

# Project Manual

## City Campus Landscape Improvements

City of Walled Lake, Michigan

---

**DATE ISSUED:** April 10, 2017

**DUE DATE FOR BID:** May 8, 2017  
10 AM, EDT

**DELIVER BIDS TO:** **City of Walled Lake**  
1499 E. West Maple Road  
Walled Lake, Michigan 48390  
ATTN: Jennifer Stuart, City Clerk

**PREPARED BY:**

**McKenna**  
ASSOCIATES

235 E. MAIN ST. STE. 105  
NORTHVILLE, MICHIGAN 48167  
(248) 596-0920  
FAX (248) 596-0930

# I. BID REQUEST

## City Campus Landscape Improvements

City of Walled Lake, Michigan

---

Sealed proposals will be received by the City of Walled Lake, Attention Jennifer Stuart, City Clerk, 1499 E. West Maple Road, Walled Lake, Michigan until **10:00 am** prevailing local time on **May 8, 2017** at which time the bids will be publicly opened and read aloud for the City Campus Landscape Improvements project.

The work consists of landscape and irrigation installation at the City Hall Campus.

Plans, specifications and Bid Forms may be obtained at the City of Walled Lake office or by contacting Jim Allen at McKenna Associates, Inc. for assistance. He can be reached by emailing [jallen@mcka.com](mailto:jallen@mcka.com) or 248.596.0920.

Each bidder shall file a statement signed by, or on behalf of the person, firm, association, or corporation confirming that they have not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action, in restraint of free competitive bidding in connection with the submitted bid. Failure to submit the signed statement as part of the bid proposal will result in rejection of the bid.

All bids shall remain firm and cannot be withdrawn for a period of sixty (60) days.

The City reserves the right to reject any or all bids, to waive any irregularities to the bids and to make the award in any manner deemed to be in the best interest of the City.

The anticipated project start date may begin **upon formal acceptance of proposal**. . The substantial completion date for construction and restoration of the project is **June 30, 2017**. The final completion date shall be on or before **July 31, 2017**.

The City of Walled Lake is an equal opportunity contractor which does not discriminate on the basis of sex, race, creed or a physical disability. All qualified contractors are urged to respond.

## II. INSTRUCTIONS TO BIDDERS

### City Campus Landscape Improvements

City of Walled Lake, Michigan

---

#### A. SUBMISSION OF BIDS

---

All proposals shall be properly sealed and shall be on the forms provided. Bids shall be enclosed in a sealed envelope properly identified with the name of the project, date and time of bid opening and name and address of the bidder. Bids shall be delivered to the City of Walled Lake, Attention: Jennifer Stuart, City Clerk on or before the time specified in the Advertisement for Bids.

Bids shall be made in full conformity with all the conditions set forth in these bidding documents including the accompanying Drawings and Specifications.

Submission of bids shall include a completed Bid Form in this Bid Request, qualifications including references and documentation of licenses (see Qualifications) as specified in the Bid Form and all information required in this Bid Request.

Plans, specifications and Bid Forms may be obtained at the City of Walled Lake office or by contacting Jim Allen at McKenna Associates, Inc. for assistance. He can be reached by emailing [jallen@mcka.com](mailto:jallen@mcka.com) or calling 248.596.0920.

If any person contemplating submitting a bid for construction of the work is in doubt as to the true meaning of any parts of the proposed documents, or finds discrepancies in or omissions from any part of the proposed documents, he/she may submit a written request to Jim Allen at McKenna Associates, Inc. for interpretation thereof no later than one day before bids will be opened.

The person submitting the request shall be responsible for its prompt delivery. If the bid is sent through the mail or other delivery system, the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED" on the face of the envelope. Interpretation or correction of proposed contract documents will be made only by Addendum and will be mailed or delivered to each bidder of record.

Each bidder shall sign and date the proposal in long hand giving his name, address and status (individual, partnership or corporation). Bids which are not signed by the individual making them should have attached thereto a power of attorney, evidencing authority to act as agent for the person for whom it is signed.

Bids which are signed for a partnership should be signed by one of the partners or by an attorney-in-fact. If signed by an attorney-in-fact, evidence of authority to sign the bid shall be attached.

Bids which are signed for a corporation should have the correct corporation name thereon and the signature of the president or other officer legally able to contract in the name of the corporation. In addition, a signed secretary's certificate evidencing the authority of the officer to contract in the name of the corporation shall be included.

The names and legal status of the bidder, that is, as a corporation, partnership or individual, shall be stated in the bid and legal documentation of the status of the company, such as corporate papers or partnership papers shall be provided, if requested by the City of Walled Lake. The place of residence of each bidder, or the office address in the case of a firm or company, with county and state must be given after his/her signature.

Each bidder agrees to and hereby does waive any claim it has or may have against the City, the Landscape Architect, Engineer and their respective employees; representatives and agents arising out of or in connection with the administration, evaluation, or recommendation of any bid.

## **B. EXAMINATION OF SITE**

---

Before submitting a bid, each bidder shall inspect the project area and determine the site conditions. Each bidder shall have compared the site with the bidding documents including the Drawings and Specifications and shall have satisfied himself/herself as to conditions of the work site, existing construction, and any other conditions affecting the carrying out of the Work, before delivery of his/her bid.

It is the responsibility of each bidder before submitting a bid, to (a) visit the site to become familiar with local conditions that may affect cost, progress, performance or furnishing the Work, (b) consider federal, state and local laws and regulations that may affect cost, progress, performance or furnishing the Work, (c) notify Jim Allen at McKenna Associates, Inc. of all conflicts, errors or discrepancies.

No allowance or extra consideration on behalf of the Contractor shall subsequently be allowed by reason of error or oversight on the part of the Contractor or on account of interference by the Contractor's activities.

The Contract is to be computed on the basis of unit prices submitted in the proposal. All prices shall be given in words and figures and in case of discrepancy; the amount written in words shall govern. The City reserves the right to make additions to or deletions from the Contract at any time during the period of the Contract upon written notice to the Contractor. The price of additions or deletions shall be computed on the basis of unit prices quoted in the proposal.

The City reserves the right to accept any bid or to reject any and all bids; also to waive formal defects in bids, should it deem for the best interest of the City to do so. Unsolicited alternates will be considered informal and may be cause for rejection of the bid.

**Due Date: Sealed bids are due at the City of Walled Lake, Attention: Jennifer Stuart, City Clerk, 1499 E. West Maple Road, Walled Lake, MI 48390 on or before May 8, 2017, 10:00 am local time at which time and place all bids will be publicly opened and read.**

Questions about the project may be directed to Jim Allen, RLA Director of Design for McKenna Associates at 235 N. Main Street, Suite 105, Northville, Michigan. He can be reached by emailing [jallen@mcka.com](mailto:jallen@mcka.com) or calling 248.596.0920.

## **C. INTERPRETATIONS AND ADDENDA**

---

Interpretations or clarifications considered necessary by the City of Walled Lake in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by the City of Walled Lake as having received the bidding documents. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

Addenda may also be issued to modify the bidding documents as deemed advisable by the City of Walled Lake.

Addenda issued to bidders prior to the date of receipt of bids shall become a part of the Specifications and all bids shall include the Work described in the Specifications.

Addenda, if issued, should be acknowledged by bidder on the bid form. A bid form submitted without acknowledged addenda may be rejected.

## **D. MODIFICATION AND WITHDRAWAL OF BIDS**

---

Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a bid must be executed) and delivered to the place where bids are to be submitted at any time prior to the opening of bids.

If, within twenty-four hours after bids are opened any bidder files a duly signed, written notice with the City of Walled Lake and promptly thereafter demonstrates to the reasonable satisfaction of the City of Walled Lake that there was a material and substantial mistake in the preparation of its bid, that bidder may withdraw its bid. Thereafter, that bidder will be disqualified from further bidding on the Work to be provided under the Contract Documents.

## **E. QUALIFICATIONS**

---

It is the intention of the City of Walled Lake to award this Contract to a Contractor fully capable, both financially and with applicable experience, to perform and complete the Work in a satisfactory manner.

Each bidder shall submit with their bid, a list of three references, including the name, address and phone number of the contact person for each reference. Proposals submitted by Bidders who have been debarred, suspended, or made ineligible by any Federal Agency will be rejected.

At the discretion of the City of Walled Lake, each bidder under consideration may be required to submit any or all of the following information:

- The address and description of the bidder's permanent place of business
- Such additional information as will satisfy the City of Walled Lake that the bidder is adequately prepared to fulfill the Contract

The Contractor shall at all times utilize staff at appropriate times and in a proper manner to assure the Work is performed in a safe, efficient and professional manner.

The Contractor will be required to provide Public Liability and Property Insurance and Worker's Compensation Insurance for his/her employees and name McKenna and Associates and the City of Walled Lake as additionally insured. He/she will, upon request, furnish these Certificates of Insurance to the City of Walled Lake. The successful bidder will be required to furnish satisfactory Performance, Labor and Material, Maintenance/Guarantee Bonds. The costs for these bonds shall be included in the bid amount. The required bonds shall be submitted in accordance with the following:

- a. **A LABOR AND MATERIAL BOND** in an amount of at least 100% of the Contract price in favor of the City of Walled Lake as a guarantee of payment to subcontractors, material suppliers and labor.
- b. **A PERFORMANCE BOND** in an amount of at least 100% of the Contract price in favor of the City of Walled Lake conditioned upon faithful performance of the Contract and completion on or before the date specified.
- c. **A MAINTENANCE/GUARANTEE BOND** in an amount of at least 50% of the Contract price in favor of the City of Walled Lake shall be furnished at the time of final payment which will cover repair and replacement of any portion of the "work" which may have failed because of nonconformance to the terms of the Contract and Specifications or other unforeseen for a period of one (1) year from the date of final acceptance.

