- A. Surplus excavated or unsuitable excavated material becomes the property of the Contractor.
- B. Dispose of surplus or unsuitable excavated materials on-site in areas designated by Landscape Architect or Engineer.

END OF SECTION

## SECTION 02216

### TOPSOIL AND TOPSOIL PLACEMENT

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Section Includes:
  - 1. Ripping of Subgrade
  - 2. Treatment of Topsoil to Remove Deleterious Materials
  - 3. Placement of Topsoil
  - 4. Blading of Topsoil Smooth After Placement
  
- B. Related Sections:
  - 1. Section 02200 Earthwork
  - 2. Section 02260 Finish Grading
  - 3. Section 02480 Landscape Work
  - 4. Section 02920 Soil Preparation and Soil Mixes

##### 1.02 REFERENCES

- A. ASTM - American Society for Testing Materials:
  - 1. Test method for Laboratory Compaction Characteristics of Soil Using Modified Effort, ASTM D 1557-91.

##### 1.03 DEFINITIONS

- A. Soil Subgrade: The soil surface on which topsoil is placed.
  
- B. Finished Grades: The final grade elevations indicated on the Grading Drawings.
  
- C. Aesthetic Acceptance of Grades: Acceptance by the Landscape Architect in writing of the Aesthetic Correctness of the contours as observed without a survey instrument. Aesthetic Acceptance does not address whether an area drains properly, whether the areas are at the correct elevation, or whether it has been compacted properly.
  
- D. Acceptance: Wherever the terms "acceptance" or "accepted" are used herein, they mean acceptance of Landscape Architect in writing.

##### 1.04 SUBMITTALS

- A. Soil Test Report: Submit 3 copies of soil analysis data of all imported topsoil showing the following data:
  - 1. Chemical Properties:

- a. Half Saturation Percentage
  - b. PPM dry soil of: NO<sub>3</sub>-N, NH<sub>4</sub>-N, PO<sub>4</sub>-P, K, Ca, Mg
  - c. pH
  - d. Sodium Absorption Ratio
  - e. Salinity Boron
  - f. Saturation Extract Values of: EC<sub>e</sub>, Ca-Me/1, Mg-Me/1, Na-Me/1, K-Me/1, B-PPM
  - g. Cation exchange capacity (CEC).
2. Physical Properties:
- a. USDA sieve method classification
  - b. USDA hydrometer classification
  - c. Organic content

#### 1.05 SITE CONDITIONS

- A. Environmental Requirements:
- 1. Do not work soil when moisture content is so great that excessive compaction will occur, nor when it is so dry that dust will form in the air or that clods will not break readily.
  - 2. Do not work soil when muddy or frozen.

#### 1.06 WARRANTY

- A. Warrant that topsoil layer shall be free of settlement below the finish grades for a period of one year from date of Final Acceptance.

### PART 2 PRODUCTS

#### 2.01 MATERIALS

- A. Topsoil:
- 1. Quality: Fertile, friable, well drained, of uniform quality, free of herbicide contamination and other substances toxic to plant growth, stones over one inch diameter, sticks, oils, chemicals, plaster, concrete and other deleterious materials.
  - 2. Nematodes: Parasitic nematode population shall not be more than 200 per 50 cubic centimeters of soil.
  - 3. Source: Utilize on-site topsoil unless directed otherwise by the Landscape Architect.

#### 2.02 SOIL AMENDMENTS

- A. Lime: Natural limestone containing not less than 85% of total carbonates, ground so that not less than 90% passes a 10-mesh sieve and not less than 50% passes a 100-mesh sieve.

- B. Peat Humus: F.S. Q-P-166 and with the texture and ph range suitable for the intended use.
- C. Bonemeal: Commercial, raw, finely ground, 4% nitrogen and 20% phosphoric acid.
- D. Superphosphate: Soluble mixture of treated minerals, 20% available phosphoric acid.
- E. Commercial Fertilizer: Complete fertilizer of neutral character, with some elements derived from organic sources and containing the following percentages of available plant nutrients. For trees and shrubs, provide fertilizer with not less than 10% phosphoric acid, from 3% to 5% soluble potash.

### PART 3 EXECUTION

#### 3.01 EXAMINATION

- A. Verification of Subgrade: Verify that subgrade has been graded to correct elevations.
- B. Verification of Conditions: Examine site and verify that conditions are suitable to receive work and that no defects or errors are present which would cause defective installation of products or cause latent defects in workmanship and function.
- C. Unsuitable conditions: Before proceeding with work, notify Owner and Landscape Architect in writing of all unsuitable conditions and conflicts.

#### 3.02 PREPARATION

- A. Ripping Subgrade:
  1. Timing: Prior to placing topsoil, rip all areas to receive topsoil on the same day topsoil is placed.
  2. Direction at Slopes of 5:1 or More: Rip soil parallel with slope contours in one direction.
  3. Direction at Areas of Less Than 5:1 Slopes: Rip areas in two directions 90 degrees to each other.
  4. Depth at Slopes of 5:1 or More: Rip to a depth of 6 inches unless indicated otherwise.
  5. Depth at Areas of Less Than 5:1 Slopes: Rip to a depth of 12 inches unless indicated otherwise.
  6. Tine Spacing: Space ripping machine tines at 18 inches on center.
- B. Clearing Subgrade: Clear subgrade of all stones larger than 2 inches, sticks, and other extraneous materials prior to placement of topsoil.
- C. Cleaning Topsoil: Remove stones larger than one inch, sub-soil refuse, tree and shrub roots, clods, sticks and other deleterious materials from topsoil prior to spreading.

### 3.03 PLACEMENT OF TOPSOIL

- A. Location: Place topsoil at locations shown on the Drawings.
- B. Depth:
  - 1. Place topsoil to the depths shown on the Drawings.
  - 2. Make allowances for settlement, addition of soil amendment, and fine grading.

### 3.04 TOLERANCES

- A. Finish Grades:
  - 1. Grade all planting areas and lawns to within 0.10 foot of grades indicated on the Grading Plans, except bring grades along paving, curbs and other structures to within 0.02 foot of grades shown on the Grading Plans.
  - 2. Transition grades along paving, curbs and other structures to areas of less strict tolerance over 6 foot distance.

### 3.05 SPILLAGE, DUST AND EROSION CONTROL

- A. Spillage:
  - 1. Take precautions to prevent spillage when hauling on or adjacent to any public street or highway.
  - 2. In the event that spillage occurs, remove all spillage and sweep, wash, or otherwise clean such streets or highways as required by local City, County or State authorities.
- B. Dust Control: Use water trucks or temporary irrigation and take all precautions needed to prevent a dust nuisance to adjacent public or private properties.
- C. Erosion Control:
  - 1. Comply with the Soil Erosion and Sedimentation Control requirements listed under Section 02100.

### 3.06 FIELD QUALITY CONTROL

- A. Field Observation Reviews by Landscape Architect: Coordinate and schedule with Landscape Architect.

### 3.07 PROTECTION OF TOPSOIL

- A. Drainage: Keep surface of the topsoil in such condition that it will drain readily and effectively.
- B. Compaction and Contamination: In handling materials and operating tools and equipment, protect the topsoil from damage by laying down planks, plywood, or other

accepted protective devices where required and take other precautions as needed to protect topsoil from compaction and contamination.

C. Vehicular Traffic:

1. Do not allow vehicles to travel in a single track.
2. If ruts are formed, blade rutted topsoil smooth.

D. Storage of Materials: Do not store or stockpile materials on the topsoil.

E. Excessive Compaction:

1. Avoid excessive compaction of planting areas.
2. Rip to 12-inch depth, rototil, and blade smooth areas which become compacted more than 85 percent as determined by ASTM D 1557-91.

END OF SECTION

## SECTION 02260

### FINISH GRADING

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Section Includes:
  - 1. Finish grading
- B. Related Sections:
  - 1. Section 02480 Landscape Work
  - 2. Section 02920 Soil Preparation and Soil Mixes

##### 1.02 REFERENCES

- A. ASTM - American Society for Testing Materials:
  - 1. Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort - D 1557-91.

##### 1.03 DEFINITIONS

- A. Percent Compaction: The required in-place dry density of the material, expressed as a percentage of the maximum dry density of the same material determined by ASTM D 1557 - 91 test procedure.
- B. Soil Subgrade: The soil surface on which topsoil is placed.
- C. Finished Grades: The required final grade elevations indicated on the Grading Drawings.
- D. Aesthetic Acceptance of Grades: Acceptance by the Landscape Architect in writing of the Aesthetic Correctness of the contours. Aesthetic Acceptance does not address whether an area drains properly, whether the areas are at the correct elevation, or whether it has been compacted properly.
- E. Acceptance: Wherever the terms "acceptance" or "accepted" are used herein, they mean acceptance of Landscape Architect in writing.

##### 1.04 QUALITY ASSURANCE

- A. Soil Surface Smoothness Mockup:
  - 1. Prepare a 20 feet by 20 feet area of soil on site for acceptance by the Landscape Architect as a standard by which finish grading will be judged.
  - 2. Locate mockup on site in a proposed planting area easily referenced by workmen performing finish grading operations.
  - 3. Protect accepted mockup from physical damage and erosion with fencing, canopies, sandbags or other accepted means until substantial completion.



## 1.05 SITE CONDITIONS

### A. Environmental Requirements:

1. Working Soil: Do not work soil when moisture content is so great that excessive compaction will occur, nor when it is so dry that dust will form in the air or that clods will not break readily. Apply water, if necessary, to bring soil to an optimum moisture content for tilling. Do not work soil when muddy or frozen.

## PART 2 PRODUCTS

Not applicable.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verification of Soil Preparation: Examine site and verify that all soil preparation and topsoil placement work is complete.
- B. Verification of Conditions: Examine site and verify that conditions are suitable to receive work and that no defects or errors are present which would cause defective installation of products or cause latent defects in workmanship and function.
- C. Unsuitable conditions: Before proceeding with work, notify Owner and Landscape Architect in writing of all unsuitable conditions and conflicts.

### 3.02 PREPARATION

#### A. Protection of Existing Conditions:

1. General: Use every possible precaution to prevent damage to existing conditions to remain such as structures, utilities, irrigation systems, plant materials and paving on or adjacent to the site of the work.
2. Barriers: Provide barricades, fences or other barriers as necessary to protect existing conditions to remain from damage during construction.
3. Operations: Do not store materials or equipment, permit burning, or operate or park equipment under the branches of existing plants to remain.
4. Notification of Damages: Submit written notification of all conditions damaged during construction to the Owner and Landscape Architect immediately.
5. Determination of Damage of Plant Material: Landscape Architect will determine the extent of damage and value of damaged plant material.
6. Replacement of Existing Plant Material: Replace existing plants to remain which are damaged during construction with plants of the same species and size as those damaged at no cost to the Owner.

- B. Survey Requirements:
  - 1. Lines and Levels: Establish lines and levels, locate and lay out by instrumentation and similar appropriate means for all planting area finish grades.
  - 2. Additional Staking: Provide grade stakes and string lines as required to achieve smooth finish grades with positive surface drainage.

### 3.03 FINISH GRADING OPERATIONS

- A. General: Generally, grade with uniform slope between points where elevations are given or between such points and existing grades.
  - 1. Soil Inspection for Deleterious Materials: Inspect soil for sticks, oils, chemicals, plaster, concrete, and other deleterious materials.
  - 2. Removal of Deleterious Materials: Do work necessary to remove the deleterious materials.
- B. Surface Drainage:
  - 1. Slope finish grades to drain surface water away from buildings, walks, paving, and other structures unless otherwise noted.
  - 2. Slope finish grades to drain surface water to storm water management facilities as shown on the Drawings.
- C. Inducing Settlement and Melting Clods:
  - 1. Apply water as required to induce settlement and melt remaining clods.
  - 2. When adequately dry, regrade or rescreed smooth, adding additional amended soil as required.
- D. Equipment: Use equipment of appropriate size and type to achieve the sculptural forms, profiles and smooth soil surface free of high areas, depressions and tracks.
- E. Depressions and Loose Material: Fill and compact any depressions, and remove all loose material to finish surface true to line and grade, presenting a smooth, compacted, and unyielding surface.
- F. Excessive Compaction: Except within existing tree drip lines, rip areas which become compacted more than 75 percent, as determined by ASTM D 1557-91, to a 12-inch depth, rototill and blade smooth.

### 3.04 TOLERANCES

- A. Finish Grades:
  - 1. Grade all areas to within 0.10 foot of grades indicated on the Grading Plans, except bring grades along paving, curbs and other structures to within 0.02 foot of grades shown on the grading plans.
  - 2. Transition grades along paving, curbs and other structures to areas of less strict tolerance over 6 feet distance.
- B. Allowances: Make proper allowances for settlement, spoils from plant pits, and addition of soil amendment.

3.05 FIELD QUALITY CONTROL

- A. Interim Field Observation Reviews by Landscape Architect: Coordinate and schedule with Landscape Architect.