All bonds shall be issued by a bonding company licensed in the State of Michigan and shall be subject to the approval and acceptance by the City of Walled Lake. All bonds shall be in an amount not less than 100% of the contract price without deductible.

All work shall be performed in a professional and competent manner using quality equipment and materials, all of which must be maintained and operated with the highest standard as well as meeting all OSHA and MIOSHA safety standards.

Each bidder must submit a list of pertinent, similar projects, which the bidder has completed as well as reference contacts.

## **F. AWARD OF CONTRACT**

---

The City of Walled Lake reserves the right to reject any or all bids and to waive irregularities in bidding. The successful bidder shall be required to furnish satisfactory certificates of insurance.

The responsible bidder will be required to bear all expense of material tests required by the Specifications.

All bids are to be firm for a period of sixty (60) days from the date of bid. No proposal shall be withdrawn within this period other than as provided under II.D above.

Only those items listed in the proposal are pay items, and other work called for either by plans or specifications is classed as incidental and the cost shall be included in the prices bid in the proposal.

The Contractor is cautioned not to unbalance his bid. He shall also make all bids in strict accordance with the following:

- Make bids upon the forms provided, properly executed and with all items filled out.
- Do not change the wording of the bid form.

Unauthorized conditions, limitations, or provisions attached to the proposal shall be cause for rejection of the proposal. Alterations by erasure or interlineation must be explained or noted in the bid over the signature of the bidder.

The City of Walled Lake reserves the right to increase or decrease the bid quantities by as much as 50%, and to increase or decrease the restoration items as much as 100% with no adjustment in the unit prices submitted.

The bidder to whom the contract is awarded by the City shall, within ten (10) days after notice of award, pick up, sign and deliver to the City all required contracts supplied, insurance policies and bonds as requested.

Failure or refusal to furnish bonds or insurance policies or certificates in a form satisfactory to the City shall subject the bidder to loss of time from the allowable construction period equal to the time of delay in furnishing the required material.

Notwithstanding any delay in the preparation and execution of the formal contract agreement, each responsible bidder shall be prepared, upon written notice of bid acceptance and approval of bonds and insurance, to commence work within ten (10) days following receipt of official written notice to proceed or on a date stipulated in such order.

## **G. QUALIFICATION OF BIDDERS**

To demonstrate his qualifications for the project, the bidder must be prepared to submit within five (5) days of the City of Walled Lake's request, written evidence of the bidder's financial and/or legal status; a list of work of a similar nature to that covered in the proposal, completed by the bidder and the year in which the work was done; the principal items of equipment owned by the bidder which he proposes to use on this project; a list of banks for reference; and the financial ability to successfully and properly execute the specified work.

## **H. Liability**

The Contractor shall and does assume liability under the terms of the Workmen's Compensation Law of the State in which the work is being performed.

Contractor assumes all liability for injury to persons or damage to, or loss of property of (a) Contractor, his agents, subcontractors or employees, (b) City, its agents, subcontractors or employees, and (c) any other person, firm or corporation arising in any way directly or indirectly out of the performance of this Contract whether or not such injury, damage, or loss is due to the negligence of the Contractor, its agents or employees. This foregoing assumption of liability by Contractor shall include, without limiting the generality of the foregoing, any injury, damage, or loss arising out of the operation of motor vehicles. This

assumption of liability by Contractor shall also include, without limiting the generality of the foregoing, any injury, damage or loss (1) arising out of the negligence of Contractor, (2) arising out of the joint or combined negligence of Contractor and City, (3) arising out of the negligence of a third party or parties and Contractor, or (4) without limiting in any way the foregoing, arising in any way, directly or indirectly out of the conduct or occurrence not fully limited to the separate sole negligence of the City as proven by Contractor or third party.

Should the City or an agent or employee of the City be made a party to any suit or proceeding, even though such suit or proceeding is groundless, false or fraudulent, arising out of injury, damage, or loss for which the Contractor assumes liability under this Contractor, the Contractor will defend such suit or proceeding and shall indemnify and save harmless the City, its agents or employees, of and from all liability loss, expenses, judgments (including interest thereon), including Attorney's fees.

Since Contractor hereunder shall be an independent Contractor and not an agent, servant, or employee of City, Contractor assumes full responsibility for compliance with any and all Federal, State, or municipal laws, ordinances, and regulations, including (but not limited to) those having to do with labor, wages and benefits, or taxes and duties collectible from employees under all applicable provisions of the law.

## **I. Insurance**

---

Unless otherwise specified, the Contractor shall, before commencing work hereunder, procure and thereafter maintain policies of insurance satisfactory to the City covering the liabilities assumed above in the following minimum amounts: -

Property Damage	\$1,000,000 (each accident)
Bodily Injury	\$1,000,000 (each person)
Workmen's Compensation Insurance	All liabilities imposed by Workmen's Compensation Statutes
Employer's Liability Insurance	\$ 100,000
Contractual Liability Insurance	\$1,000,000
Completed Operations Insurance	\$ 500,000

Owned, Hired and Non-City Vehicle Bodily Injury and Property Damage to the following Limits:

- Bodily Injury	\$1,000,000 (each person)
- Accidental Death	\$1,000,000 (each accident)
- Property Damage	\$1,000,000 (each accident)

The Contractor agrees to have the insurance company file with the City before commencing work hereunder, certificates of insurance which shall contain a provision that no change in the amount of said insurance, or termination thereof, shall take place without previous 10 days written notice to the City and its written consent to such change or termination.

The selected Contractor must have the City named as additional insureds.



## **J. Civil Rights**

---

In accordance with the Elliot-Larsen's Civil Rights Act, the parties hereto covenant not to discriminate against any employee or applicant for employment with respect to hire, tenure, terms, conditions or privileges of employment, or matters directly or indirectly related to employment status, and to require a similar covenant on the part of any subcontractor employed in the performance of this Agreement. It is further agreed to by the Contractor that it will comply with all terms, conditions and requirements of the Americans With Disabilities Act, including not only its hiring practices, but its employment practices and all the requisite accommodations necessary there under to comply with this Act.

### III. BID FORM

NAME OF BIDDER: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

\_\_\_\_\_

PHONE NO: \_\_\_\_\_ FAX NO: \_\_\_\_\_

## City Campus Landscape Improvements

Walled Lake, Michigan

---

### 1. PROPOSAL

---

The undersigned, as bidder, hereby declares this bid is made in good faith without fraud or collusion with any persons bidding, and that he has examined the plans, specifications and location of the work described herein and is fully informed as to the nature of the work and the conditions relating to its performance.

The bidder acknowledges that he has not received or relied upon any representations or warranties of any nature whatsoever from the City of Walled Lake, its agents or employees, as to any conditions to be encountered in accomplishing the work specifically including subsoil conditions, and that his bid is based solely upon the bidder's own independent business judgment.

The bidder to whom this contract is awarded will not be entitled to any additional compensation by reason of conditions being different from those anticipated or by reason of his failing to fully acquaint himself with the site or subsoil conditions, the conditions and the work now in place or on account of interference by the City of Walled Lake or by any other contractor's activities which affect the work of his contract.

The undersigned, as bidder, agrees to make his own determination as to soil and subsoil conditions.

The undersigned, as bidder, agrees to assume all risk and responsibility and shall complete the work in whatever material (soil and subsoil) and under whatever conditions he may encounter or create without extra cost to the City of Walled Lake.

The Undersigned, as bidder, having familiarized himself with all the local conditions likely to be encountered affecting the cost of the work, and having carefully examined each and every item of the Project Manual, including the specifications, drawings, alternates and addenda issued which he fully understands and hereby makes all conditions and requirements thereof a part of this proposal, does hereby declare that he will contract to provide all materials, supplies, labor and construction, tools, equipment, permits and necessary services to be performed and complete all the work incidental thereto in accordance with the plans and specifications prepared by the Landscape Architect: McKenna Associates, 235 E. Main St. Ste. 105, Northville, Michigan for the total contract price of:

---

**GRAND TOTAL PRICE – *Written***

---

**GRAND TOTAL PRICE – *In Figures***

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

The grand total figure constitutes the aggregate amount quoted herein. It is based upon the following quantities and the unit prices indicated. Extensions to and deletions from the contract shall be based upon the unit prices quoted herein. The unit prices for the bid items include all labor, equipment, materials and incidental items required to provide the Owner with a complete installation ready for use.

## 2. ITEMIZED COSTS

<b>Trees</b>						
qty.	common name	size	ht/spd	comments	Unit	Total
10	Downy Serviceberry		8' ht	Minimum 5 Stems	\$	\$
3	Green Mountain Sugar Maple	2.5"			\$	\$
9	Heritage River Birch		14' ht.	Minimum 3 stems	\$	\$
1	American Beech	2.0"			\$	\$
3	Tulip Tree	2.5"			\$	\$
12	White Spruce	8'			\$	\$
<b>Shrubs</b>						
19	Iroquois Beauty Black Chokeberry	5 gal.		Well Rooted	\$	\$
14	Bobo Hydrangea	5 gal.		Well Rooted	\$	\$
3	Snow Queen Oakleaf Hydrangea	5 gal.	30" ht.	Well Rooted	\$	\$
26	Lime Light Hydrangea	5 gal.		Well Rooted	\$	\$
36	Hetz Columnar Juniper		5' ht.	Matched	\$	\$
70	Summer Wine Ninebark	5 gal.		Well rooted	\$	\$
25	Dense Yew		24" ht.	Trim to uniform hedge	\$	\$
10	Techny Arborvitae		6'		\$	\$
3	Judd Fragrant Viburnum		36" ht.		\$	\$
<b>Perennials</b>						
40	Karl Foerster Feather Reed Grass	3 gal.		Well rooted	\$	\$
18	Halcyon Hosta	2 gal.		Well Rooted	\$	\$
44	Happy Returns Daylily	1 gal.		Well Rooted, 3 fan minimum	\$	\$
200	Variegated Solomon's Seal	1 gal.		Well Rooted	\$	\$
30	Dwarf Fountain Grass	1 gal.		Well Rooted	\$	\$
22	Shenandoah Switchgrass	3 gal.		Well Rooted	\$	\$
277	Black-eyed Susan	1 gal.		Well Rooted	\$	\$
371	Tara Prairie Dropseed	1 gal.		Well Rooted	\$	\$
<b>Seed Mix</b>						
2,660	Midwest Mesic Pollinator Seed Mix				\$	\$
219	Stormwater Seed Mix				\$	\$
<b>Other</b>						
	Irrigation			Unit	\$	\$
140	Plant Mix			Cubic Yards	\$	\$
90	Seeded Lawn			Square Yards	\$	\$
77	Sod			Square Yards	\$	\$
225	Shredded Bark Mulch			Cubic Yards	\$	\$
92	Topsoil for Planting			Cubic Yards	\$	\$
	Tree Staking			Unit	\$	\$
<b>Total</b>						\$

**3. SUBSTITUTIONS**

---

The Undersigned states that the above proposal is based on the various brands, makes, manufacturers and standards of materials specified, and unless substitutions are authorized by addenda prior to award of contract, the Undersigned agrees to use the materials and equipment as specified.

However, the Undersigned submits the following substitutions for consideration and states that the amount to be deducted from the proposal for such substitutions shall be as follows:

<i>Item of Material</i>	<i>Alternate Material</i>	<i>Deduct Value</i>
_____	_____	_____
_____	_____	_____
_____	_____	_____

**4. FEES FOR HANDLING ADDITIONAL WORK**

---

Any adjustment for additional work performed or deleted from this contract shall be paid on the basis of the unit prices submitted in the Bid Form. Items not covered by the unit prices shall be negotiated between the Owner and the Contractor prior to their installation.

**5. COMMENCING OF WORK**

---

If awarded the Contract, the Undersigned agrees to execute the contract within Ten (10) days and to start work by **May 30, 2017**. At least Twenty-Four (24) hours notice must be given to the Landscape Architect before commencement of any demolition work.

**6. COMPLETION OF WORK**

---

The project shall be substantially completed prior to **June 30, 2017**, including restoration and clean up. The final completion date for the project is **July 31, 2017**. The contractor shall **submit a preliminary schedule with the bid**.

**7. ADDENDA**

---

The following addenda covering changes in the work have been received during the bidding period. The work described therein had been included in the proposal.

Addendum No. \_\_\_\_\_ Date \_\_\_\_\_

Addendum No. \_\_\_\_\_ Date \_\_\_\_\_

Addendum No. \_\_\_\_\_ Date \_\_\_\_\_

**8. BONDS, PERMITS AND INSPECTION FEES**

---

Bonds will be required of the successful bidder as specified in the General Requirements Section of these Specifications. The inspection of the work will be performed by McKenna Associates. Bond and permitting fees required by Wayne County shall be the responsibility of the Contractor and shall be incorporated in the Contractor's bid prices.

**9. VALUE OF TIME**

---

The Contractor shall compensate the City of Walled Lake in the amount of **\$200.00** for each day in time required to complete the work described herein beyond the time allocated. This charge shall not be deemed as a penalty clause, but shall be for liquidated damages caused to the City of Walled Lake by unnecessary delays in construction caused by the Contractor.

**10. TRAFFIC CONTROL**

---

The Contractor shall maintain safe traffic flow within the adjacent parking lot and public roads at all times. Alternative routing and all necessary provisions identifying temporary routes and unavailable parking are the sole responsibility of the contractor.

**11. THE CITY OF WALLED LAKE'S RIGHT TO CHANGE QUANTITIES**

---

The City of Walled Lake reserves the right to eliminate any item shown in the unit price sheet and/or to increase/decrease the quantities shown in the unit price schedule by as much as 50% without adjusting the unit prices shown in this proposal form.

**12. ACCEPTANCE OF PROPOSAL**

---

The Undersigned agrees to execute a Contract providing that we be notified of the acceptance within Thirty (30) days of the time set for receipt of proposals.

NAME OF FIRM: \_\_\_\_\_

BY: \_\_\_\_\_ DATE: \_\_\_\_\_

NAME: \_\_\_\_\_ TITLE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE: \_\_\_\_\_

*Our Sub-contractors will be:*

**Name:**

**Address:**

**Specialty:**

---

---

---

---

---

---

---

---

---

---

---

---

\* \* Please attach additional sheet to continue Sub-contractor list if necessary \* \*

SECTION 02220  
FINE GRADING

PART 1 - GENERAL

1.01 WORK INCLUDED:

- A. Provide all labor, materials, necessary equipment and services to complete the Fine Grading work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".
- B. Related work specified elsewhere:
  - 1. Section 02933: Seeding
  - 2. Section 02934: Sodding

1.02 SITE INSPECTION:

- A. The Contractor shall visit the site and acquaint himself with all existing conditions.

1.03 QUALITY ASSURANCE:

- A. Primary emphasis should be given to the aesthetic appearance as directed by the Landscape Architect or Owner's Representative. The Contractor shall employ skilled personnel and any necessary equipment to insure that finish grading is smooth, aesthetically pleasing, drains well and is ideal for receiving sod and plant materials.

PART 2 - MATERIALS

2.01 EXISTING SOIL:

- A. Use on-site material, unless otherwise directed by Owner's Representative, free from debris, sod, biodegradable materials and other deleterious materials. The Contractor shall insure that all existing soil has sufficient percolation and surface drainage to support grasses and plant material and that extreme compaction occurs only in areas to receive paving.
- B. In areas to receive seeding, verify that soil is scarified to depth of 4" and that soil contains enough organic matter to support and encourage rooting.

PART 3 - EXECUTION

3.01 JOB CONDITIONS:

- A. Dust control: Use all means necessary to prevent dust from construction operations from being a nuisance to adjacent property owners and from damaging finish surfaces on adjacent building, paving, etc. Methods used for dust control are subject to approval by the Landscape Architect of Owner's Representative.
- B. Burning: On-site burning will not be permitted.



- C. Protection: Use all means necessary to protect curbs, gutters, sprinklers, utilities and vegetation designated to remain, and, in the event of damage, immediately make all repairs, replacements and dressings to damaged plants necessary to the approval of the Landscape Architect. Contractor shall incur all cost for the replacement of damaged objects and vegetation.

3.02 SCHEDULING:

- A. Schedule all work in a careful manner with all necessary consideration for adjoining property owners and the public.
- B. Coordinate schedule with other Contractors to avoid conflicts with their work.

3.03 EXCAVATION:

- A. Materials to be excavated are unclassified.
- B. Remove entirely any existing obstructions after approval by the Landscape Architect's or Owner's Representative.
- C. Remove from site and dispose of debris and excavated material not required.

3.04 GRADING:

- A. The Contractor shall establish finished grades in all disturbed areas. Finished grade is defined as matching existing grade.
- B. Finished grading shall be smooth, aesthetically pleasing, drain well and ready to receive sod and other plant material to full satisfaction of the Owner's Representative and/or the Landscape Architect.

3.05 COMPACTION:

- A. No backfill shall be placed against any masonry or other exposed building surface until permission has been given by the Owner's Representative, and in no case until the masonry has been in place seven days.
- B. Compaction in limited areas shall be obtained by the use of mechanical tampers or approved hand tampers. When hand tampers are used, the materials shall be deposited in layers not more than four inches thick. The hand tampers used shall be suitable for this purpose and shall have a face area of not more than 100 square inches. Special precautions shall be taken to prevent any wedging action against masonry or other exposed building surfaces.

3.06 CORRECTION OF GRADE:

- A. Bring to required grade levels areas where settlement, erosion or other grade changes occur. Adjust grades as required to carry drainage away from buildings and to prevent ponding around the buildings and on pavements.
- B. Remove all rock or objectionable material larger than 1" any direction prior to commencing landscaping.
- C. Contractor shall be responsible for stabilizing grades by approved methods prior to landscaping, and shall be responsible for correction of grades as mentioned above, and clean up of any wash outs or erosion.

END OF SECTION 02220

## SECTION 02810 – IRRIGATION SYSTEM

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS:

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

#### 1.02 DESCRIPTION OF WORK:

- A. Extent of irrigation system work is shown on drawings and by provisions of this Section.
- B. The sprinkler system shall be constructed using sprinklers, valves, piping, fittings, controllers, wiring, etc., of size and types as shown on drawings and as called for in these specification. The system shall be constructed to grades and conform to areas and locations as shown on the drawings.
- C. Sprinkler lines shown on the drawings are essentially diagrammatic. Spacing of the sprinkler heads or quick coupling valves are shown on the drawings and shall be exceeded only with the permission of the Owner's authorized representative.
- D. Unless otherwise specified or indicated on the drawings, the construction of the sprinkler system shall include the furnishing, installing and testing of all mains, laterals, risers and fittings, sprinkler heads, quick coupling valves, control valves, and other necessary specialties and the removal and/or restoration of existing improvements, excavating and backfill, and all other work in accordance with plans and specifications as required for a complete system.
- E. Related work specified elsewhere:
  - 1. Section 02933: Seeding
  - 2. Section 02934: Sodding
  - 3. Section 02950: Trees, Shrubs and Ground Covers

#### 1.03 QUALITY ASSURANCE:

- A. The Contractor shall maintain continuously a competent superintendent, satisfactory to the Owner, with authority to act for him in all matters pertaining to the work.
- B. The Contractor shall coordinate his work with the other trades.
- C. The Contractor shall confine his operations to the area to be improved and to the areas allotted him by the Owner's representative for material and equipment storage.
- D. The Contractor shall have a minimum of 5 years experience installing irrigation systems of comparable size and complexity.