END OF SECTION

## SECTION 02480

### LANDSCAPE WORK

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Section Includes:
  - 1. Topsoil materials, furnishing additional, spreading, and disposal of excess, if any
  - 2. Trees, shrubs and planting.
  - 4. Staking and mulching.
  - 3. Tall grass / wildflower establishment.
  - 4. Bioswale establishment
  - 5. Maintenance and guarantee.
  - 6. Miscellaneous materials as required, such as fertilizers, etc
  
- B. Related Sections:
  - 1. Section 02216 Topsoil Placement
  - 2. Section 02260 Finish Grading
  - 3. Section 02920 Soil Preparation and Soil Mixes
  - 4. Section 02975 Landscape Maintenance
  
- C. Related Documents: Comply with all requirements contained herein.

##### 1.06 REFERENCES

- A. ANSI - American National Standards Institute:
  - 1. American Standard for Nursery Stock, ANSI Z60.1-1990
  
- B. AOAC - Official Methods of Analysis, Association of Official Analytical Chemists.
  
- C. AOSA - Association of Official Seed Analysis:
  - 1. Rules for Testing Seeds, Journal of Seed Technology, 1991 Edition.
  
- D. ICBN - International Code of Botanical Nomenclature
  
- E. ICNCP - International Code of Nomenclature of Cultivated Plants
  
- F. NAAPS - National Arborist Association Pruning Standards

##### 1.07 DEFINITIONS

- A. Acceptance: Wherever the terms "acceptance" or "accepted" are used herein, they mean acceptance of Landscape Architect in writing.

##### 1.08 SUBMITTALS

- A. General: Meet requirements of Section 01340
  
- B. Product Data and Specifications:

1. Seed
  2. Mulch
  3. Tackifier
  4. Herbicides
- C. Plant Material Photographs: At least 14 days prior to submittal of plant material location data, submit three color photographs each of representative plants of each type of plant material. Include a scale object in each photograph such as a ruler or person.
- D. Plant Material Location Data: Written list of the specified plant material including the following:
1. Quantities of each plant material type at each nursery or other place of growth.
  2. Address, Phone Number, and Name of Contact Person for each nursery or other place of growth.
  3. If plant is different variety or cultivar than that specified, indicate exact variety or cultivar proposed.
- E. Warranty:
1. Plant Material Warranty: Warranty on contractor's letterhead signed by authorized contractor's representative.
- F. Field Test Reports:
1. Percolation Tests

#### 1.05 WARRANTY

- A. Warranty Period: Warrant that all trees and shrubs planted under this Contract will be healthy and in flourishing condition of active growth two years from date of Final Acceptance.
- B. Delays: All delays in completion of planting operations which extend the planting into more than one planting season shall extend the Warranty Period correspondingly.
- C. Condition of Plants:
1. Plants shall be free of dead or dying branches and branch tips, with all foliage of a normal density, size and color.
  2. Grasses shall be free of dead or dying patches, and all areas shall show foliage of normal density, size and color.
- D. Coverage: Warrant growth and coverage of seeded planting to the effect that a minimum of 97 percent of the area planted shall be covered with specified planting after one growing season with no bare spots greater than 6 square inches.
- E. Replacements:
1. As soon as weather conditions permit, replace, without cost to Owner, all dead plants and all plants not in a vigorous, thriving condition, as determined by Landscape Architect during and at the end of Warranty Period.
  2. Apply all requirements of this Specification to all replacements.

- F. Incorrect Materials:
  - 1. During Warranty Period, replace at no cost to Owner all plants revealed as being untrue to name.
  - 2. Provide replacements of a size and quality to match the planted materials at the time the mistake is discovered.
- G. Exceptions:
  - 1. Contractor shall not be held responsible for failures due to neglect by Owner, vandalism, fire, flood, lightning, freezing rains or winds over 60 MPH during Warranty Period.
  - 2. Report such conditions in writing immediately to the Owner.

#### 1.06 JOB CONDITIONS

- A. The landscape work shall be installed by a single firm specializing in landscape work.
- B. The Contractor shall observe the conditions under which his work is to be performed, and notify the Architect of any unsatisfactory conditions. He shall not proceed with his work until unsatisfactory conditions have been corrected in a manner acceptable to both.
- C. The Contractor shall proceed with, supervise, and complete planting work as rapidly as possible.
- D. Determine location of all underground utilities and perform work in a manner which will avoid possible damage. Hand excavate, as required, to minimize the possibility of damage to underground utilities. Maintain grade stakes set by others until removal is mutually agreed upon by all parties concerned.
- E. Plant trees and shrubs after final grades are established and prior to planting of grasses, unless otherwise acceptable to the Landscape Architect. If planting of trees and shrubs occurs after seeding, protect seeded areas and promptly repair any damage resulting from planting operations.

#### 1.07 SITE AND BUILDING MAINTENANCE / RESTORATION

- A. At completion of the work any areas adjacent to the actual work which have been disturbed due to any construction/demolition activities of the general contract, and the alteration or restoration of which is not specifically included in any section of the specifications, shall be restored to the original condition unless noted on the drawings. This shall include removal and replacement of any damaged paving, lawn areas, shrubbery and plantings and any other incidental items.
- B. Restoration work shall be in accordance with the requirements of these specifications for similar or adjacent work where such exist, otherwise all work shall be as directed by the Owner's Representative and at the Contractor's expense.
- C. At completion of the work, any areas of adjacent municipal or private property which are damaged or disturbed as a result of work completed under the general contract shall be corrected or replaced at the Contractor's expense.

## 1.08 QUALITY ASSURANCE

- A. Regulatory Requirements:
  - 1. Perform work in accordance with all applicable laws, codes, and regulations required by authorities having jurisdiction over such work.
  - 2. Provide for all inspections and permits required by federal, state and local authorities in furnishing, transporting, and installing materials.
- B. Requests for Inspection:
  - 1. The Contractor shall request a site inspection by the Landscape Architect to approve the staked location of proposed trees and shrubs.
  - 2. The Contractor shall request a site inspection by the Landscape Architect to observe planting work in progress.

## 1.04 QUALITY CONTROL

- A. Plant Material Review and Tagging:
  - 1. At the discretion of the Landscape Architect, all trees and shrubs will be reviewed, photographed, and tagged by the Landscape Architect at the nursery, or other place of growth, prior to delivery of the trees and shrubs to the site.
  - 2. Tagging of plant material at the nursery or place of growth does not cancel the right of the Landscape Architect to reject plant material at the site, if damage or unacceptable conditions are found that were not detected at the nursery, place of growth, or in the submitted photographs.
- B. The Owner and the Landscape Architect reserve the right at any time to reject any and all work and materials that, in the opinion of either, do not meet the requirements of this specification. Remove all rejected material from the site and replace with the acceptable specified product.
- C. Other governing authorities reserve the right to inspect plant material at the growing site or nursery. Include all inspection certificates with invoices if requested by Architect.
- D. Package standard products with manufacturers' certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agricultural Chemists, wherever applicable or as further specified.
- E. When requested by the Landscape Architect, submit 2 copies of certificates of inspection as required by governmental authorities, and the manufacturer's or the vendor's certified analysis for soil amendments and fertilizer materials.
- F. Before furnishing additional topsoil or subsoil, furnish the address of origin and have it inspected and approved by the Landscape Architect.
- G. Plant totals given in the Plant List are for the convenience of the Contractor only. All planting indicated on the drawings shall be required.

- H. Native Tall Grass areas shall be seeded after May 1, (when soil is free of frost and in workable condition), but before June 15 or after October 1, but before November 30 (or prior to freeze-up) or as directed by Landscape Architect.

## PART 2 PRODUCTS

### 2.01 MANUFACTURERS

- A. Seed Substitutions:
  - 1. If proof is submitted that any seed specified is not obtainable, a proposal will be considered for use of the nearest equivalent variety with corresponding adjustment of Contract price.
  - 2. Substantiate such proof in writing no later than 30 days after award of contract.
  - 3. The above provisions shall not relieve Contractor of the responsibility for obtaining specified seed in advance if special growing conditions or other arrangements must be made in order to supply specific materials.
- B. Plant Substitutions:
  - 1. Accepted substituted plants shall be true to species and variety and shall conform to measurements specified except that plants larger than specified may be used if accepted. Use of such plants shall not increase Contract price.
  - 2. Provide trees and shrubs of the sizes shown or specified. If larger plants are accepted, increase the ball of earth in proportion to the size of the plant.
  - 3. If specified landscape material is not obtainable, submit to Landscape Architect proof of unavailability and proposal for use of equivalent material. When approved and authorized in writing, adjustment of the contract amount will be made.

### 2.02 TOPSOIL

- A. The Contractor shall provide all topsoil as required to complete landscape work as part of this bid as described in Section 02216. On-site material may be used if it meets this specification and is approved by the Landscape Architect.

### 2.03 PLANT MATERIALS

- A. Name and Variety: Provide plant materials true to name and variety established by the American Joint Committee on Horticultural Nomenclature, "Standardized Plant Names," Second Edition, 1942.
- B. Provide trees and shrubs grown in a recognized nursery in accordance with good horticultural practices. Provide healthy, vigorous stock grown under climatic conditions similar to conditions in the locality of the project for at least two years unless otherwise specifically authorized and free of disease, insects, eggs, larvae, and defects such as knots, sun-scald, injuries, abrasions, or disfigurement.
- C. Condition of Root System: Plants shall be free of kinked, circling or girdling trunk surface and center roots, and shall not be root-bound. They shall have healthy well-developed root systems. Container plants shall not have cracked or broken rootballs.



- D. Measurements of plants shall be taken with branches in normal position, before pruning. The caliper of tree trunks shall be taken 6" above the ground level up to and including 4" caliper and 12" above ground for larger sizes.
- E. Trees shall be heavily branched and well leafed.
- F. Plant quality and handling shall conform to the current standards of the American Association of Nurserymen, Inc. and the American Standard for Nursery Stock.
- G. Deciduous Trees: Provide trees of height and caliper listed or shown with branching configurations recommended by ANSI Z60.1 for type and species required. Provide single stem trees except where special forms are shown or listed. Provide balled and burlapped (B&B) deciduous trees.
- H. Deciduous Shrubs: Provide shrubs of the height shown or listed and with not less than the minimum number of canes required by ANSI Z60.1 for the type and height of shrubs required. Provide balled and burlapped (B&B) deciduous shrubs.
- I. Coniferous and Broad leafed Evergreens: Provide evergreens of the sizes shown or listed. Dimensions indicate minimum spread for spreading and semi-spreading type evergreens, and height for other types, such as globe, dwarf, cone, pyramidal, broad upright and columnar. Provide normal quality evergreens with well-balanced form complying with requirements for other size relationships to the primary dimension shown. Provide balled and burlapped (B&B) evergreens.
- J. Unacceptable Conditions: Trees which have multiple leaders, unless specified, or damaged or crooked leaders, will be rejected. Trees having a main leader shall not have been headed back. Trees with abrasions of the bark, sun-scalds, disfiguring knots, or fresh cuts of limbs over 3/4 inch diameter which have not completely callused, will be rejected.

2.04 TALL GRASS PRAIRIE SEED MIX

- 1. Seed shall be fresh, clean, native seed of the plant material specified and from a recognized nursery of this region. Mix shall be adapted for clay loam soils.
- 2. Contractor shall confer with Landscape Architect prior to ordering seed and shall submit an invoice following purchase and delivery of the seed. The invoice shall list species and quantities supplied.
- 3. Seed shall be fresh, clean, native seed of the plant material specified as available from Michigan Wildflower Farm, Portland, MI 517-647-6010, or Prairie Nursery, Westfield, WI 608-296-3679.
- 4. Grass Seed Mix:

<u>Botanical Name</u>	<u>Common Name</u>	<u>Quantity/Acre</u>
Andropogon scoparius	Little Bluestem	1 lbs. 11 oz.
Bouteloua curtipendula	Sideoats Grama	1 lbs. 4 oz.
Panicum virgatum	Switchgrass	1 lbs. 4 oz.

Wildflower Seed Mix:

<u>Botanical Name</u>	<u>Common Name</u>	<u>Quantity/Acre</u>
Asclepias tuberosa	Butterflyweed	10 oz.
Aster novae-angliae	New England Aster	5 oz.
Coreopsis lanceolata	Lanceleaf Coreopsis	1 lbs. 3 oz.
Echinacea purpurea	Purple Coneflower	1 lbs. 3 oz.
Euphorbia corollata	Flowering Spurge	5 oz.
Geum triflorum	Prairie Smoke	10 oz.
Liatris aspera	Rough Blazingstar	3 oz.
Liatris pycnostachya	Prairie Blazingstar	10 oz.
Penstemon digitalis	Smooth Penstemon	3 oz.
Rudbeckia hirta	Black-eyed Susan	10 oz.
Solidago speciosa	Showy Goldenrod	3 oz.
Annual, non-native, non-hardy mix		4 lbs. 13 oz.

2.05 BIOSWALE SEED MIX

1. Seed shall be fresh, clean, native seed of the plant material specified and from a recognized nursery of this region. Mix shall be adapted for clay loam soils.
2. Contractor shall confer with Landscape Architect prior to ordering seed and shall submit an invoice following purchase and delivery of the seed. The invoice shall list species and quantities supplied.
3. Seed shall be fresh, clean, native seed of the plant material specified as available from Spence Restoration Nursery, Muncie, IN 762-286-7154.
4. Grass Seed Mix:

<u>Botanical Name</u>	<u>Common Name</u>	<u>Quantity/Acre</u>
Carex frankii	Frank's Sedge	4 oz.
Carex hystericina	Porcupine Sedge	1 oz.
Carex shortiana	Short's Sedge	1 oz.
Carex vulpinoidea	Fox Sedge	4 oz.
Elymus riparius	Riverbank Wild Rye	12 oz.
Elymus virginicus	Virginia Wild Rye	64 oz.
Glyceria striata	Fowl Manna Grass	2 oz.
Leersia oryzoides	Rice Cut Grass	2 oz.
Panicum virgatum	Switchgrass	2 oz.
Spartina pectinata	Prairie Cordgrass	4 oz.

Wildflower Seed Mix:

<u>Botanical Name</u>	<u>Common Name</u>	<u>Quantity/Acre</u>
Alisma subcordatum	Water Plantain	1 oz.
Asclepias incarnata	Swamp Milkweed	2 oz.
Aster puniceus	Swamp Aster	1 oz.
Aster simplex	Panicled Aster	1 oz.
Boltonia latisquama	False Aster	1 oz.
Cassia hebecarpa	Wild Senna	2 oz.
Eupatorium maculatum	Spotted Joe-Pye Weed	2 oz.
Eupatorium perfoliatum	Boneset	1 oz.
Helenium autumnale	Autumn Sneezeweed	1 oz.
Lycopus americanus	Water Horehound	1 oz.

Mimulus ringens	Monkeyflower	1 oz.
Penstemon digitalis	Foxglove Penstemon	1 oz.
Silphium perfoliatum	Cupplant	3 oz.
Solidago gigantea	Late Goldenrod	1 oz.
Solidago riddellii	Riddell's Goldenrod	1 oz.
Verbena hastata	Blue Vervain	2 oz.
Vernonia fasciculata	Smooth Ironweed	2 oz.

## 2.06 MISCELLANEOUS LANDSCAPE MATERIALS

- A. Water:
1. Quality: Clean, fresh and potable.
  2. Source: On-site point of connection.
  3. Cost: Paid for by Contractor.
  4. Delivery: Transport or pump as required.
- B. Herbicide:
1. Herbicide-A. Glyphosate, a nonselective herbicide shall be used to eradicate existing vegetation. It shall be used according to the manufacturer's label.
  2. Herbicide-B. Sethoxydim, a selective herbicide shall be used to selectively remove invasive grass from Native Tall Grass and Bioswale planting areas. It shall be used according to the manufacturer's label.
- C. Anti-Desiccant:
1. Quality: Anti-desiccants for retarding excessive loss of plant moisture and inhibiting wilt shall be sprayable, water insoluble vinyl-vinylethylene complex which will produce a moisture retarding barrier not removable by rain or snow.
  2. Product: Wilt-pruf Formula NCF, or accepted substitute.
  3. Manufacturer: Nursery Specialty Products, Greenwich, CT, or accepted substitute.
- D. Manure: Dried cow manure shall be standard commercial type such as Kapco, Farmer Green and Baughman.
- E. Wood Chip Mulch: Coarse grade oak or maple bark on flat planting areas; shredded oak or maple bark mulch on slopes; aged at least one year and uniform in color and texture.
- F. Mulch – Native Tall Grass:
1. Material shall be clean chopped straw from winter wheat or annual oats to protect seeded areas from invasive species frequently found in common straw. No other type of mulch is acceptable. It shall be natural and suited for horticultural use and not contain lumps, roots or other foreign matter over one inch in diameter. It shall be free of seeds and noxious weeds. Mulch shall not contain more than 35% moisture by weight
  2. Type of straw shall be verified in writing from supplier.

- G. Staking Materials:
  - 1. Tree Stakes:
    - a. Sound new hardwood, treated softwood, or redwood, free of knot holes and other defects, with 10 in. tapered driving point and chamfered top.
    - b. Heavy duty "T" posts.
  - 2. Ties: Two-strand twisted, pliable galvanized iron wire not lighter than 12 gauge.
  - 3. Tie Covers: 1/2 inch minimum diameter 2-ply garden hose or 3/8 inch diameter white plastic tubing, three feet long.
  
- H. Guying Materials:
  - 1. Deadmen: Sound new hardwood, treated softwood, or redwood, free of knot holes and other defects; screw-type galvanized steel ground anchor, or Universal ground anchors, as manufactured by Laconia Malleable Iron Company, Laconia, NH.
  - 2. Hardware:
    - a. Guying Cable: Two-strand twisted, pliable galvanized iron wire not lighter than 12 gauge.
    - b. Turnbuckles: galvanized
    - c. Cable Clamps: galvanized, size as required.
    - d. Guy Covers: 1/2 inch minimum diameter 2-ply garden hose or 3/8 inch diameter white plastic tubing, three feet long.
  
- I. Tree Guard Fencing: Tree Guard Fencing shall be of rigid black plastic mesh construction. Each mesh opening is not to exceed two (2) square inches. Tree guard fencing must allow unimpeded ventilation, light penetration and trunk protection from animals and maintenance equipment. Contractor shall attain material approval from Owner before purchasing.
  
- J. Erosion Control Blanket:
  - 1. Erosion control blanket shall be North American Green Straw Erosion Control Blanket S150 BN, 100% biodegradable, jute netted or approved substitution.
  - 2. Pegs shall be of sound wood and sized per MDOT Standard Specifications, latest edition.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Finish Grade and Soil Preparation Verification: Verify fine grading and soil preparation work is complete.
  
- B. Verification Surface Drainage: Verify positive surface drainage of planted areas.
  
- C. Verification of Conditions: Examine site and verify that conditions are suitable to receive work and that no defects or errors are present which would cause defective installation of products or cause latent defects in workmanship and function.
  
- D. Unsuitable conditions: Before proceeding with work, notify Owner and Landscape Architect in writing of all unsuitable conditions.

### 3.02 PREPARATION

- A. Protection of Existing Conditions:
  - 1. General: Use every possible precaution to prevent damage to existing conditions to remain such as structures, utilities, plant materials and walks on or adjacent to the site of the work.
  - 2. Barriers: Provide barricades, fences or other barriers as necessary to protect existing conditions to remain from damage during construction.
  - 3. Operations: Do not store materials or equipment, permit burning, or operate or park equipment under the branches of all existing plants to remain.
  - 4. Notification: Give written notification of all damaged plants and structures.
- B. All trees and shrubs shall be balled and burlapped. No item will be accepted with the ball damaged or plant dislodged from the container.
- C. All finish grading shall be completed and approved by Landscape Architect before planting begins. Provide specified planting mix in planting areas as detailed on the drawings.
- D. The Contractor shall stake out locations of all trees and shrubs for approval by the Landscape Architect prior to the planting of any plant material.

### 3.03 SOIL PERCOLATION TESTS

- B. Tests Prior to Plant Pit Excavation:
  - 1. In areas of suspected poor drainage drill 8-inch diameter minimum, 4 feet deep holes and fill with water twice in succession.
  - 2. Submit to Landscape Architect written notification of retention of water in holes for more than 24 hours.
  - 3. Submit to Landscape Architect location plan showing test holes holding water.
- C. Tree Pit Tests:
  - 1. In areas of suspected poor drainage, fill each plant pit twice in succession.
  - 2. Submit to Landscape Architect written notification of retention of water in holes for more than 24 hours.
  - 3. Submit to Landscape Architect location plan showing test holes holding water.

### 3.04 SUBSURFACE OBSTRUCTIONS

- A. Plant Pit Excavation: If rock, underground construction work, tree roots or other obstructions are encountered in the excavation of plant pits, alternate locations may be accepted by the Landscape Architect.
- B. Cost for Removal of Obstructions: Where locations cannot be changed, submit cost estimate for work to remove the obstructions to a depth of not less than 6 inches below the required pit depth. Proceed with work after Owner's approval.

### 3.05 PREPARATION OF PLANTING SOIL

- A. Before mixing, clean topsoil of roots, plants, sod, stones, clay lumps and other extraneous materials harmful or toxic to plant growth. Soil for backfilling shall meet specifications in Section 02920.

### 3.06 EXCAVATION FOR TREES AND SHRUBS

- A. Excavate pits, beds and trenches with vertical sides and with bottom of excavation slightly raised at the center to provide proper drainage. Loosen hard subsoil in bottom of excavation. For balled and burlapped (B&B) trees and shrubs, make excavations at least twice as wide as the ball diameter and equal to the ball depth, plus the following allowance for setting of the ball on a layer of compacted backfill.
- B. Allow for 3" setting layer of planting soil mixture. For container grown stock, excavate as specified for balled and burlapped stock, adjusted to size of container width and depth.
- C. Dispose of excess subsoil removed from landscape excavations.
- D. Fill excavation for trees and shrubs with water and allow to percolate out before planting.

### 3.07 PRODUCT DELIVERY, STORAGE AND LABELING

- A. Labeling:
  - 1. Furnish standard products in unopened manufacturer's standard containers bearing original labels showing quantity, analysis and name of manufacturer.
  - 2. Seed analysis shall be attached to outside as well as inside container, showing species, germination, purity, name of certified testing agency and date of test.
  - 3. No seed will be accepted unless test date is within 8 months of planting date.
- B. Provide freshly dug trees and shrubs. Do not use trees or shrubs which have been in cold storage or heeled-in unless approved by Architect. Do not prune prior to delivery. Do not bend or bind-tie trees or shrubs in such a manner as to damage bark, break branches or destroy natural shape. Pruning: Do not prune plants before delivery. For pruning after installation, see Section 02975. Provide protective covering during delivery.
- C. Anti-Desiccant:
  - 1. Spray all evergreen or deciduous plant material in full leaf immediately before transporting with anti-desiccant.
  - 2. Apply an adequate film over trunks, branches, twigs and foliage.
- D. Digging: Dig ball and burlap (B & B) plants with firm, natural balls of earth of diameter meeting requirements of ANSI Z60.1-1990 and of sufficient depth to include the fibrous and feeding roots.
- E. Delivery and Storage:
  - 1. Ship and store seed, mulch and fertilizer with protection from weather or other conditions which would damage or impair the effectiveness of the product.

2. Deliver trees and shrubs after preparations for planting have been completed, and plant immediately. If planting is delayed more than 6 hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist.
3. Items which have become wet, moldy, or otherwise damaged in transit or in storage, will be rejected.

F. Handling:

1. Do not lift or handle container plants by tops, stems or trunks at any time.
2. Do not bind or handle plants with wire or rope at any time.

### 3.08 PLANTING TREES AND SHRUBS

- A. Unless otherwise specified, plants shall be planted in pits and shall be set at such level that after settlement they bear the same relation to the finished grade or the surrounding ground as they bore to the grade of the soil from which they were taken.
- B. Plants shall be planted with 6" of planting mixture, loosely but uniformly spread over the bottom of the plant pit, and balance of the pit filled only with planting mixture.
- C. Balled plants shall be planted with planting mixture carefully washed around and under the base of each ball to fill voids. No cloth shall be pulled out from under balls.
  1. Binding cords to be completely removed or cut from all tree balls after placement.
  2. Wire baskets shall be completely removed from the top a of the root ball.
  3. Set balled and burlapped (B&B) stock on the layer of compacted planting soil mixture, plumb and in the center of pit or trench with top of the ball at same elevation as adjacent finished landscape grades allowing for settlement. When set, place additional backfill around base and sides of the ball, and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 1/3 full, water thoroughly, and allow to drain. Remove burlap from sides of balls; leave on bottoms. Place the remainder of the backfill and again water thoroughly.
  4. Trees shall be set plumb and rigidly braced in position until soil has been tamped solidly around the ball and roots. The planting mixture shall be flushed into place with a slow, full hose stream until all air pockets are eliminated, and the pit filled to saucer grade.
- D. The grade of plant pits, beds and lawn areas, when completed and settled, shall either be level or uniformly sloped to points no higher than nor more than 1" lower than adjoining grades.
- E. Saucer top or backfill over plant pits to allow for watering and mulching of mulch pits, trenches and planted areas. Provide not less than 4" thickness of mulch, work first 1" into top of backfill and blend the remainder with adjacent finish grades.
- F. Prune, thin out and shape trees and shrubs in accordance with standard horticultural practice. Prune trees to retain the required height and spread. Unless otherwise directed by the Architect, do not cut tree leaders, and remove only injured or dead branches from evergreen and flowering trees, if any. Prune shrubs to retain natural character and accomplish their use in the landscape design. Required shrub sizes are the size after pruning. Do not prune more than 1/3 of the branching structure.

1. Remove and replace excessively pruned or deformed stock resulting from improper pruning.
  2. Existing trees remaining on the site shall be pruned or repaired as necessary to accommodate new plantings or repair damage which results from any activity of the general contract at no additional expense to the Owner.
- G. Guy and stake trees immediately after planting, as required. Trees shall be staked as shown on the landscape drawings. The Contractor shall be responsible for resetting fallen or leaning trees.
- H. Tree Wrap and Tree Guard Fencing:
1. No Tree Wrap shall be used.
  2. Contractor shall install tree guard fencing, or similar product approved by Owner, around the trunks of all newly planted trees covering a minimum of four (4) feet in height from the base of the trunk. Installation must allow one (1) inch minimum clearance on all sides between the fence and trunk, and is not to exceed four (4) inches.