#### 1.04 SUBMITTALS:

- A. Submit specific product information including make and model number to the irrigation consultant or landscape architect on backflow devices, valves, sprinklers, controller, wire connectors and wire, pipe and fittings, clamps. pumps (when specified) to be used on the project prior to purchasing materials. Submittals are subject to the irrigation consultant's approval.

- B. Upon irrigation system acceptance, submit written operating and maintenance instructions. Provide format and contents as directed by the Landscape Architect. Include instruction sheets and parts lists for all operating equipment.
- C. Provide a reproducible irrigation system record drawing showing sprinkler heads, valves, field splices, drains and pipelines including quick coupler and automatic valves. Drawing is to be given to the owner or the owner's representative at the final irrigation system walkthrough
  - 1. Legibly mark drawings to record actual construction.
  - 2. Indicate horizontal locations, with a minimum of two dimensions to permanent surface improvements.
  - 3. Identify field changes of dimension and detail and changes made by Change Order.

1.05 DELIVERY, STORAGE AND HANDLING:

- A. Deliver irrigation system components in manufacturer's original undamaged and unopened containers with labels intact and legible.
- B. Deliver plastic piping in bundles, packaged to provide adequate protection of pipe ends, both threaded or plain.
- C. Store and handle materials to prevent damage and deterioration.
- D. Provide secure, locked storage for valves, sprinkler heads and similar components that cannot be immediately replaced, to prevent installation delays.

1.06 PROJECT CONDITIONS:

- A. The bidder acknowledges that he has examined the site, plans and specifications, and the submission of a proposal shall be considered evidence that examination has been made.
- B. It shall be the contracting installer's responsibility to report to the Owner's authorized representative any deviations between drawings, specifications and the site. Failure to do so prior to the installing of equipment and resulting in replacing and/or relocation equipment shall be done at the Contractor's expense.
- C. The exact location of all existing utilities and structures and underground utilities are not indicated on the drawings; their locations shall be determined by the Contractor, and he shall conduct his work so as to prevent interruption of service or damage to them. The Contractor shall protect existing structures and utility services and be responsible for their replacement if damaged by him.
- D. Minor adjustments in system layout will be permitted to clear existing fixed obstructions. Final system layout shall be acceptable to Landscape Architect.

1.07 CODES AND STANDARDS:

- A. The entire installation shall fully comply with all local and state laws and ordinances and with all established codes applicable thereto.
- B. Any permits for the installation of construction of the work included under this contract which are required by any of the legally constituted authorities having jurisdiction, shall be obtained and paid for by the Contractor, each at the proper time. He shall also arrange for and pay all costs in connection with any inspections and examinations required by these authorities.
- C. In all cases where inspection of the sprinkler system work is required and/or where portions of the work are specified to be performed under the direction and/or inspection of the

Owner's authorized representative, the Contractor shall notify the Owner's authorized representative at least 24 hours in advance of the time and such inspection and/or direction is required.

- D. Any necessary re-excavation or alterations to the system needed because of failure of the Contractor to have the required inspections shall be performed at the Contractor's own expense.

1.08 SERVICE AND MAINTENANCE:

- A. The Contractor shall service the system at the request during the guarantee period and shall be paid for work performed which is not covered by the guarantee. Contractor shall winterize the system the first year as part of this contract, and will provide written instructions to the Owner for future service and maintenance.
- B. Return to the site during the subsequent spring season and demonstrate to the Owner the proper procedures for the system start-up, operation and maintenance.
- C. After completion, testing and acceptance of the system, the Contractor will instruct the Owner's personnel in the operation and maintenance of the system.

1.09 OWNER'S ACCEPTANCE:

- A. The completion of the contract will be accepted and Notice of Completion recorded only when the entire contract is completed to the satisfaction of the Owner's authorized representative.
- B. Within ten (10) days of the Contractor's notification that the installation is complete, the Owner, or his Representative will inspect the installation and if a final acceptance is not given, will prepare a "Punch List" which, upon completion by the Contractor, will signify acceptance by the Owner.
- C. Final payment will not be made without the receipt of an accurate as-built drawing by the Landscape Architect.

1.10 WARRANTY:

- A. It shall be the Contractor's responsibility to ensure and guarantee satisfactory operation of the entire system and the workmanship and restoration of the area. The entire system shall be guaranteed to be complete and perfect in every detail for a period of one year from the date of its acceptance and he hereby agrees to repair or replace any such defects occurring within that year, free of expense to the Owner. Minor maintenance and adjustment shall be by Owner.
- B. Contractor to guarantee that all trenches and other disturbed areas to be free from heaving or settling more than one-quarter (1/4"). Should it become necessary to adjust the grade, regrade the trench and reseed. This no-settlement clause shall extend over the entire period of guarantee of the job.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. General:

- 1. All materials to be incorporated in this system shall be new and without flaws or defect and quality and performance as specified. All material overages at the completion of the installation are the property of the contractor and are to be removed from the site.

2. The Contractor shall use materials as specified. Material other than specified will be permitted only after written application by the Contractor and written approval by the Landscape Architect. Substitutions will only be allowed when in the best interest of the Owner.

**B. Pipe and Fittings:**

1. Pipe sizes shall conform to those shown on the drawings. No substitutions of smaller pipe sizes will be permitted, but substitutions of larger size may be approved. All pipe damaged or rejected because of defects shall be removed from the site at the time of said rejection.
2. Provide pipe continuously and permanently marked with manufacturer's name or trademark, size schedule and type of pipe working pressure at 73 degrees F. and National Sanitation Foundation (NSF) approval.
3. All mainline piping and underground piping under continuous pressure plus all pipe 2-1/2" or larger whether a lateral or mainline, shall be rigid, unplasticized polyvinyl chloride pipe extruded from virgin parent material, ASTM D 2241. Provide pipe homogeneous throughout and free from visible cracks, holes, foreign materials, blisters wrinkles and dents.
4. PVC Pipe 2" diameter or larger shall be SDR 26, Class 160 unless stated otherwise on the drawing.
5. PVC Pipe 3" and smaller shall be solvent weld type.
6. PVC pipe fittings for sizes 3" and smaller shall be ASTM D2466 schedule 40 PVC molded fittings suitable for solvent weld. All threaded PVC pipe fittings shall be ASTM D2467, Schedule 80 PVC.
7. Saddle and cross fittings are not permitted. Use male adapters for plastic to metal connections. Hand tighten male adapters plus one turn with a strap wrench.
8. All pipe downstream from zone valves, sized 2" and smaller, shall be flexible non-toxic polyethylene pipe. Polyethylene pipe shall be ASTM rated at 80 PSI minimum working pressure, and in conformance with ASTM 2239, NSF approved. Pipe larger than 2" size shall be PSI as specified for mainlines. PE 2306 fittings for polyethylene pipe shall be ASTM D2609 insert type fittings. Saddle and cross fittings not permitted. All joints shall be secured with stainless steel band and screw clamps.
9. Primer and solvent for use with PVC pipe to conform to ASTM D2564. Primer to be purple in color. Solvent to be appropriate for pipe and fitting type and weather conditions.
10. All above grade pipe shall be type 'M' copper. Fittings shall be cast brass or wrought copper.

**B. Control System**

1. The automatic controllers and valves shall be as shown on drawings.

**D. Control Wire and Connections:**

1. Control wire shall be Type UF, UL approved, for direct burial and shall be Size 14 or larger, as noted on the plans. Conductor to be single strand soft annealed copper.
2. 24 volt control wires to be red in color. Common wire to be white in color.
3. Low voltage wire connectors to be made using 3M DBY connectors.

4. 120 volt or heavier splices made underground to be made using 3M DBY connectors.

E Sprinkler Heads and Valves:

1. Sprinkler equipment shall be as shown on drawings.

F. Clamps:

1. Clamps to be stainless steel, worm gear hose clamps with stainless steel screw.

G. Valve Boxes:

1. Valve Access Boxes to be tapered enclosure of rigid plastic material comprised of fibrous components chemically inert and unaffected by moisture corrosion and temperature changes. Provide lid of same material black in color. Boxes to be minimum 10" wide and of minimum size required to permit access to the valve. Side walls to extend at least 2" below the bottom of valve body; use extension as necessary. Manufacturer to be Ametek.

H. Accessories:

1. Drainage fill: 1/2" x 3/4" washed pea gravel.
2. Fill shall be clean soil free of stones larger than 2" diameter, foreign matter, organic material and debris.
3. Provide imported fill material as required to complete the work. Obtain rights and pay all costs for imported materials.
4. Suitable excavated materials removed to accommodate the irrigation system work may be used as fill material subject to the Landscape Architect's review and acceptance.

### PART 3 - EXECUTION

#### 3.01 EXAMINATION:

- A. Examine final grades and installation conditions. Do not start irrigation system work until unsatisfactory conditions are corrected.

#### 3.02 PREPARATION:

- A. Layout and stake the location of each pipe run and all sprinkler heads and sprinkler valves. Obtain Landscape Architect's acceptance of layout prior to excavating, unless specifically waived by the Landscape Architect.