### 3.08 Tree Staking

- A. General:
1. Stake all trees under 3 inches caliper as described below.
  2. Size and Quantity: Refer to Tree Stake Schedule below.
  3. Location: Locate stakes in a line with trunk of tree, parallel to the prevailing wind and as close to the main trunk as practical, avoiding root injury.
  4. Depth:
    - a. Drive 8 feet long stakes at least two feet into firm ground.
    - b. Drive 10 feet long stakes at least three feet into firm ground.
  5. Tying Tree to Stakes:
    - a. Hold trunk in one hand, pull top to one side and release. Height at which trunk will snap back to upright is Base Height.
    - b. Attach tree ties to trunk 6 inches above Base Height.
    - c. Nail ties to stakes using 2 galvanized roofing nails at each end of tie.
    - d. Cut off any remaining stake 2 inches above upper tree tie.

### 3.09 Guying

- A. General:
1. Guy all trees 3 inches and larger in caliper as described below.
- B. Maintain trees in a healthy, upright position.
1. Select deadmen type which will work with soil type encountered.
- C. Size and Quantity per Tree: Refer to Tree Stake Schedule below.



D. Tree Stake Schedule:

Tree Caliper 12 inches Above Grade	Number of Stakes	Stake Size Diameter x Length
Up to 1¾ inches	2	2 inches x 8 feet
2 to 3 inches	2	3½ inches x 10 feet
3 inches or larger	3	3½ inches x 10 feet

3.10 NATIVE TALL GRASS SEEDING AND BIOSWALE SEEDING

A. General:

1. Contractor shall perform both temporary and permanent seeding operations unless directed otherwise by the Landscape Architect.
2. Native tall grass seeding includes application of the grass seed and wildflower seed mixes.
3. The Contractor shall possess a valid Michigan Department of Agriculture commercial herbicide applicator's certificate.
4. DO NOT FERTILIZE.

B. Temporary Seeding:

1. Following the completion of grading operations, till or disk and then drag or rake so that bed is smooth and free of large clumps.
2. Seed with an annual rye cover crop and mulch entire area immediately after tilling and dragging.

C. Tall Grass Prairie Seeding Operation for Disturbed Areas:

1. Lightly drag or rake smooth without tilling so that bed is smooth and free of large clumps.
2. Seed immediately after light drag.
3. Apply wildflower seed mix with a broadcast spreader at a rate of 10 lbs. 14 oz. per acre.
4. Apply grass seed mix (Little Bluestem, Sideoats Grama, and Switchgrass) with grain drill a rate of 4 lbs. 3 oz. per acre.
5. Sow seed into soil in several directions to avoid uniform rows. Seed shall be sown with masons sand as a carrier. The mixture of seed to carrier shall consist of equal parts seed to sand. Lightly rake to incorporate seed into soil.
6. Roll entire area immediately following seeding.
7. Lightly mulch entire area with chopped straw so as to not cover more than 70% of the soil surface or apply erosion control blanket where indicated on plans.

D. Bioswale Seeding Operation:

1. Lightly drag or rake smooth without tilling so that bed is smooth and free of large clumps.
3. Seed immediately after light drag.
4. Apply bioswale seed mix with a broadcast spreader at a rate of 7 lbs. 8 oz. per acre. The bioswale seed mix includes both the grass seed mix and wildflower seed mix.
5. Sow seed into soil in several directions to avoid uniform rows. Seed shall be sown with masons sand as a carrier. The mixture of seed to carrier shall consist of equal parts seed to sand. Lightly rake to incorporate seed into soil.

6. Roll entire area immediately following seeding.
7. Lightly mulch entire area with chopped straw so as to not cover more than 70% of the soil surface or apply erosion control blanket where indicated on plans.

E. Methods of Sowing Seeds:

1. For small areas and on slopes 3:1 or steeper seeding shall be by hand on a calm day (winds between 0 and 5 mph). Sow evenly. Lightly rake the soil to cover the seed. Firm with roller to provide consistent soil and seed contact. For small areas, seed may be mixed with slightly moist sand to aid in uniform coverage.
2. For large areas seed shall be drilled into soil with a native seed drill (a billion seeder will not work with native seed) moving in several directions, perpendicular and parallel to contours, making two or three passes over each area to avoid uniform rows of grass and forbs. Rolling of the seedbed shall not be required with this method.
3. Where the physical conditions of the site prohibit the use of a native seed drill the broadcast method of seeding will be allowed. For broadcast seeders no seeds shall be sown during high winds (greater than 5mph) or when the bed is not in a proper condition for seeding. It is recommended that the broadcast method be used to install annual seed. Within twelve hours if conditions permit or as soon thereafter as practical, all seeded areas shall be rolled at right angles to the run-off with a drag chain to compact the seedbed and place the seed in contact with the soil.

3.11 AGGRESSIVE NON-NATIVE GRASSES AND FORBS

- A. Annual invasive weeds such as crabgrass, purple knapweed, purple loosestrife, yellow or white sweet clover, black medic or other invasive plants shall be spot controlled beginning in June with Herbicide-B until the end of the first full growing season and/or before the plants set seed.

3.12 EROSION CONTROL BLANKET INSTALLATION

- A. Install erosion control blanket per manufacturer's specifications in locations indicated on plans. In addition, erosion control blanket may be installed where the Contractor feels it necessary to stabilize the site. Additional blanket beyond what is indicated on the plans shall be at the expense of the Contractor.
- B. Begin at top of the slope by anchoring the blanket in a 6" deep x 6" wide trench. Backfill and compact the trench after staking.
- C. Roll the blankets down the slope in the direction of the water flow.
- D. The edges of parallel blankets must be staked with approximately 2" overlap. When blankets must be spliced down the slope, place blankets end over end (shingle style) with approximately 6" overlap. Stake through overlapped area, approximately 12" apart.
- E. In general, stake blanket approximately one (1) stake per one (1) square foot.

3.13 FIELD QUALITY CONTROL

- A. Interim Field Observation Reviews by Landscape Architect: Coordinate and schedule with Landscape Architect.
- B. Preliminary and Final Review: Refer to Section 02975.

## PART 4 PROTECTION AND MAINTENANCE

### 4.01 SCHEDULING

- A. The Contractor shall assume responsibility for maintaining his work to the end of the guarantee period for each portion of the work. During this period, the Contractor shall make a minimum of one maintenance trip every four weeks during the growing season, and as many more as necessary to keep the planting in a thriving condition.
- B. The Contractor shall submit a schedule of proposed maintenance visits with basic tasks such as mowing, fertilizing, pruning, etc., outlined for the Landscape Architect's and Owner's review and approval. The Contractor shall notify Owner's on-site representative at the start and completion of each visit during which time problem areas related to the landscape installation of this contract will be discussed and corrective strategy undertaken.
- C. Failure of the Contractor to fulfill the schedule of maintenance visits will result in the forfeiture of monies expended by the Owner in fulfilling these responsibilities from the guarantee retainage.

### 4.02 TALL GRASS PRAIRIE AND BIOSWALE MAINTENANCE

- A. It is the responsibility of the Contractor to establish a dense coverage of permanent grasses, free from lumps and depressions. Any part of the seeded area that fails to show a uniform germination shall be reseeded and such reseeding shall continue until a dense coverage is established.
- B. The Contractor shall water the grasses until final acceptance. Damage to seeded areas resulting from erosion shall be repaired by the Contractor. Scattered bare spots will not be allowed more than 3% of the seeded area. When the above requirements of the specifications have been fulfilled, the Contractor will request acceptance of the seeded work, and, if accepted, the Owner will continue with the maintenance. Any areas that are not acceptable at this time shall be reseeded and will continue under the Contractor's maintenance until final acceptance. Continued maintenance shall include watering and mowing as necessary to keep the seeded area in a thriving condition.

### 4.03 PLANT MATERIAL MAINTENANCE

- A. Maintenance of planting shall consist of pruning, cultivating, weeding, fertilizing, maintaining proper soil moisture content, keeping guying taut and trees erect, raising tree balls which settle below grade, and furnishing and applying such sprays as are necessary to keep the planting free of insects and diseases, and in good health.
- B. Maintain work to the end of the guarantee period.
  - 1. Watering: Water as necessary to keep the plant material in thriving condition.
  - 2. Weeding: Keep planting beds, ground cover beds, and tree saucers free from weeds.
  - 3. Spraying: Spraying shall encompass (a) dormant oil with ethion for scale insects, (b) malathion for leaf eating insects, and (c) bordeaux mixture for fireblight control.

These shall be applied in accordance with the manufacturer's recommendations and in the proper strength and number of applications for the particular insect or disease.

4. Refertilization: Refertilize with "Rapid-Gro" or an approved equal that is completely water-soluble and contains not less than 23% nitrogen, 21% phosphorous, and 17% potassium. Apply two applications four weeks apart between May 15 and July 1 at the rate of one pound of fertilizer to 30 gallons of water for trees three inches caliper and larger, and at the rate of one-third pound of fertilizer to 10 gallons of water per tree for all smaller trees. Fertilize shrubs with the solution at the rate of one gallon per shrub, two applications four weeks apart between May 15 and July 1.  
Fertilize ground cover areas per manufacturer's recommended dilution rate every four weeks from May 1 through August 30.
5. Adjustments: Keep trees erect. Raise trees that settle below the finished grade to the established elevation. Keep the tree wrap in neat condition. Remove at completion of the guarantee period.
6. Pruning: Prune dead or broken branches from all deciduous trees and shrubs.
7. Grade Adjustments: Fill with topsoil to the original grade level areas that have settled around trees and shrubs.
8. Winter Protection: Winter protection shall include late fall spraying of all evergreen trees and evergreen shrubs with Wilt-Pruf, or approved equal, at the manufacturer's recommended rate to prevent winter desiccation as well as late fall watering if requested by the Architect in writing.

## PART 5 - GUARANTEE

### 5.01 SUMMARY AND CONDITIONS

- A. The Contractor agrees to guarantee all plants for one (1) year from the final date of completion of all planting, i.e., the date the Owner and Architect accept in writing all installed material and workmanship. When Contractor completes his work, he should request this inspection. This guarantee includes furnishing new plants as well as labor and materials for installation and maintenance of replacements. Only one replacement per plant is required during the guarantee period. Ground cover to be replaced as required until established.
- B. The Contractor shall not assume responsibility for damages or loss of plants or trees caused by fire, flood, lightning storms, freezing rains, winds more than 60 miles per hour, or vandalism.
- C. Inspection of the plantings will be made jointly by the Contractor and the Architect at the completion of planting. All plants and seeded areas not in a healthy, growing condition shall be removed and replaced with plants of like kinds, size, and quality as originally specified before the close of the next planting season. The Architect shall have final authority on which plants are to be replaced.
- D. At the end of the guarantee period or sooner, if so directed by the Architect, the Contractor shall remove all guying, staking and fencing from the site.
- E. The Architect shall notify the Contractor in writing of the acceptance of the work. Such notification and only such notification constitutes the start of the guarantee period.

Specified maintenance shall occur throughout the installation period to the end of the guarantee period.

- F Ten percent (10%) of the total landscape subcontract amount shall be withheld by the Owner to insure proper performance of maintenance and guarantee items. This amount shall be released at the end of the guarantee period upon written notification from the Architect that the Contractor has fulfilled his obligations outlined by these specifications.

END OF SECTION

SECTION 02511  
AGGREGATE PAVEMENT

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
  - 1. Fine Grading Subgrade
  - 2. Aggregate Pavement Materials and Installation
- B. Related Sections:
  - 1. Section 02200 Earthwork

1.02 REFERENCES

- A. ASTM - American Society for Testing and Materials:
  - 1. Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort, ASTM D 1557-91
- B. MDOT - Michigan Department of Transportation, "Standard Specifications for Construction", Current edition

1.03 DEFINITIONS

- A. Subgrade: The soil surface on which aggregate pavement is placed.
- B. Aggregate Pavement: Aggregate path or drive material.
- C. Finished Grades: The required final grade elevations of aggregate pavement indicated on the Grading Drawings.
- D. Acceptance: Wherever the terms "acceptance" or "accepted" are used herein, they mean acceptance of Landscape Architect in writing.

1.04 SUBMITTALS

- A. Samples:
  - 1. Aggregate Drive Materials: 2 pound plastic bag

1.05 QUALITY ASSURANCE

- A. Regulatory Requirements:
  - 1. Perform work in accordance with all applicable laws, codes, and regulations required by authorities having jurisdiction over such work.

**B. Delivery, Storage and Handling:**

1. Aggregate materials shall be delivered to the site in a thoroughly blended condition and handled in such a manner as to minimize separation and avoid mixing of underlying material with the aggregate.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

**A. Aggregate Drive Material:**

1. Crushed limestone graded to conform to MDOT Specification for 21AA aggregates.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verification of Subgrade: Review subgrade to verify that it has been graded to the correct grades as required for correct installation of the aggregate pavement.
- B. Verification of Conditions: Examine site and verify that conditions are suitable to receive work and that no defects or errors are present which would cause defective installation of products or cause latent defects in workmanship and function.
- C. Unsuitable conditions: Before proceeding with work, notify Owner and Landscape Architect in writing of all unsuitable conditions and conflicts.

**3.02 PREPARATION**

**A. Protection of Existing Conditions:**

1. General: Use every possible precaution to prevent damage to existing conditions to remain such as structures, utilities, irrigation systems, plant materials and paving on or adjacent to the site of the work.
2. Barriers: Provide barricades, fences or other barriers as necessary to protect existing conditions to remain from damage during construction.
3. Operations: Do not store materials or equipment, permit burning, or operate or park equipment under the branches of existing plants to remain.
4. Notification of Damages: Submit written notification of all conditions damaged during construction to the Owner and Landscape Architect immediately.
5. Determination of Damage: Landscape Architect will determine the extent of damage and value of damaged plant material.
6. Replacement of Existing Plant Material: Replace existing plants to remain which are damaged during construction with plants of the same species and size as those damaged at no cost to the Owner.

**B. Finish Grading of Subgrade:**

1. General: Grade subgrade with uniform slope between points where elevations are given.

2. Equipment: Use equipment of proper size and appropriate type to achieve grades required.
3. Subgrade Tolerance: Grade subgrade to within 0.10 foot of finish grade minus aggregate pavement thickness.
4. Depressions and Loose Material: Fill and compact any depressions, and remove all loose material to finish true to line and grade, presenting a smooth, compacted, and unyielding surface.
5. Compaction: Compact subgrade to a minimum 95 percent relative compaction as determined by ASTM D 1557-91.
6. Cleaning of Subgrade: Remove all debris, loose dirt and other extraneous materials before installing aggregate pavement material.

### 3.03 SURVEY REQUIREMENTS

- A. Lines and Levels: Establish lines and levels, locate and lay out by instrumentation and similar appropriate means for all aggregate pavement finish grades.
- B. Staking: Provide a sufficient quantity of grade stakes as required to provide aggregate pavement with smooth finish grades and positive drainage.

### 3.04 AGGREGATE PAVEMENT INSTALLATION

- A. Equipment:
  1. Place aggregate materials with equipment of adequate size and appropriate type to achieve timely placement of aggregate without damage to the subgrade or adjacent conditions.
  2. Placement of the aggregate materials shall be by means of a moving vehicle equipped with spreader box, mechanical spreader, or other approved equipment capable of laying the courses so that the finished layer will be of the proper gradation and thickness.
  3. If hauling equipment should cause ruts in subgrade, equipment will not be permitted on subgrade but shall be operated on aggregate surface behind spreader.
- B. Depth: Place material in one uniform layer to such a depth that, when graded and compacted, it will have a final thickness as shown in the typical section on the Plans.
- C. Surface:
  1. Spread uniformly and then shape with an approved road maintainer or grader until the surface is free from waves and irregularities.
  2. The surface shall not show any deviations in excess of one-half inch (1/2") in any direction when tested with a 10' straight edge.
  3. The surface width shall be as indicated on plans.
- D. Compaction:
  1. Compact immediately after placing limestone with steel wheeled rollers and/or pneumatic tired rollers to not less than 100% maximum unit weight.
  2. Compact areas not accessible to rollers by mechanical or hand tampers.
  3. All rolling equipment shall be capable of delivering at least 200 pounds per lineal inch of rolling width.



- 4. Shaping alternating with rolling shall be continued until the limestone is properly compacted.
- E. Water: Water may be required to properly shape the base, compact and maintain aggregate surface during construction of the project. Water shall be applied by the use of approved sprinkler equipment.

3.05 MAINTENANCE DURING CONSTRUCTION

- A. Condition: Maintain completed surface in a smooth, compacted condition, substantially true to line, grade and cross-section until accepted.
- B. Reshaping: Application of water may be required to facilitate reshaping compacted surface prior to acceptance.

3.06 FIELD QUALITY CONTROL

- A. Interim Field Observation Reviews by Landscape Architect: Coordinate and schedule with Landscape Architect.

END OF SECTION

SECTION 02512  
BITUMINOUS PAVEMENT

PART 1 GENERAL

1.01 GENERAL

A. Description

1. The work of this section consists of constructing bituminous pavements on an aggregate base as shown on the drawings and specified herein.

B. Related Sections

1. Section 02200      Earthwork

1.02 REFERENCES

A. References Specifications

1. The work shall comply with requirements of the current Michigan Department of Transportation "Standard Specifications for Construction" referred to as MDOT, unless otherwise specified.
2. Where references, work shall conform to American Association of State Highway and Transportation Officials "Standard Specifications" referred to as AASHTO.

1.03 SUBMITTALS

- A. Certified Test Reports: Prior to construction, submit certified test reports for all contractor-supplied materials.
- B. Field Test Reports: During construction, submit field test reports in accordance with the testing schedule.

1.04 QUALITY CONTROL

A. Testing and Inspection Service

1. Contractor will engage testing and inspection service to perform sampling and testing of bituminous paving materials proposed for use in the work and field testing for quality control during bituminous paving operations. Testing shall be in accordance with MDOT requirements. The requirements listed in this specification are to supplement or clarify the MDOT Specifications.

B. Testing Laboratory Will:

1. Make a Marshall test on a bituminous mix design using a representative aggregate sample from the Contractor's stockpile.
2. Make field density-in-place tests for aggregate base course.
3. Make bituminous mixture tests.

4. Make bituminous paving tests.
5. Submit reports of all tests to the Contractor, Owner and Landscape Architect/Engineer.

C. Contractor Shall:

1. Furnish labor, tools, and equipment necessary to obtain and handle samples required for testing.
2. Deliver to the testing laboratory, representative samples of bituminous mixture materials proposed for use which require testing.
3. Deliver to the testing laboratory, representative samples taken from completed bituminous pavement.
4. Notify testing laboratory and Owner's representative sufficiently in advance of operations that require testing. Consequences of delays incurred through lack of notification are the entire responsibility of the Contractor.

D. Density Tests

1. Field density-in-place tests of aggregate base course will be made at locations directed by the Owner's representative. At least four tests will be made in accordance with ASTM D2167 or other method approved by the Owner's representative. Testing laboratory report shall indicate location of each test.

E. Bituminous Mixture Tests

1. Furnish a representative sample of each hot bin and of completed mix for testing.
2. The testing laboratory will make gradation analysis on hot aggregates, extract the bitumen in accordance with the test for bitumen content of paving mixtures by centrifuge, AASHTO designation T164.
3. The removal of mineral particles will be considered satisfactory when the ash content (by ignition) of the recovered bitumen is not greater than 1 percent by weight.
4. The penetration of the recovered bitumen will be determined in accordance with the test for penetration of bituminous materials, AASHTO designation T49, and the ductility will be determined in accordance with the test for ductility of bituminous materials, AASHTO designation T51.

F. Bituminous Paving Tests

1. Take representative samples for the determination of thickness and density of the completed pavements. The diameter of the specimens shall be as determined by the testing laboratory.
2. At least one sample shall be removed for each 10,000 square feet, and no less than four samples shall be removed for the project. The location for the removal of the samples shall be directed by the Owner's representative.
3. Testing laboratory report will indicate location of each sample removed. The Contractor shall replace the pavement at no additional cost to the Owner.

## PART 2 PRODUCTS

### 2.01 AGGREGATE BASE COURSE MATERIAL

- A. Aggregate shall be crushed stone or crushed limestone conforming to MDOT Specifications for Grade 21AA.

### 2.02 BITUMINOUS PAVING MATERIALS

- A. Bituminous Pavement Courses
  - 1. The pavement shall consist of hot mix bituminous concrete meeting the requirements of MDOT Specifications for base, leveling and surface course.
  - 2. Bituminous Leveling Course
    - a. The leveling course shall be hot asphalt and conform to MDOT Specifications for Bituminous Leveling Course No. 13A HMA.
  - 3. Bituminous Wearing Course
    - a. The wearing course shall be hot mix asphalt and shall conform to MDOT Specifications for Bituminous Wearing Course No. 13A HMA.
- B. Bond Coat
  - 1. Bond or tack coat shall be a MS, SS, CMS or CSS asphalt emulsion conforming to MDOT Specifications.

## PART 3 EXECUTION

### 3.01 CONSTRUCTION OF AGGREGATE BASE COURSES

- A. Subgrade Preparation
  - 1. Before placing this work, inspect subgrade surfaces for line, grade, and compaction.
  - 2. Subgrade surface found to be unsuitable shall be brought up to grade and reconditioned as specified under "Earthwork" section, including the necessary fine grading, to insure that the minimum specified depth of paving will bring the surface to the indicated elevations. If the Owner's representative finds the subgrade surface unsuitable, such surface shall be struck off with approved graders, scarified and wetted, and finally rolled with the addition of sufficient moisture to prevent drying out prior to the placing of the aggregate material.
- B. Equipment
  - 1. Equipment for construction of aggregate base courses is subject to approval by the Owner's representative and shall be maintained in satisfactory working condition at all times.
  - 2. Placing of the aggregate base courses shall be by means of a moving vehicle equipped with spreader box, mechanical spreader, or other approved equipment capable of laying the courses so that the finished layer will be of the proper gradation and thickness.

3. Compaction equipment shall consist of self-propelled tamper or pneumatic-tired rollers or vibrating compactors, and three-wheeled or tandem rollers weighing from 6 to 10 tons and having a weight of not less than 200 pounds or more than 325 pounds per inch width of roller. Equipment shall be capable of obtaining the required density throughout the entire depth of the layer being compacted.

#### C. Placing Aggregate

1. Place aggregate on the subgrade by using approved placing equipment in a uniform layer to the required contour and shape and in layers not more than four inches (compacted) in thickness. Total thickness after compaction shall not be less than indicated. Segregation of large or fine particles will not be acceptable and pockets of segregated material shall be removed and replaced with a satisfactory mixture, or shall be remixed as directed and approved by the Owner's representative.

#### D. Compaction

1. After placing, compact the material by approved means. Rolling shall begin at edges of the area to be compacted and shall proceed towards the center. Areas not accessible to rollers shall be compacted by mechanical tampers.
2. Material shall be compacted to at least 95 percent of maximum unit weight. The moisture content shall be maintained within a tolerance of plus or minus 3 percent of optimum until the prescribed unit weight is obtained, as determined by ASTM D1557.
3. Compact each layer until the maximum unit weight is attained before placing the succeeding layer.

#### E. Density

1. During the construction of aggregate base courses, field density tests will be made as specified under "Testing".
2. If density tests indicate that the base course does not comply with specified density requirements, additional wetting, if necessary, and rolling will be required until the specified density is obtained. Moisture shall be added to the material during compaction only when it is necessary to increase the percentage of moisture to obtain the specified density.

#### F. Finished Surfaces

1. Finished surfaces shall be smooth, even, and true to the lines, grades and cross sections indicated. When tested with a ten-foot strait edge parallel to the center line of the surfaced area, finished surface shall not show a deviation in excess of one-half inch (1/2") in ten feet (10').

### 3.02 CONSTRUCTION OF BITUMINOUS PAVEMENT

#### A. General

1. Bituminous paving shall be applied in one or more layers as indicated, consisting of a leveling course and a wearing course. Thickness after compaction of each bituminous paving course shall be as indicated.

- B. Hot Mix Plant
  - 1. Bituminous mixing plant and preparation and mixing of bituminous mixtures shall comply with MDOT Specifications.
- C. Equipment
  - 1. Placing equipment shall be self-propelled paver capable of spreading the bituminous mixture true to line and grade and in uniform thickness. The machine shall be in good mechanical condition.
  - 2. Rolling equipment shall consist of three-wheeled type and tandem type steel wheel rollers and pneumatic-tired roller complying with MDOT Specifications.
- D. Weather Limitations
  - 1. Mixing and placing of hot bituminous mixture shall be performed only when weather conditions are as limited by MDOT Specifications.
- E. Preparation of Aggregate Base Course
  - 1. Immediately prior to the application of prime coat, remove loose and foreign material.
- F. Transportation of Bituminous Mixture
  - 1. Transport the bituminous mixture in accordance with MDOT Specifications.
- G. Placing
  - 1. Place the bituminous mixture in accordance with MDOT Specifications.
- H. Compaction of the Mixture
  - 1. Begin rolling of the mixture as soon after placing as the mixture will bear the roller without undue displacement or hair cracking. For initial compaction of the bituminous mixture, three-wheel rollers may be used immediately following the paver. Pneumatic-tired rollers may be used as intermediate rollers. Only tandem rollers will be permitted for finish and back rolling.
  - 2. Rolling shall proceed until all roller marks are eliminated and no further compression is possible. To prevent adhesion of the bituminous mixture, the roller shall be kept moist, but excess water will not be permitted.
  - 3. In places inaccessible to rollers, such as adjacent to structures, the required compaction shall be secured with hot hand tampers and hand rollers.
  - 4. The leveling and wearing courses shall be compacted to a minimum of 96 percent of the maximum density at the optimum asphalt content as determined by the marshall test.
- I. Joints
  - 1. Paint contact surfaces of manholes, curbs, and other abutting structures with a thin, uniform coating of asphalt emulsion primer just before placing bituminous mixture against them. Place the mixture uniformly high so that after compaction it will be at finish grade at structures. Make joints between old and new pavements, or between successive days' work, so as to insure thorough and continuous bond

between the old and new mixtures. Before placing the fresh mixture against old pavement, paint the contact surface with a thin, uniform coating of asphalt primer. Where a finishing machine is used, make the longitudinal joint by overlapping the screed on the previously laid material for a width of at least one inch and depositing a sufficient amount of the mixture so that the joint formed will be smooth and tight.