#### 3.03 EXCAVATING AND BACKFILLING:

- A. Excavating shall be considered unclassified and shall include all materials encountered, except materials that cannot be excavated by normal mechanical means. Excavate trenches of sufficient depth and width to permit proper handling and installation of pipe and fittings. Excavate to depths required to provide 2" depth of earth fill or sand bedding for piping when rock or other unsuitable bearing material is encountered.

- B. Pipe pulling will be allowed for lateral pipe only, provided soil moisture content and other conditions are suitable to allow for full depth of bury with a minimum of stretching and scraping of the pipe. Landscape Architect reserves the right to determine suitability or conditions. If the pulling method is used, the pipe "plow" shall be a vibratory type.
- C. Fill to match adjacent grade elevation with approved earth fill material. Place and compact fill in layers not greater than 8" depth.
- C. Provide approved fine grained earth fill or sand to point 4" above the top of pipe, where soil conditions are rocky or otherwise objectionable.
- D. Fill to within 6" of final grade with approved excavated or borrow fill materials free of lumps or rocks larger than 2" in any dimension.
- E. The top 6" of backfill shall be topsoil, free of rocks, subsoil or trash. Any special soil mixture shall be replaced to the original condition it was prior to irrigation installation.
- G. Except as indicated, install irrigation mains with a minimum cover of 18" based on finished grades. Install irrigation laterals with a minimum cover of 14" based on finished grades.
- H. Excavate trenches and install piping and backfill during the same working day. Do not leave open trenches or partially filled trenches open overnight.

#### 3.04 UNDERGROUND PIPE:

- A. Install plastic pipe in accordance with manufacturer's installation instructions as ASTM D2274. Provide for thermal expansion and contraction.
- B. Saw cut plastic pipe. Use a square-in-sawing vice, to ensure a square cut. Remove burrs and shavings at cut ends prior to installation.
- C. Make PVC plastic to plastic joints with solvent weld joints. Use only primer and solvent recommended by the pipe manufacturer. Install plastic fittings in accordance with pipe manufacturer's instructions and ASTM D2855. Contractor shall make arrangements with pipe manufacturer for all necessary field assistance.
- D. Allow joints to set at least 24 hours before pressure is applied to the system.
- E. Uncoil poly-pipe and insert fitting full depth. Secure poly-pipe to insert fittings with stainless steel clamps. Double clamp pipe 1-1/2" diameter and larger.
- F. Maintain pipe interiors free of dirt and debris. Close open ends of pipe by capping, taping or other acceptable method when pipe installation is not in progress.
- G. All mainline and continuously pressurized pipe is to be installed using open trenches. Lateral pipe may be installed by "Plowing" if soil conditions permit, and soils do not contain gravel, rock, construction debris or other potential damaging material.
- H. Install thrust blocks on the mainline pipe work in accordance with pipe manufacturer's written instructions.

#### 3.05 SPRINKLER INSTALLATION:

- A. Install fittings and sprinkler heads in accordance with manufacturer's instructions, except as otherwise indicated.
- B. Set sprinkler heads perpendicular to finished grades, except as otherwise indicated, and position to prevent contact with grounds maintenance equipment. Install sprinklers 6" off walks and curbs. Locate sprinkler heads to assure proper coverage of indicated sprinkler

heads to assure proper coverage if indicated areas. Do not exceed sprinkler head spacing distances indicated.

- B. Provide pop-up spray heads and rotary sprinklers ¾" IPS or smaller with two elbow poly swing joint riser as shown on drawings.
- D. Provide all quick coupling valves with three elbow swing joint, schedule 40 galvanized steel, as detailed on drawings.

### 3.06 VALVE INSTALLATION:

- A. Electric valve installation shall be as indicated on drawings. All electrical and manual valves shall be enclosed in a minimum ten (10) inch width valve box. Add extensions as required to prevent soil settlement around the valve. Set box flush with finish grade and aligned with adjacent boxes and/or adjoining sitework.
- B. Install valve access boxes on a suitable base of gravel to provide a level foundation at proper grade and to provide drainage of the access box. Support box with block or notch box to protect pipe under box.

### 3.07 DRAINS

- A. Although it is intended the system will be winterized using compressed air. Contractor to install manual drain valves at low points in the system to assist in winterization and service.

### 3.08 ELECTRICAL INSTALLATION:

- A. Install electrical control wire in the piping trenches wherever possible. Place wire in trench adjacent to or underneath mainlines but not above. Install wire with slack to allow for thermal expansion and contraction. Expansion joints in wire may be provided at 200 foot intervals by making 5-6 turns of the wire around a piece of 1/2" pipe instead of slack. Where necessary to run wire in a separate trench, provide a minimum cover of 24".
- B. Provide minimum 24" slack at remote control valves and at all wire splices to allow raising the valve bonnet or splice to the surface without disconnecting the wires for repair.
- C. Connect each remote control valve to one station of a controller except as otherwise indicated. Where there is to be more than one valve per station, make required splice at the control timer.
- D. Make splices only at valves, unless otherwise unavoidable. Locate all field splices on the as-built drawing.

### 3.09 FLUSHING AND TESTING:

- A. After all new sprinkler piping and risers are in place and connected for a given section and all necessary division work has been completed, and prior to the installation of sprinkler heads, all control valves shall be opened and a full head of water used to flush out the system.
- B. Sprinkler main shall be tested under normal water pressure for a period of 12 hours. If leaks occur, repair and repeat the test. Give Landscape Architect 24 hours notice prior to testing.
- C. Testing of the system shall be performed after completion of each section or completion of the entire installation; and any necessary repairs shall be made, at the Contractor's expense, to put the system in good working order before final payment by the Owner.
- D. Adjustment of the sprinkler heads and automatic equipment will be done by the contractor upon completion of installation to provide optimum performance. Minor adjustments during the guarantee period will be made by the owner.



3.10 CLEAN UP:

- A. Contractor shall keep the premises free from rubbish and debris at all times and shall arrange his material storage so as not to interfere with the Owner's operation of the job. Contractor shall remove and legally dispose of all unused material, rubbish and debris, including unsuitable excavated material from the site.

END OF SECTION 02810

## SECTION 02921 – TOPSOIL

### PART 1 - GENERAL

#### 1.01 DESCRIPTION OF WORK:

- A. Extent of Topsoil Work is shown on drawings and by provisions of this section.
- B. Topsoil for lawn work shall be as stripped from site or provided by contractor from off-site sources free of herbicides and conforming to the specifications herein.
- C. Related Work Specified Elsewhere:
  - 1. Section 02933: Seeding
  - 2. Section 02934: Sodding

#### 1.02 PROJECT CONDITIONS:

- A. Known underground and surface utility lines are to be obtained by contacting MISS DIG.
- B. Protect existing trees, plants, lawns and other features designated to remain.
- C. Promptly repair damage to adjacent facilities caused by topsoil operations. Cost of repair at Contractor's expense.
- D. Promptly notify the Landscape Architect of unexpected sub-surface conditions.

### PART 2 - PRODUCTS

#### 2.01 MATERIALS:

- A. Provide topsoil as required to complete job. All processing, cleaning and preparation of this topsoil to render it acceptable for use is the responsibility of this contractor.
- B. Supplied and/or stockpiled topsoil, shall be fertile, friable sandy, sandy loam soil without admixture of subsoil and free of stones, stumps, root, trash, debris, and other materials deleterious to plant growth. Topsoil shall not be frozen or muddy.

### PART 3 - EXECUTION

#### 3.01 EXAMINATION:

- A. Examine rough grades and installation conditions. Do not start topsoil work until unsatisfactory conditions are corrected.

#### 3.02 FINISH GRADING:

- A. Perform topsoiling within contract limits, including adjacent transition areas, to new elevations, levels, profiles, and contours indicated. Provide uniform levels and slopes between new elevations and existing grades.
- B. Grade surfaces to assure areas drain away from building structures and to prevent ponding and pockets of surface drainage.

- C. Lawn Areas: Supply and spread topsoil to a minimum uniform depth of 4" or as noted. Remove clumps larger than 1" in diameter.
- D. Grade lawn areas to a smooth, free draining even surface with a loose, moderately coarse texture ready to accept seed or sod.
- E. Provide earth crowning where indicated on drawings.
- F. Crowning/mounding to be free flowing in shape and design, as indicated, and to blend into existing grades gradually so that toe of slope is not readily visible. Landscape Architect to verify final contouring before planting.
- G. Regardless of finish grading elevations indicated, it is intended that grading be such that proper drainage of surface water will occur and that no low areas are created to allow ponding. Contractor to consult with Owner or Landscape Architect regarding minor variations in grade elevations before rough grading is completed.

3.03 CLEANING:

- A. Upon completion of topsoiling operations, clean areas within contract limits, remove tools and equipment. Site shall be clear, clean, free of debris and suitable for site work operations.

END OF SECTION 02921

SECTION 02933 – SEEDING

PART 1 – GENERAL

1.02 DESCRIPTION OF WORK:

A. Extent of seeded lawns are all disturbed areas within the project limits.

B. Types of work required includes the following:

1. Soil preparation
2. Seeding lawns
3. Mulching

C. Related Work Specified Elsewhere:

1. Section 02810: Irrigation System
2. Section 02220: Fine Grading
3. Section 02921: Topsoil
5. Section 02934: Sodding
4. Section 02970: Landscape Maintenance and Warranty Standards

1.03 DELIVERY, STORAGE AND HANDLING:

A. Deliver seed and fertilizer materials in original unopened containers, showing weight, analysis and name of manufacturer. Store in a manner to prevent wetting and deterioration.