J. Bond Coat

1. Unless wearing course is placed within 24 hours of the leveling course, uniformly apply bond coat at a rate of 0.1 gallon per square yard of surface to the binder or leveling course. Surface shall be cleaned as required if placement of wearing course is delayed.

K. Finished Surface

1. The finished bituminous pavement surface shall be smooth and even, free of voids, and true to the lines, grades, and cross sections indicated. When tested with a ten-foot straight edge parallel to the center line of the surfaced area, finished surface shall not show a deviation in excess of one-quarter inch (1/4"). Skin patching will not be permitted under any circumstances. Correct low areas and depressions by removal and replacement of the deficient pavement.

L. Compacted Thickness

1. If, after compaction, the total thickness of the leveling or wearing course is less than the specified thickness, remove the entire area affected and replace with fresh leveling course and wearing course mixtures. Such removal and replacement work shall be without cost to the Owner.

M. Protection of Pavement

1. After rolling, do not permit vehicular traffic on any portion of the finished bituminous pavement until it has cooled sufficiently and at least 24 hours have elapsed.

END OF SECTION

SECTION 02715  
LANDSCAPE DRAINAGE

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
  - 1. Geotextile Fabric
  - 2. Drain Rock
  - 3. Pipe and Fittings
  
- B. Related Sections:
  - 1. Section 02216 Topsoil Placement
  - 2. Section 02480 Landscape Work
  - 2. Section 02920 Soil Preparation and Soil Mixes

1.02 REFERENCES

- A. ASTM - American Society for Testing and Materials:
  - 1. Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort, ASTM D 1557-91
  
- B. AASHTO - American Association of State Highway and Transportation Officials
  
- C. OSHA - Occupational Safety and Health Administration

1.03 DEFINITIONS

- A. Acceptance: Wherever the terms "acceptance" or "accepted" are used herein, they mean acceptance of Landscape Architect in writing.

1.04 SUBMITTALS

- A. General: Meet requirements of Section 01340
  
- B. Product Data and Specifications:
  - 1. Pipe and Fittings
  - 2. Drain Rock

1.05 QUALITY ASSURANCE

- A. Contractor Qualifications: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely



familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

- B. Regulatory Requirements: Perform work in accordance with all applicable laws, codes, and regulations required by authorities having jurisdiction over such work.

#### 1.06 DELIVERY, STORAGE AND HANDLING

- A. Labeling: Furnish standard products in unopened manufacturer's standard containers bearing original labels showing quantity, analysis and name of manufacturer.
- B. Storage:
  - 1. Store products with protection from weather or other conditions which would damage or impair the effectiveness of the product.
  - 2. Protect PVC pipes and fittings from direct sunlight.
  - 3. Store pipe on beds equal to or longer than pipe.

#### 1.07 SITE CONDITIONS

- A. Environmental Requirements:
  - 1. Lay and join pipe in dry trenches.
- B. Existing Conditions:
  - 1. Review locations of public existing underground utilities and structures with appropriate utility companies.
  - 2. Review location of existing private underground utilities and structures with Owner.

#### 1.08 WARRANTY

- A. Warranty Period:
  - 1. In addition to manufacturer's guarantees or warranties, warrant work for a period of one year from the date of Final Acceptance against defects in material, equipment and workmanship.
  - 2. Warranty shall also cover repair of damage to any part of the premises resulting from defects in materials, equipment, and workmanship, including leaks and settlement, to the satisfaction of the Owner.

### PART 2 PRODUCTS

#### 2.01 MATERIALS

- A. Solid PVC Pipe:
  - 1. Material: ASTM 3034, ASTM 1784, SDR 35
  - 2. Joints: Joints shall be rubber ring joints.
  - 3. Fittings: As recommended by the pipe manufacturer.

4. Acceptable Manufacturer: Ring-Tite PVC pipe as manufactured by Johns-Manville Corporation, San Mateo, CA 94403; (415) 349-9500, or accepted substitute.
- B. Perforated PVC Drain Pipe:
1. Material: AASHTO 278-81 (1986), SDR 35.
  2. Joints: Solvent Weld
  3. Fittings: As recommended by the pipe manufacturer.
  4. Acceptable Manufacturer: Ring-Tite PVC pipe as manufactured by Johns-Manville Corporation, San Mateo, CA 94403; (415) 349-9500, or accepted substitute.
- C. Drain Rock:
1. Quality: Crushed washed rock.
  2. Size: 1/4" dia.

## PART 3 EXECUTION

### 3.01 PREPARATION

- A. Protection:
1. General: Use every possible precaution to prevent damage to existing conditions to remain such as structures, utilities, irrigation systems, plant materials and paving on or adjacent to the site of the work.
  2. Barriers: Provide barricades, fences or other barriers as necessary to protect existing conditions to remain from damage during construction.
  3. Operations: Do not store materials or equipment, permit burning, or operate or park equipment under the branches of existing plants to remain.
  4. Notification of Damages: Submit written notification of all conditions damaged during construction to the Owner and Landscape Architect immediately.

### 3.02 TRENCH EXCAVATION

- A. Safety:
1. Meet OSHA requirements for excavation, trenching, and shoring.
  2. Pile materials suitable for back-filling a sufficient distance from banks of trenches to prevent slides or cave-ins.
  3. Open Trenches: Coordinate trench excavation with pipe installation to avoid open trenches for prolonged periods.
- B. Excavation:
1. Excavate width of the trench at and below top of pipe or culvert to provide adequate space for workmen to place and joint the pipe or culvert properly, but the clear space between the barrel of the pipe and trench wall shall be held to the minimum required for a satisfactory installation. Width of the trench above that level may be as wide as necessary for sheeting and bracing and proper performance of the work.
  2. Excavating shall be open cut, unless otherwise noted on the plans.

3. Trench Bottoms: Accurately grade bottom of trenches to provide uniform bearing and support for each section of pipe on undisturbed soil or the required thickness of bedding material at every point along its entire length, except for portions of pipe sections where it is necessary to excavate for bell holes and for proper making of pipe joints.
4. Depressions for Joints: Dig depressions for joints after trench bottom has been graded and only 1/2 inch greater length, depth and width than the bell, as required for properly making the particular type of joint, and to insure that the bell does not bear on the bottom of the hole. Over-cut with sand cushion may also be employed for pipe at Contractor's option.
5. Utility System Access: Pile excavated material on one side only of trenches in such a manner as to permit ready access to and use of existing fire hydrants, valves, manholes and other utilities system appurtenances.
6. Unneeded Excavated Material: Remove and dispose of all excavated materials not required or satisfactory for backfill.
7. Surface Drainage: Keep surface drainage of adjoining areas unobstructed.
8. Remove water by pumping or other accepted method and discharge at a safe distance from the excavation.

C. Unsatisfactory Fill:

1. When unsatisfactory fill incapable of properly supporting pipe is encountered in bottom of trench, remove such soil to depth required.
2. Backfill over-depths with material accepted by the Soils Engineer.
3. Compact over-depth fill material to 95 percent as determined by ASTM D 1557-91.
4. Back-filling of unauthorized over-depths shall be at the expense of the Contractor.

### 3.03 PIPE INSTALLATION

A. General: Meet requirements of the manufacturer's current printed instructions.

B. Pipe Laying:

1. Furnish and place in position necessary batter boards, string lines, plummets, graduated poles, etc., required in establishing and maintaining the lines and grades.
2. Protect batter boards and location stakes from possible damage or change of location.
3. Begin laying of the pipe on the prepared foundation at the outlet or downstream end with the spigot or tongue end of the pipe joint pointing downstream and proceed toward the inlet or upstream end with each abutting section of pipe properly matched, true to the established lines and grades.
4. Provide acceptable equipment for hoisting and lowering the sections of pipe into the trench without disturbing the prepared bedding foundation or the sides of the trench.
5. Clean ends of the pipe carefully before the pipe is placed in the trench. As each length of pipe is laid, protect open to prevent the entrance of earth or bedding material.
6. Fit and match pipe so that when laid in the prepared bedding it will form a smooth, uniform conduit.

- C. Jointing: Meet requirements of current manufacturer's printed instructions.
- D. Drainage Structures: Construct inlets and other drainage structures as shown on the Drawings and meet requirements of manufacturer's current printed instructions.

### 3.04 FILTER FABRIC, DRAIN ROCK AND PERFORATED PIPE INSTALLATION

- A. Wrapped Drain Rock Trench:
  - 1. Fabric Placement: Center fabric strip over trench, press into trench firmly against sides and bottom of trench, keeping fabric centered in trench.
  - 2. Fabric Overlap: Overlap uphill fabric pieces over downhill fabric pieces a minimum of 12 inches.
  - 3. Drain Rock and Pipe: Install drain rock and pipe as shown on Drawings.
  - 4. Closing Fabric Wrap: After drain rock is installed, fold fabric over top of drain rock with minimum 12 inch overlap.
  - 5. Sand Layer: Immediately backfill 2 inches depth sand layer on lapped fabric to protect fabric from damage and displacement.

### 3.05 TRENCH BACK-FILLING OVER SOLID PIPE

- A. Backfill:
  - 1. Coordinate backfilling with testing of utilities.
  - 2. Where damage is likely to result from withdrawing, leave sheeting in place and cut off a minimum of 18 inches below finished grade.
  - 3. Carefully backfill trenches with satisfactory materials consisting of earth, loam, sandy clay, sand and gravel, or soft shale, free from large clods of earth and stones not over 1-1/2 inches in size, and deposit in 9 inch maximum layers, loose depth.
  - 4. Bring up embedment material evenly on both sides of pipe for its full length and thoroughly and carefully ram until pipe has a cover of not less than 1 foot.
  - 5. Deposit remainder of backfill material in the trench in 1 foot maximum layers and compact by mechanical means.
  - 6. Reopen trenches and excavation pits improperly backfilled, or where settlement occurs, to the depth required to obtain the specified compaction, then refill and compact, and restore the surface to the required grade and compaction.
  - 7. Back-fill in such a manner as to permit the rolling and compaction of the filled trench with the adjoining material to provide the required bearing value so that paving of the area can proceed immediately after back-filling is complete.
  - 8. Compact trenches in landscaped areas to 85 percent of the maximum density as determined by ASTM D 1557-91.

### 3.06 FIELD QUALITY CONTROL

- A. Interim Field Observation Reviews by Landscape Architect: Coordinate and schedule with Landscape Architect.
- B. Preliminary and Final Review: Refer to Section 02975.

END OF SECTION

LANDSCAPE DRAINAGE  
02715.5

SECTION 02870  
SITE FURNISHINGS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
  - 1. Supply and installation of bike racks.
  - 2. Installation of kiosk.
  - 3. Installation of entrance sign.
  
- B. Related Sections:
  - 1. Section 02200 Earthwork

1.02 REFERENCES

- A. ASTM - American Society of Testing Materials

1.03 DEFINITIONS

- A. Whenever the terms "acceptance" or "accepted" are used herein, they mean acceptance by Landscape Architect in writing.

1.04 QUALITY ASSURANCE

- A. Regulatory Requirements:
  - 1. Perform work in accordance with all applicable laws, codes, and regulations required by authorities having jurisdiction over such work.
  - 2. Provide for all inspections and permits required by federal, state and local authorities in furnishing, transporting, and installing materials.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Labeling: Furnish standard products in unopened manufacturer's standard containers bearing original labels showing quantity, analysis and name of manufacturer.
  
- B. Delivery: Deliver and unload only at accepted areas of the project site on pallets and bound in such a manner that no damage occurs to the product.
  
- C. Storage: Store products in a manner that will preclude all damages. Damaged materials will be rejected. Remove all damaged materials from the job site immediately, and replace at no cost to Owner.

- D. Handling: Furnish suitable equipment to locate all site furnishing materials carefully and efficiently. Lift materials using lifting inserts provided by manufacturer where applicable. Remove all damaged materials from the job site immediately, and replace at no cost to the Owner.

#### 1.06 SITE CONDITIONS

- A. General: The Contractor shall prevent damage to existing conditions to remain such as structures, utilities, plant materials and walks on or adjacent to the site of the work.
- B. Field Measurements: Perform field measurements required for adequate fabrication and installation of the work covered by this Section.

#### 1.07 WARRANTY

- A. General Description: In addition to manufacturer's guarantees or warranties, work shall be warranted for one year from the date of Final Acceptance against defects in material, equipment and workmanship.
- B. Additional Items Covered: Warranty shall also cover replacement of or repair of damage to any part of the project site resulting from defects in materials, equipment, and workmanship or any required replacement to the satisfaction of the Owner.
- C. Exceptions: Contractor shall not be held responsible for failures due to neglect by Owner, vandalism, or Acts of God, during Warranty Period. Report such conditions in writing immediately to the Owner.