1.04 PROJECT CONDITIONS:

- A. Work notification: Notify Landscape Architect at least 1 working day prior to start of seeding operation.
- B. Protect existing utilities, paving and other facilities from damage caused by seeding operations.
- C. Perform seeding work only after other work affecting ground surface has been completed,

PART 2 – PRODUCTS

2.01 MATERIALS:

- A. Topsoil for Seeding Lawn Areas: Refer to Section 02921 and to drawings.
- B. Seed: Fresh, clean and new crop seed mixture. Mixed by approved methods.
- C. Composed of the following varieties, mixed to the specified proportions by weight and tested to minimum percentages of purity and germination.
- D. Seed Mixture: Proportioned by weight as indicated below:

MDOT Roadside Seed Mix	
	Proportion
Perennial Ryegrass	50%
Creeping Red Fescue	35%
Kentucky Bluegrass	15%

Spread at a rate of 5 lbs.1000 sf.  
No noxious weed seeds permitted.

- E. Fertilizer: Granular, non-burning product composed of not less than 50% organic slow acting, guaranteed analysis professional fertilizer.
  - 1. Type A: Starter fertilizer containing 20% nitrogen, 12% phosphoric acid and 8% potash by weight or similar approved composition.
- F. Straw mulch: Used in crimping process only. Clean oat or wheat straw free from mature seed-bearing stalks or roots of prohibited or noxious weeds.

## PART 3 – EXECUTION

### 3.01 EXAMINATION:

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

### 3.02 PREPARATION OF SEEDED LAWN AREAS:

- A. Limit preparation to areas which will be immediately seeded.
- B. Loosen topsoil of lawn areas to minimum depth of 4'. Remove stones over 1" in any dimension and sticks, roots, rubbish and extraneous matter.
- C. Grade lawn areas to a smooth, free draining even surface with a loose, moderately coarse texture. Roll and rake, remove ridges and fill depressions as required to drain.
- D. Restore prepared areas to the specified condition if eroded, settled or otherwise disturbed after fine grading and prior to seeding.

### 3.03 INSTALLATION:

- A. Seed immediately after preparation of bed. Seed indicated areas within contract limits and areas adjoining contract limits disturbed as a result of construction operations.
- B. Perform seeding operations when the soil is dry and when winds do not exceed 5 miles per hour velocity.
- D. Apply seed with a rotary or drop type distributor. Install seed evenly by sowing equal quantities in 2 directions, at right angles to each other.
- E. Sow seed at a rate of 5 lbs./1,000 sf.
- F. After seeding, rake or drag surface of soil lightly to incorporate seed into top 1/8' of soil.

### 3.04 MULCHING:

- A. Place straw mulch on seeded areas within 24 hours after seeding.
- B. Place straw mulch uniformly in a continuous blanket at a rate of (2) 50 lb. bales per 1,000 sq. ft. of area. A mechanical blower may be used for straw mulch application when acceptable to the Landscape Architect.

3.06 LAWN ESTABLISHMENT:

- A. Establish dense lawn of permanent grasses, free from lumps and depressions. Any area failing to show uniform germination to be reseeded, continue until dense lawn established. Damage to seeded area resulting from erosion to be repaired by Contractor. Scattered bare spots over 5 percent not allowed.
- B. In event contractor does not establish dense lawn during germination period, return to project to fertilize and reseed to establish dense lawn.
- C. Should the seeded lawn become largely weeds after germination, Contractor responsible to kill the weeds and reseed the proposed lawn areas to produce a dense turf, as specified.

3.07 CLEANING:

- A. Perform cleaning during installation of the work and upon completion of the work to the approval of the Landscape Architect. Remove from site all excess materials, debris and equipment. Repair damage resulting from seeding operations. Clean all areas where overspray has occurred from hydroseeding operations.

END OF SECTION 02933

## SECTION 02934 - SODDING

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS:

- A. Attention is directed to Bidding and Contract Requirements, and to General and Supplemental Conditions, hereby made a part of this Section.

#### 1.02 DESCRIPTION OF WORK:

- A. Extent of sodded lawns is shown on drawings and by provisions of this Section.

- B. Types of work required include the following:

1. Soil preparation
2. Sodding lawns

- C. Related work specified elsewhere:

1. Section 02220: Fine Grading
2. Section 02810: Irrigation System
3. Section 02921: Topsoil
4. Section 02933: Seeding
5. Section 02970: Landscape Maintenance and Warranty Standards

#### 1.03 QUALITY ASSURANCE:

- A. Sod: Comply with American Sod Producers Association (ASPA) classes of sod materials.

#### 1.04 SUBMITTALS:

- A. Submit sod growers certification of grass species including special shade grown species. Identify source location.
- B. Manufacturer's certification of fertilizer.

#### 1.05 DELIVERY, STORAGE AND HANDLING:

- A. Cut, deliver and install sod within 24 hour period.
- B. Do not harvest or transport sod when moisture content may adversely affect sod survival.
- C. Protect sod from sun, wind and dehydration prior to installation. Do not tear, stretch or drop sod during handling and installation.

#### 1.06 PROJECT CONDITIONS:

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

- D. Restrict traffic from lawn areas until grass is established. Erect signs and barriers as required.
- E. Provide hose and lawn watering equipment as required.
- F. An irrigation system will be installed prior to sodding. Locate, protect and maintain the irrigation system during sodding operations. Repair irrigation system components damaged during sodding operations at this Contractor's expense.

1.07 WARRANTY:

- A. Refer to Section 02970

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Sod: An "approved" nursery grown blend of improved Kentucky Blue-grass varieties.
  - 1. Sod containing Common Bermudagrass, Quackgrass, Johnsongrass, Poison Ivy, Nutsedge, Nimblewill, Canada Thistle, Timothy, Bentgrass, Wild Garlic, Ground Ivy, Perennial Sorrel or Brome grass weeds will not be acceptable.
- B. Provide well-rooted, healthy sod, free of diseases, nematodes and soil borne insects. Provide sod uniform in color, leaf texture, density and free of weeds, undesirable grasses, stones, roots, thatch and extraneous material; viable and capable of growth and development when planted.
- C. Furnish sod machine stripped in square pads or strips not more than 3'-0" long; uniformly 1" to 1-1/2" thick with clean cut edges. Mow sod before stripping.
- D. Fertilizer: Granular, non-burning product composed of not less than 50% organic slow acting, guaranteed analysis professional fertilizer.
  - 1. Type A: Starter fertilizer containing 20% nitrogen, 12% phosphoric acid and 8% potash by weight or similar approved composition.
- E. Ground limestone: Containing not less than 85% of total carbonates and ground to such fineness that 50% will pass through a 100 mesh sieve and 90% will pass through a 20 mesh sieve. Use if determined by soil tests to be necessary.
- F. Stakes: Softwood, 3/4" x 8" long.
- G. Water: Free of substance harmful to sod growth. Hoses or other methods of transportation furnished by Contractor.
- H. Topsoil: Refer to Section 02921



## PART 3 - EXECUTION

### 3.01 EXAMINATION:

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

### 3.02 PREPARATION:

- A. Limit preparation to areas which will be immediately sodded. Spread topsoil, fine grade.
- B. Treat lawn areas with "Round Up", by Monsanto, per label directions as required to kill existing vegetation prior to sodding.
- C. Loosen topsoil of lawn areas to minimum depth of 3". Remove stones over 1" in any dimension and sticks, roots, rubbish and extraneous matter.
- D. Grade lawn areas to smooth, free draining and even surface with a loose, uniformly fine texture. Roll and rake; remove ridges and fill depressions as required to drain.
- E. Apply type A fertilizer at the rate equal to 1.0 lb. of actual nitrogen per 1,000 sq. ft. (43 lbs./acre). Apply fertilizer by mechanical rotary or drop type distributor, thoroughly and evenly incorporated with the soil to depth of 1" by discing or other approved methods. Fertilize areas inaccessible to power equipment with hand tools and incorporated it into soil.
- F. Dampen dry soil prior to sodding.
- G. Restore prepared area to specified condition if eroded, settled or otherwise disturbed after fine grading and prior to sodding.

### 3.03 INSTALLATION:

- A. Lay sod to form a solid mass with tightly-fitted joints. Butt ends and sides of sod strips. Do not overlay edges. Stagger strips to offset joints in adjacent course. Remove excess sod to avoid smothering of adjacent grass. Provide sod pad top flush with adjacent curbs, sidewalks, drains and seeded areas.
- B. Do not lay dormant sod or install sod on saturated or frozen soil.
- C. Install initial row of sod in a straight line, beginning at bottom of slopes, perpendicular to direction of the sloped area. Place subsequent rows parallel to and lightly against previously installed row.
- D. Peg sod on slopes greater than 3 to 1 to prevent slippage at a rate of 2 stakes per yd. of sod.
- E. Water sod thoroughly with a fine spray immediately after laying.
- F. Roll with light lawn roller to ensure contact with sub-grade.
- G. Sod indicated areas within contract limits and areas adjoining contract limits disturbed as a result of construction operations.

### 3.04 MAINTENANCE:

- A. Refer to Section 02970

3.05 ACCEPTANCE:

- A. Refer to Section 02970

3.06 CLEANING:

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

END OF SECTION 02934

## SECTION 02950 - TREES, SHRUBS AND GROUND COVERS

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS:

- A. Attention is directed to Bidding and Contract Requirements, and to General and Supplemental Conditions hereby made a part of this Section.

#### 1.02 DESCRIPTION OF WORK:

- A. Extent of trees, shrubs and ground covers is shown on drawing and by provisions of this Section.
- B. Types of work required include the following:
  - 1. Soil preparation
  - 2. Trees, shrubs and ground covers
  - 3. Planting mixes
  - 4. Mulch and planting accessories
  - 5. Soil percolation tests
- C. Related work specified elsewhere:
  - 1. Section 02921: Topsoil
  - 2. Section 02933: Seeding
  - 3. Section 02970: Landscape Maintenance and Warranty Standards

#### 1.03 QUALITY ASSURANCE:

- A. Plant names indicated, comply with "Standardized Plant Names" as adopted by the latest edition of the American Joint Committee of Horticultural Nomenclature. Names of varieties not listed conform generally with names accepted by the nursery trade. Provide stock true to botanical name and legibly tagged.
- B. Comply with sizing and grading standards of the latest edition of "American Standard for Nursery Stock". A plant shall be dimensioned as it stands in its natural position.
- C. All plants shall be nursery grown under climatic conditions similar to those in the locality of the project for a minimum of 2 years.
- D. Stock furnished shall be at least the minimum size indicated. Larger stock is acceptable, at no additional charge. Larger plants shall not be cut back to size indicated.
- E. Provide "specimen" plants with a special height, shape or character of growth. Landscape Contractor to tag specimen trees or shrubs at the source of supply. The Landscape Architect will inspect specimen selections at the source of supply for suitability and adaptability to selected location. When specimen plants cannot be purchased locally, provide sufficient photographs of the proposed specimen plants for approval. The Landscape Contractor shall inspect all plant material at source prior to Landscape Architect's approval. Landscape Contractor shall accompany Landscape Architect on final selection trip.
- F. Such approval shall not impair the right of inspection and rejection upon delivery at the site or during the progress of the work.

- G. Provide percolation testing by filling plant pits with water and monitoring length of time for water to completely percolate into soil. Submit test results to landscape architect prior to starting work.

1.04 SUBMITTALS:

- A. Submit the following material samples:
  - 1. Shredded bark mulch.
- B. Submit the following materials certification:
  - 1. Topsoil source and pH value
  - 2. Plant fertilizer

1.05 DELIVERY, STORAGE AND HANDLING:

- A. Deliver fertilizer materials in original, unopened and undamaged containers showing weight, analysis and name of manufacturer. Store in manner to prevent wetting and deterioration.
- B. Take all precautions customary in good trade practice in preparing plants for moving. Workmanship that fails to meet the highest standards will be rejected. Spray deciduous plants in foliage with an approved "Anti-Dessicant" immediately after digging to prevent dehydration. Dig, pack, transport and handle plants with care to ensure protection against injury. Inspection certificates required by law shall accompany each shipment invoice or order to stock and on arrival. A copy of certificate shall be filed with the Landscape Architect. Protect all plants from drying out. If plants cannot be planted immediately upon delivery, properly protect them with soil, wet peat moss or in a manner acceptable to the Landscape Architect. Water heeled-in plantings as required to keep root system moist until planting. No plant shall be bound with rope or wire in a manner that could damage or break the branches.
- C. Cover plants transported on open vehicles with a protective covering to prevent windburn.
- D. Frozen or muddy topsoil is not acceptable.

1.06 PROJECT CONDITIONS:

- A. Work Notification: Notify Architect at least 7 working days prior to installation of plant material.
- B. Protect existing utilities, paving and other facilities from damage caused by landscaping operations. See AIA General Conditions.
- C. A complete list of plants, including a schedule of sizes, quantities and other requirements is shown on the proposal form. In the event that quantity discrepancies or material omissions occur in the proposal form, Contractor shall notify the Landscape Architect during the proposal bidding process.
- D. An irrigation system will be installed prior to planting. Locate, protect and maintain the irrigation system during planting operations. Repair irrigation system components, damaged during planting operations, at this Contractor's expense.
- E. Perform percolation testing.
- F. Verify availability of on-site water.

G. Concealed contingencies. Refer to AIA General Conditions.

1.07 WARRANTY:

A. Refer to Section 02970.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Plants: Provide plants typical of their species or variety; with normal, densely developed branches and vigorous, fibrous root systems. Provide only sound, healthy, vigorous plants free from defects, disfiguring knots, sunscald injuries, frost cracks, abrasions of the bark, plant diseases, insect eggs, borers and all forms of infestation. All plants shall have a fully developed form without voids and open spaces.

1. Dig balled and burlapped plants with firm, natural balls of earth of sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the plant. Provide ball sizes complying with the latest edition of the "American Standard for Nursery Stock". Cracked or mushroomed balls are not acceptable.
2. Provide tree species that mature at heights over 25'-0" with a single, main trunk. Trees that have the main trunk forming a "Y" shape are not acceptable.
3. Trees to have clay or clay loam balls; sandy loam or sand balls are not acceptable.
4. Plants planted in rows shall be matched in form. (See specimen stock).
5. Plants larger than those specified in the plant list may be used when acceptable to the Landscape Architect.
6. If the use of larger plants is acceptable, increase the spread of roots or root ball in proportion to the size of the plant.
7. The height of the trees, specified by height, measured from the crown of the roots to the top of the top branch, shall not be less than the minimum size designated in the proposal form.
8. No pruning wounds shall be present with a diameter of more than 1" and such wounds must show vigorous bark on all edges.
9. Evergreen trees shall be unsharped and branched to the ground.
10. Shrubs and small plants shall meet the requirements for spread and height indicated on the proposal form.

B. Container-grown Stock: Grown in a container for sufficient length of time for the root system to have developed to hold its soil together, firm and whole.

1. No plants shall be loose in the container.
2. Container stock shall not be root bound.
3. The measurements for height shall be taken from the ground level to the average height of the top of the plant and not the longest branch.
4. Single stemmed or thin plants will not be accepted.
5. Side branches shall be generous, well twigged and the plant as a whole well bushed to the ground.
6. Plants shall be in a moist, vigorous condition, free from dead wood, bruises or other root or branch injuries.

C. Specimen Stock: All specimen designated plantings are to be nursery grown, fully developed, excellent quality and typical example of the species. Plants designated to be planted in rows must be matched, symmetrical and uniform in height, spread, caliper and branching density.

1. Matched plantings should be obtained from same nursery and, preferably, from same row or line. All specimen material will be approved by Landscape Architect at nursery.
- D. Topsoil for Planting Mix: Refer to Section 02921.
- E. Peat Moss: Brown to black in color, weed and seed free granulated raw peat.
1. Provide ASTM D 2607 sphagnum peat moss with a PH below 6.0 for ericaceous plants.
- F. Planting Mixture Type A: Standard planting backfill shall be a mixture of 1/3 topsoil, 1/3 sand and 1/3 peat per cubic yard of mixture. Add fertilizer Type "A" to planting mixture per manufacturer's requirements. Follow planting details.
- G. Planting Mixture Type B (for Flowers, Ground Cover Beds, Ericaceous Plants and Ornamental Grasses): Planting backfill shall be a mixture of 1/3 topsoil, 1/3 sand and 1/3 peat. Adding fertilizer type "B" to mixture per manufacturer requirements. Follow planting details.
- H. Plant Fertilizer Type A: "Scotts Pro Grow 18-3-6 landscape fertilizer plus minors, applied per manufacturer's recommendations.
- I. Plant Fertilizer Type B: Approved acid-base fertilizer; "Espoma Holly-Tone". 4-6-4 applied per manufacturer's instructions.
- J. "MyCor" Tree Saver Soil Conditioner manufactured by Plant Health Care, Inc., 1-800-421-9051. Use for all tree and shrub species except Rhododendrons, Azaleas and Laurels.
- K. Superphosphate: Composed of finely ground phosphate rock as commonly used for agricultural purposes containing not less than eighteen (18%) percent available phosphoric acid. Apply as required based upon soil test report.
- L. Lime: Ground dolomitic limestone, ninety-five (95%) percent passing through #100 mesh screen. Use to adjust soil pH only, under direction of Landscape Architect or based upon soil test report.
- M. Sand: Clean, coarse, ungraded conforming to ASTM C 3 for fine aggregates.
- N. Anti-Dessicant: Protective film emulsion providing a protective film over plant surfaces; permeable to permit transpiration. Mixed and applied in accordance with manufacturer's instructions.
- O. Shredded Bark Mulch: Clean, free of debris and sticks, and well aerated. Materials shall be uniform in size, shape and texture. Submit samples to owner for approval prior to installation.
- P. Water: Free of substances harmful to plant growth. Hoses or other methods of transportation furnished by Contractor.
- Q. Twine: Two-ply jute material.
- R. Natural Aluminum Edging (Mill Finish): 3/16" x 4" Pemaloc with interlocking joints and stakes. Install per manufacturer's recommendations. Top to be flush with finish grade, alignment per drawings. All edging to be new. Telephone (800) 356-9660, Holland, Michigan.

## PART 3 - EXECUTION

### 3.01 EXAMINATION:

- A. Examine proposed planting areas and conditions of installation. Do not start planting work until unsatisfactory conditions are corrected.

### 3.02 PREPARATION:

#### A. Time of planting:

1. Evergreen material: Plant evergreen materials between August 15 and October 1 or in spring before new growth begins. If project requirements require planting at other times, plants shall be sprayed with anti-dessicant prior to planting operations.
2. Deciduous material: Plant deciduous materials in a dormant condition. If deciduous trees are planted in-leaf, they shall be sprayed with an anti-dessicant prior to planting operation.
3. Planting times other than those indicated shall be acceptable to the Landscape Architect.

B. Planting shall be performed only by experienced workmen familiar with planting procedures under the supervision of a qualified supervisor.