### PART 2 PRODUCTS

#### 2.01 MATERIALS

- A. Bike Racks
  - 1. Product: Madrax Challenger Plus, 36" tall, in-ground mounting, Model No. CHP-3-IG, black powder coat finish.
  - 2. Supplier: Madrax, 1080 Uniek Drive, Waunakee, WI 53597, TEL: 800.448.7931.
- B. Entrance Sign
  - 1. Product: Wooden sign as detailed on the drawings.
  - 2. Supplier: Washtenaw County Parks and Recreation Commission. Contractor shall be responsible for pick-up and delivery at the County storage facilities.
- C. Kiosk
  - 1. Product: Wooden kiosk as detailed on the drawings.
  - 2. Supplier: Washtenaw County Parks and Recreation Commission. Contractor shall be responsible for pick-up and delivery at the County storage facilities.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verification of Conditions: Examine site and verify that conditions are suitable to receive Work and that no defects or errors are present which would cause defective installation of products or cause latent defects in workmanship and function.
- B. Unsuitable Conditions: Before proceeding with work, notify Landscape Architect in writing of all unsuitable conditions. Do not proceed until unsuitable conditions are corrected.

### 3.02 PREPARATION

- A. Protection:
  - 1. General: Prevent damage to existing conditions to remain such as structures, utilities, irrigation systems, plant materials and paving on or adjacent to the site of the work.
  - 2. Barriers: Provide lighted barricades, fences or other barriers as necessary to protect existing conditions to remain from damage during construction.
  - 3. Operations: Do not store materials or equipment or operate or park equipment under the branches of existing plants to remain.
  - 4. Notification of Damages: Submit written notification of all conditions damaged during construction to the Landscape Architect immediately.

### 3.03 INSTALLATION

- A. Layout: Contractor shall layout all site furnishings as indicated on the Drawings. Landscape Architect will review and accept final locations of site furnishings at the job site prior to installation.
- B. Templates: Furnish templates for exact location of anchor bolts, and other items to be embedded in concrete, with setting instructions required for installation of embedded items. Misaligned or crooked bolt placement will not be acceptable.
- C. Attachment:
  - 1. Coordinate installation with adjoining work for details of attachment, fittings, etc.
  - 2. Install anchors, bolts, washers, inserts, lag screws, and other miscellaneous steel or iron fastenings as required for erection, installation, completion of work, as indicated on Drawings, details and schedules, at time scheduled for work.
- D. Fastening:
  - 1. Provide all miscellaneous fastenings necessary for the complete assembly and installation.
  - 2. Install fasteners as specified.

3.04 FIELD QUALITY CONTROL

- A. Interim Field Observation by Landscape Architect: Coordinate and schedule with Landscape Architect.

3.05 CLEANING

- A. Prior to Final Completion, clean up and remove all deleterious materials and debris from the entire work area.

3.06 PROTECTION

- A. Coverings: Apply such protective coverings to prevent damage or discoloration of any kind until Final Completion.

END OF SECTION



## SECTION 02920

### SOIL PREPARATION AND SOIL MIXES

#### PART 1 GENERAL

##### 1.01 SUMMARY

###### A. Section Includes:

1. Scarification of Plant Pit Surfaces
2. Treatment of Planting Soil to Remove Deleterious Materials
3. Amendment of Planting Area Soil
4. Mixing and Placement of Plant Pit Backfill Mix
5. Soil Sampling, Analysis and Amendment Recommendations

###### B. Related Sections:

1. Section 02216 Topsoil Placement
2. Section 02480 Landscape Work
3. Section 02975 Landscape Maintenance Period

##### 1.02 DEFINITIONS

- ###### A. Acceptance:
- Wherever the terms "acceptance" or "accepted" are used herein, they mean acceptance of Landscape Architect in writing.

##### 1.03 SUBMITTALS

- ###### A. General:
- Meet requirements of Section 01340

###### B. Product Data and Specifications:

1. Chemical Additives
2. Organic Amendments
3. Sand
4. Peat Moss

- ###### C. Soil Fertility Test Report:
- Submit 3 copies of soil analysis data showing the following data:

1. Chemical Properties:
  - a. Available Phosphorus
  - b. Exchangeable Potassium
  - c. Magnesium
  - d. Calcium
  - e. Soil pH
  - f. Cation exchange capacity (CEC)
  - g. Percent Base Saturation of Cation Elements
  - h. Soluble Salts and Sodium
2. Physical Properties:
  - a. Organic matter
  - b. Textural Analysis

#### 1.04 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies:
  - 1. Perform work in accordance with all applicable laws, codes, and regulations required by authorities having jurisdiction over such work.
  - 2. Provide for all inspections and permits required by federal, state and local authorities in furnishing, transporting, and installing materials.
- B. The Contractor shall request a site inspection by the Landscape Architect to observe backfill mix preparation and backfill placement work in progress.

#### 1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Labeling: Furnish standard products in unopened manufacturer's standard containers bearing original labels showing quantity, analysis and name of manufacturer.
- B. Storage: Store materials and products with protection from weather or other conditions which would damage or impair their effectiveness.

#### 1.06 SITE CONDITIONS

- A. Environmental Requirements:
  - 1. Do not work soil when moisture content is so great that excessive compaction will occur, nor when it is so dry that dust will form in the air or that clods will not break readily. Apply water, if necessary, to bring soil to an optimum moisture content for tilling.
  - 2. Do not work soil when muddy or frozen.
  - 3. Do not apply chemicals in wind conditions greater than 5mph.

#### 1.07 WARRANTY

- A. Warrant that amended soil layer shall be free of settlement below finish grades for a period of one year from date of Final Acceptance.

### PART 2 PRODUCTS

#### 2.01 MATERIALS

- A. Soil for Backfill Mix: Native on-site soil.
- B. Organic Amendments:
  - 1. Canadian Peat.
  - 2. Michigan Peat.
  - 3. Organic Compost
- B. Fine Sand:
  - 1. Physical Properties (dry weight basis):

Percent Passing	Sieve Size
100	4.76 mm (#4,4 mesh)
95 - 100	1.00mm (#18,8 mesh)
65 - 100	500 micron (#35, 35 mesh)
0 - 50	250 micron (#60, 60 mesh)
0 - 20	105 micron (#140, 140 mesh)
0 - 5	53 micron (#270, 270 mesh)

2. Chemical Properties:

- a. Salinity: The saturation extract conductivity shall not exceed 3.0 millimhos/cm @ 25 degrees C.
- b. Boron: The concentration in the saturation extract shall not exceed 1.0 ppm.
- c. Sodium: The sodium absorption ratio (SAR) as calculated from analysis of the saturation extract shall not exceed 6.0.
- d. Ph: Neutral.

C. Preplant Fertilizer for Trees, Shrubs, and Groundcover and Turf Areas:

1. Product: Fertilizers with NPK ratios of 1-1-1 or 2-2-1 are acceptable.
2. Unsuitable Qualities: Fertilizer which become caked or otherwise damaged, making it unsuitable for use, will be rejected.

D. Chemical Additives:

1. Ground Limestone: Agricultural limestone containing not less than 85 percent of total carbonate, ground to such fineness that 50 percent will pass #1 sieve and 90 percent will pass #20 sieve.
2. Dolomite Lime: Agricultural grade mineral soil conditioner containing 35 percent minimum magnesium carbonate and 49 percent minimum calcium carbonate, 100 percent passing #65 sieve. "Kaiser Dolomite 65 AG" as manufactured by Kaiser, Inc. Mineral Products Department, or equal.
3. Iron Sulfate (Ferric or Ferrous): Supplied by a commercial fertilizer supplier, containing 20 to 30 percent iron and 35 percent to 40 percent sulfur.
4. Sulfate of Potash: Agricultural grade containing 50 to 53 percent of water-soluble potash.
5. Single Superphosphate: Commercial product containing 20 to 25 percent available phosphoric acid.
6. Ammonium Sulfate: Commercial product containing approximately 21 percent ammonia.
7. Ammonium Nitrate: Commercial product containing approximately 34 percent ammonia.
8. Calcium Nitrate: Agricultural grade containing 15-1/2 percent nitrogen.
9. Urea Formaldehyde: Granular commercial product containing 38 percent nitrogen.
10. I.B.D.U. (Iso Butyldiene Diurea): Commercial product containing 31 percent nitrogen.
11. Sulfur coating urea (SCU): Containing a minimum of 30% nitrogen.
12. Soil Sulfur: Agricultural grade sulfur containing a minimum of 96 percent sulfur.
13. Iron Sequestrene: Geigy Iron Sequestrene 330 Fe.

## 2.02 MIXES

### A. Plant Pit Backfill Mix Composition:

1. Content:
  - a. 6 parts by volume existing soil
  - b. 4 parts by volume organic amendment.
2. Additives
  - a. Complete fertilizer per cubic yard of mix as determined by the soil tests
  - b. Iron sulfate per cubic yard of mix as determined by the soil tests
3. Mixing:
  - a. Mix materials uniformly in bulk at one area.
  - b. Do not mix materials at each pit.

### B. Bioswale Planting Mix Composition:

1. Content:
  - a. 6 parts by volume existing soil
  - b. 4 parts by volume organic amendment.
2. Additives
  - a. Complete fertilizer applied at 1 pound actual nitrogen per cubic yard of mix
  - b. 2 pounds Iron sulfate per cubic yard of mix
3. Mixing:
  - a. Mix materials uniformly in bulk at one area.
  - b. Do not mix materials at each pit.
4. Planting mix composition to be modified as necessary based on soil percolation results.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verification of Topsoil Placement: Verify that topsoil placement work is complete.
- B. Verification of Conditions: Examine site and verify that conditions are suitable to receive work and that no defects or errors are present which would cause defective installation of products or cause latent defects in workmanship and function.
- C. Unsuitable conditions: Before proceeding with work, notify Owner and Landscape Architect in writing of all unsuitable conditions and conflicts.

### 3.02 PREPARATION

#### A. Protection of Existing Conditions:

1. General: Use every possible precaution to prevent damage to existing conditions to remain such as structures, utilities, plant materials and walks on or adjacent to the site of the work.
2. Barriers: Provide barricades, fences or other barriers to protect existing conditions to remain from damage during construction.
3. Operations: Do not store materials or equipment, permit burning, or operate or park equipment under the branches of existing plants to remain.

4. Notification of damages: Give written notification of damaged plants and structures immediately.

B. Surface Preparation:

1. Soil Inspection for Deleterious Materials: Inspect soil for sticks, oils, chemicals, plaster, concrete, and other deleterious materials.
2. Removal of Deleterious Materials: Do work necessary to remove the deleterious materials.

### 3.03 SOIL TESTS TO DETERMINE FIELD AMENDMENT PROGRAM

A. Composite Sample:

1. Take one 1-pound composite sample from each planting area.
2. Collect small portions of soil from 10 evenly scattered locations within each planting area to form composite sample.
3. Using a soil sample tube, take 3 portions at each location from depth of 12 inches, 14 inches and 36 inches.
4. Mix small portions together to form one pound composite sample.

B. Soil Fertility Test:

1. Submit soil composite samples to an accepted soil testing laboratory, for written soil analysis and recommendations.
2. Submit testing laboratory's written amendment recommendations to Landscape Architect or Engineer for acceptance prior to commencement of soil preparation work.

C. Soils Test for Parasitic Nematodes:

1. Test soils which have been used for agricultural purposes within the prior 12 months for parasitic nematodes.
2. Soil will be acceptable if the parasitic nematode population is less than 200 per 50 cubic centimeters of soil.
3. Do not artificially dry soil prior to testing.
4. Submit test results to the Landscape Architect.

D. Soils Test for Herbicide Contamination:

1. Perform a radish/ryegrass growth trial as directed on soils suspected of herbicide contamination.
2. Submit written test results to the Landscape Architect.

### 3.04 AMENDMENT OF PLANTING AREA SOIL

- A. Cultivation of Compacted Areas: Where soil compaction has occurred, cross-rip to a depth of 12 inches, except within existing tree drip lines.

- B. Cultivation of Planting Areas: Rototill all planting areas to a depth of 6 inches immediately prior to incorporating amendment.

- C. Application Rate for Amendment Work: Apply appropriate amendments to the respective soil types at the rates recommended by the accepted amendment program.

- D. Incorporation of Amendments: Incorporate uniformly within top 6 inches of soil layer with a rototiller.

### 3.05 BACKFILL MIX INSTALLATION

- A. Scarification: Scarify the sides of all plant pits immediately prior to backfill mix placement.
- B. Settlement Allowance: Place backfill mix to depth and elevation which allows for settlement, and addition of soil amendment.
- C. Mock-Up: Mock-up areas of backfill mix at the specified depths and apply irrigation to induce settlement, if required to help determine the amount of settlement which will be caused by irrigation and rain.

### 3.06 FIELD QUALITY CONTROL

- A. Interim Field Observation Reviews by Landscape Architect: Coordinate and schedule with Landscape Architect.
- B. Preliminary and Final Review: Refer to Section 02975.

## PART 4 MEASUREMENT AND PAYMENT

- 4.01 General: All soil mixes and soil preparation are incidental to the placement of topsoil and the planting of trees, and will not be paid on a unit price basis.

END OF SECTION

## SECTION 02975

### LANDSCAPE MAINTENANCE PERIOD

#### PART 1 GENERAL

##### 1.01 SUMMARY

###### A. Section Includes:

1. Weed Control and Prevention
2. Pest Control and Prevention
3. Disease Control and Prevention
4. Fertilization
5. Pruning of Plant Material
6. Replacement of Dead or Unhealthy Plant Material
7. Repair of Staking and Guying System
8. Watering Plant Material
9. Monitoring Changing Soil Moisture and Weather Conditions Relative to Plant Material Water Requirements
10. Adjusting Length of Watering Cycles According to Changing Soil and Weather Conditions

###### B. Related Sections:

1. Section 02920 Soil Preparation and Soil Mixes
2. Section 02480 Landscape Work

##### 1.02 REFERENCES

###### A. ANSI - American National Standards Institute:

1. American Standard for Nursery Stock, ANSI Z60.1-1990

###### B. NAAPS - National Arborist Association Pruning Standards

###### C. ICBN - International Code of Botanical Nomenclature

###### D. ICNCP - International Code of Nomenclature of Cultivated Plants

##### 1.03 DEFINITIONS

A. Acceptance: Wherever the terms "acceptance" or "accepted" are used herein, they mean acceptance of Landscape Architect in writing.

B. Growing Season: May 1 through October 31.

##### 1.04 SUBMITTALS

A. General: Meet requirements of Section 01340

- B. Product Purchase and Delivery Documentation:
  - 1. Fertilizer: Submit 3 copies of purchase orders, invoices and receipts showing supplier name and address, person who sold product, date of purchase, specific product purchased, quantity purchased, and if delivery by supplier show delivery date.
- C. Documentation of Accepted Conditions: Within 7 working days after Final Acceptance, submit color photographs and a written report documenting the accepted conditions of the plant material.

#### 1.05 QUALITY ASSURANCE

- A. Contractor Qualifications:
  - 1. Maintenance Contractor: Minimum 10 years experience in maintenance of commercial landscape projects.
  - 2. Maintenance Supervisor: Minimum of 10 years experience in landscape maintenance supervision, with experience or training in turf management, entomology, pest control, soils, fertilizers and plant identification.
  - 3. Labor Force: Thoroughly familiar and trained in the work to be accomplished and perform the task in a competent, efficient manner acceptable to the Owner.
  - 4. Supervision: The foreman shall directly employ and supervise the work force at all times.
- B. Notification of Change in Supervision: Notify Owner of all changes in supervision.
  - 1. Identification: Provide proper identification at all times for landscape maintenance firm's labor force.
- C. Regulatory Requirements:
  - 1. Perform all work in accordance with all applicable laws, codes, and regulations required by authorities having jurisdiction over such work.
  - 2. Provide for all inspections and permits required by Federal, State, or local authorities in furnishing, transporting, and installing of all agricultural chemicals.
  - 3. Submit a record of all herbicides, insecticides and disease control chemicals used to the local regulatory agency as required by law.

#### 1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Labeling: Furnish standard products in unopened manufacturer's standard containers bearing original labels showing quantity, analysis and name of manufacturer.
- B. Storage: Store products with protection from weather or other conditions which would damage or impair the effectiveness of the product.
- C. Handling: Do not lift or handle container plants by tops, stems or trunks at any time. Do not bind or handle plants with wire or rope at any time.



- D. Anti-Desiccant: Spray all evergreen or deciduous plant material in full leaf immediately before transporting with anti-desiccant. Apply an adequate film over trunks, branches, twigs and foliage.
- E. Digging: Dig ball and burlap (B & B) plants with firm, natural balls of earth of diameter meeting requirements of ANSI Z60.1-1990, and of sufficient depth to include the fibrous and feeding roots.

#### 1.07 SEQUENCING AND SCHEDULING

- A. Work Schedule:
  - 1. Work Hours: Perform all maintenance during hours accepted by Owner.
  - 2. Initial Maintenance Period: Work force shall be present at the project site at least once a week and as often as necessary to perform specified maintenance in accordance with the accepted maintenance schedule.
  - 3. Warranty Maintenance Period: A minimum of one visit is required for each of the following times during each Warranty Period.

June 1	-	June 15
June 23	-	July 7
July 15	-	July 29
August 4	-	August 18
September 5	-	September 19
November 1	-	November 15

- 4. Verification: Verification of visits may be required by the Owner in the form of reports and/or certified payroll covering the visits.

## PART 2 PRODUCTS

### 2.01 MATERIALS

- A. Replacement Plant Material:
  - 1. Match existing genus, species, cultivar and size.
  - 2. Meet requirements of these specifications.
  - 3. Meet requirements of ANSI Z60.1-1990, ICBN and ICNCP.
- B. Seed:
  - 1. Match existing genus, species, cultivar and size.
- C. Granular Fertilizers:
  - 1. Complete fertilizer with NPK ratios or 1-1-1 or 2-2-1 or 2-3-2.
- D. Herbicides, Insecticides, and Fungicides: Legal commercial quality non-staining materials with original manufacturers' containers, properly labeled with guaranteed analysis, as recommended by licensed applicators.

- E. Replacement Staking Materials:
  - 1. Product: Same as accepted for original installation.
  - 2. Manufacturer: Same as accepted for original installation.
- F. Mulch: Same as original installation.
- G. Tree Guard Fence: Same as original installation.

## PART 3 EXECUTION

### 3.01 PREPARATION

- A. Protection of Existing Conditions:
  - 1. General: Use every possible precaution to prevent damage to existing conditions to remain such as structures, utilities, plant materials and walks on or adjacent to the site of the work.
  - 2. Barriers: Provide barricades, fences or other barriers as necessary to protect existing conditions from damage during maintenance operations.
  - 3. Hazardous Operations: Do not store materials or equipment, permit burning, or operate or park equipment under the branches of existing plants.
  - 4. Notification: Give written notification of all damaged plants and structures.
  - 5. Replacement of plant material: Replace existing plants which are damaged during maintenance with plants of the same species and size as those damaged at no cost to the Owner.

3.02 INITIAL MAINTENANCE PERIOD: Continuously maintain each plant and each portion after installation, during progress of work, and for a minimum period of 90 days after Preliminary Acceptance until Final Acceptance.

3.03 WARRANTY MAINTENANCE PERIOD: Continuously maintain each plant and each portion after Final Acceptance for the period of time specified in Section 02950.

### 3.04 TREE AND SHRUB MAINTENANCE

- A. Watering:
  - 1. Maintain watering basins around all trees and shrubs so that enough water can be applied to establish moisture through major root zones.
  - 2. Using a soil sample tube, check rootball moisture and surrounding soil moisture at representative plants at least twice a week.
  - 3. Adjust frequency and length of time for watering cycles according to changing soil and weather conditions.
  - 4. For supplemental hand watering of watering basins, use a water wand to break the water force. Do not permit crown roots to become exposed to air through dislodging of soil and mulch.
  - 5. Maintain originally specified depth of mulch to reduce evaporation and frequency of watering.

- B. Settled or Leaning Plants: Reset plants to proper grades or upright position.
- C. Weed Control:
  - 1. Keep all areas between plants, including watering basins, weed free.
  - 2. Use only legally accepted herbicides to control weed growth.
  - 3. Avoid frequent soil cultivation that destroys shallow roots and breaks the seal of pre-emergent herbicides.
- D. Mulching: Re-mulch at the beginning of each growing season according to Section 02480.
- E. Pest Control: Apply sprays and treatments as necessary for scale insects, leaf eating insects and fire blight control. Apply according to manufacturer's current printed instructions and in accordance with local ordinances.
- F. Pruning:
  - 1. General: Meet requirements of NAAPS.
  - 2. Prune trees to select and develop permanent scaffold branches that are smaller in diameter than the trunk or branch to which they are attached, and which have vertical spacing of 18 inches to 48 inches and radial orientation so as not to overlay one another.
  - 3. Prune trees to eliminate diseased or damaged growth, and narrow V-shaped branch forks that lack strength. Reduce toppling and wind damage by thinning out crowns.
  - 4. Prune trees to maintain growth within space limitations, maintaining a natural appearance and balancing crown with roots.
  - 5. Retain lower branches in a "tipped back" or pinched condition to promote caliper trunk growth (tapered trunk). Do not cut back to fewer than six buds or leaves on such branches. Only cut lower branches flush with the trunk after the tree is able to stand erect without staking or other support.
  - 6. Prune damaged trees or those that constitute health or safety hazards at any time of year as required.
  - 7. Make all cuts clean and close to the trunk, without cutting into the branch collar. "Stubbing" will not be permitted. Cut smaller branches flush with trunk or lateral branch. Make larger cuts (one inch in diameter or larger) parallel to shoulder rings, with the top edge of the cut at the trunk or lateral branch.
- G. Staking:
  - 1. Inspect stakes and guys at least once a week to check for rubbing that causes bark wounds.
  - 2. Adjust tree ties and guy cables as required to allow tree caliper growth and prevent bark wounds.
  - 3. Replace defective materials with materials to match original materials.
  - 4. Remove all stakes at the end of the Warranty Maintenance Period.
- H. Replacement of Plants: Replace, without cost to Owner, and as soon as weather conditions permit, all plants not in a vigorous, thriving condition, during and at the end of the maintenance period.

### 3.05 TALL GRASS PRAIRIE AND BIOSWALE (SEEDED AREAS)

#### A. Watering:

1. Using a soil sampling tube, check for moisture penetration throughout the root zone at least twice a week.
2. Water seeded areas at such frequency as weather conditions require, to replenish soil moisture to 6 inches below root zone.
3. Provide a total of 1½ inches of water weekly during hot summer weather, in 3 applications per week.
4. Watering shall be done during early mornings.

#### B. Weed Control

1. Control broadleaf weeds with selective herbicides.
2. In areas where invasive species identified in Section 02480 have infested the seeded areas, apply a selective post-emergent herbicide as soon as possible, and prior to flowering.
3. Do not irrigate for 48 hours after application of all herbicide sprays.
4. Coordinate application of herbicides with reseeding schedule as described below.

#### C. Reseeding of Seeded Areas: Replace, without cost to Owner, and as soon as weather conditions permit, all seeded areas not in a vigorous, thriving condition, during and at the end of the maintenance period. Match existing seed.

### 3.08 INSECTS, PESTS, AND DISEASE CONTROL

#### A. Inspection: Inspect all plant materials weekly for signs of stress and damage.

#### B. Treatment: Treat as required to prevent and control insects, pests and diseases.

### 3.10 FIELD QUALITY CONTROL

#### A. Preliminary Review:

1. Upon the complete installation of the landscape work, request a review by the Landscape Architect to determine whether all landscape work conforms to the requirements of the Contract Documents.
2. Submit a written request at least five working days prior to the anticipated date of review.
3. If it is found that the landscape work does not conform to the requirements of the Contract Documents, the Contractor will receive written notification from the Landscape Architect of all corrective work preventing Preliminary Acceptance of the landscape work.
4. Perform corrective work within ten calendar days after the Preliminary Review.
5. Upon completion of the corrective work, request another Preliminary Review to determine whether all landscape work conforms to the requirements of the Contract Documents.

6. Corrective work followed by review will be required until the corrective work is found to be complete by the Landscape Architect.
- B. Payment for Additional Preliminary Review Field Trips: Reimburse Owner for expenses and fee required to have Landscape Architect make additional field trips for preliminary review.
- C. Preliminary Acceptance:
1. When the Landscape Architect determines that the landscape work conforms to the requirements of the Contract Documents the Contractor will receive a written notification of Preliminary Acceptance.
  2. The Initial Maintenance Period will commence upon the date specified by the notification of Preliminary Acceptance.
- D. Final Review:
1. At the end of the Initial Maintenance Period, request a review by the Landscape Architect to determine whether all landscape and maintenance work conforms to the requirements of the Contract Documents.
  2. Submit a written request at least five working days prior to the anticipated date of review.
  3. If it is found that all landscape and maintenance work does not conform to the requirements of the Contract Documents, the Contractor will receive written notification from the Landscape Architect of all corrective work preventing Final Acceptance of the landscape and maintenance work.
  4. Perform corrective within ten calendar days after the Final Review.
  5. Upon completion of the corrective work, request another Final Review to determine whether all landscape and maintenance work conforms to the requirements of the Contract Documents.
  6. Corrective work followed by review will be required until the corrective work is found to be complete by the Landscape Architect.
- E. Payment for Additional Final Review Field Trips: Reimburse Owner for expenses and fee required to have Landscape Architect make additional field trips for final review.
- F. Final Acceptance:
1. When the Landscape Architect determines that the landscape and maintenance work conforms to the requirements of the Contract Documents the Contractor will receive a written notification of Final Acceptance.
  2. Continue maintenance of all landscape work until the date that the Owner accepts maintenance at the end of the Warranty Maintenance Period.
  3. The Owner will accept maintenance responsibility upon the date specified in the notification of Final Acceptance.

END OF SECTION

PART III  
DRAWINGS