C. Individual plant locations shall be staked on the project site by the Contractor and approved by the Landscape Architect before any planting pits are dug. The Landscape Architect reserves the right to adjust plant material locations to meet field conditions, without additional cost to the Owner.

D. Planting pits shall be round, with vertical sides and flat bottoms and sized in accordance with outlines and dimensions shown on the planting details.

E. Accurately stake plant material according to the drawings. Stakes shall be above grade and painted a bright color to be clearly visible for inspection.

F. If obstructions are encountered that are not indicated, do not proceed with planting operations until alternative plant locations have been selected and approved in writing by the Landscape Architect. Where location or spacing dimensions are not clearly shown, request clarification by the Landscape Architect.

G. See drawings for planting details.

#### H. Vegetation Removal:

1. Strip existing grass and weeds, including roots, from all bed areas, till and fine grade existing topsoil, leaving the soil surface one inch below finished grade (in areas shown on plan).
2. Herbicide: Use Round Up (Monsanto Co.) as required to prepare areas for new planting, applied to all ground cover, evergreen and shrubbery beds and all mulch areas before application of pre-emergence herbicide, per manufacturer's recommendations. Clean area of all dead material after five (5) days.
3. Pre-Emergence Herbicide: DACTHAL W-75 (Diamond Shamrock Agricultural Chemicals) applied to one (1) ounce per 100 square feet to same area where "Herbicide" has been applied and after area is cleared of dead vegetation.
4. Herbicides to be applied by licensed applicator as required by the state.

### 3.03 INSTALLATION:

A. Excavate circular plant pits with vertical sides, except for plants specifically indicated to be planted in beds. Provide plant pits per planting details. Depth of pit shall accommodate the root system. Scarify the bottom of the pit to a depth of 4".

B. Provide pre-mixed planting mixture Type "A" for use around the balls and roots of all deciduous and evergreen tree plantings.



C. Beds for Ground Cover, Flowers, Ericaceous Plants and Ornamental Grasses: Excavate existing soil to 12" depth over entire bed area and remove soil from site. Set plants according to drawings and backfill entire bed with pre-mixed planting mixture Type "B".

D. Mass Shrub Beds/Hedge Beds: Excavate existing soil to 18" depth over entire bed area and remove soil from site. Scarify bottom of the bed to a 4" depth. Set plants according to drawings and specs. and backfill entire bed with (pre-mixed) specified planting mixture Type "A".

E. Planting:

1. Set plant material in the planting pit to proper grade and alignment. Set plants upright, plumb and faced to give the best appearance or relationship to each other or adjacent structure. Set plant material 2"-3" above the finish grade. No filling will be permitted around trunks or stems. Backfill the pit with planting mixture. Do not use frozen or muddy mixtures for backfilling. Form a ring of soil around the edge of each planting pit to retain water in non-irrigated areas.
2. After balled and burlapped plants are set, muddle planting soil mixture around bases of balls and fill all voids. Sufficiently compact to prevent settlement.
3. Add "MyCor" Tree Saver to mix per manufacturer's directions.
4. Remove all burlap, ropes and wires from the tops of balls.
5. Space ground cover plants in accordance with indicated dimensions. Adjust spacing as necessary to evenly fill planting bed with indicated quantity of plants. Plant to within 12" of the trunks of trees and shrubs within planting bed and to within 6" of edge of bed.
6. Spread and arrange roots of bare-rooted plants in their natural position. Work-in planting mixture. Do not mat roots together. Cut all broken and frayed roots before installing planting mixture.
7. Water immediately after planting.

F. Mulching:

1. Mulch tree and shrub planting pits and shrub beds with required mulching material 3" deep immediately after planting. Thoroughly water mulched areas. After watering, rake mulch to provide a uniform finished surface.

G. Wrapping, Guying, Staking:

1. See planting details on plan set.

H. Pruning:

1. Prune branches of deciduous stock, after planting, to balance the loss of roots and preserve the natural character appropriate to the particular plant requirements. Remove or cut back broken, damaged and unsymmetrical growth of new wood.
2. Multiple leader plants: Preserve the leader which will best promote the symmetry of the plant. Cut branches flush with the branch collar. Make cut on an angle.
3. Prune evergreen trees only to remove broken or damaged branches.

3.04 MAINTENANCE:

A. Refer to Section 02970.

3.05 CLEANING:

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

END OF SECTION 02950

## SECTION 02970 - LANDSCAPE MAINTENANCE AND WARRANTY STANDARDS

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS:

- A. Attention is directed to Bidding and Contract Requirements, and to General and Supplemental Conditions, hereby made a part of this Section.

#### 1.02 DESCRIPTION OF WORK:

- A. The requirements of this section include a one year warranty period from date of acceptance of installation.
- B. Related Work Specified Elsewhere:
  - 1. Section 02921: Topsoil
  - 2. Section 02933: Seeding
  - 3. Section 02950: Trees, Shrubs and Ground Covers

#### 1.03 ACCEPTANCE OF INSTALLATION:

- A. At the completion of all landscape installation, or pre-approved portions thereof, the Landscape Contractor shall request in writing an inspection for acceptance of installation in which the Landscape Contractor, Landscape Architect and Owner's Representative shall be present. After this inspection a "Punch List" will be issued by the Landscape Architect and/or Owner's Representative. After completion of punch list items, the Landscape Architect, Contractor and Owner's Representative shall re-inspect the project and upon satisfactory completion of punch list items, issue a written statement of acceptance of installation and establish the beginning of the project warranty period.
- B. It is the responsibility of the Landscape Contractor to make the above written request for inspection of installation in a timely fashion. If there is plant material loss prior to the Landscape Contractor's written request for inspection of installation, the Landscape Contractor shall make all replacements of this dead material at no additional cost. These replacements are not considered to be the required one (1) replacement of dead plant material by the Landscape Contractor during the one (1) year project warranty period, as outlined below.
- C. Landscape work may be inspected for acceptance in parts agreeable to Owner's Representative and Landscape Architect provided work offered for inspection is complete, including maintenance as required.
- D. For work to be inspected for partial acceptance, supply a written statement requesting acceptance of this work completed to date.

#### 1.04 PROJECT WARRANTY:

- A. The project warranty period begins upon written acceptance of the project installation by Landscape Architect and Owner's Representative.
- B. The landscape contractor accepts responsibility for the irrigation system operation, watering schedule, watering amounts and monitoring system for duration of maintenance and warranty period.

- C. The Landscape Contractor shall guarantee trees, shrubs, ground cover bed and sodded areas through construction and for a period of one year after date of acceptance of installation against defects including death and unsatisfactory growth, except for defects resulting from neglect by owner, abuse or damage by others, or unusual phenomena or incidents which are beyond Landscape Contractor's control.
- D. The Landscape Contractor shall warranty plants due to overwatering or under watering by automatic irrigation system during maintenance and warranty period.

#### 1.05 MAINTENANCE

- A. To insure guarantee standards, the following maintenance procedures shall be executed during construction and for the full project warranty period.
- B. Maintenance of Trees:
  1. Landscape Contractor shall be responsible for only one (1) replacement of any plant materials after project acceptance date, see Section 1.03, that are dead or in the opinion of the Landscape Architect are in an unhealthy or unsightly condition, or having lost natural shape, resulting from die back, excessive pruning, excessive or deficient watering practices, or inadequate or improper maintenance as part of the guarantee. Prior to any replacements Landscape Contractor shall review individual plants in question with Landscape Architect and determine the reason for plant demise.
  2. Replacements must meet specifications i.e. quality, species of plant material and planting procedures to receive approval of replacement materials by Landscape Architect.
  3. Costs for replacements are assumed part of bid quotations and therefore will not result in an additional cost to Owner or Landscape Architect.
  4. Areas damaged as result of replacement operations are to be restored by Contractor at no cost to the Owner or Landscape Architect.
  5. The contractor shall be responsible for keeping guy wires taut, raise tree balls which settle, furnish and apply sprays as necessary to keep the plantings free of disease and insects until the end of the warranty period. All evergreens shall be watered thoroughly and wilt proofed in the fall to insure they do not go into the winter dry.
  6. Winter Evergreen Protection (Trees and Shrubs): Treated burlap (green) and 2' x 2' x 8' hardwood stakes @ 4'-0" O.C. Attach burlap to wood lath with roofing nails. Contractor shall erect, remove and deliver to owner. Contractor shall install winter protection the first winter, install December 1 and remove April 15. Install screen height as required. Spray evergreens with wiltproof prior to December 1 and again January 1, two coatings are required; apply per manufacturer's recommendations.
  7. The contractor shall be responsible for watering of all plantings throughout construction, maintenance and warranty periods.
  8. The contractor will be responsible for irrigation system operation, watering schedules, watering amounts and general monitoring of irrigation system throughout construction, maintenance and warranty period. Overwatering or lack of from irrigation system source is the responsibility of the landscape contractor.
  9. Remove and replace trees, shrubs, or other plants found to be dead or in unhealthy condition. Remove rejected plants and materials promptly. Make replacements during following normal planting schedule. Replace trees and shrubs which are in doubt, unless, in opinion of Owner's Representative and Landscape Architect it is advisable to extend warranty period for a full-growing season. Remove all stakes, guy wires, tree wrap paper, dead twigs and branches from tree and plant materials at the end of this warranty period. Keep planting beds free of weeds during guarantee period. See Trees, Plants and Ground Covers Section for suggested herbicides.

C. Maintenance of Seeded Lawn Areas:

1. The Contractor shall establish a dense lawn of permanent grasses, free from lumps and depressions or any bare spots, none of which is larger than one foot of area up to a maximum of 3% of the total seeded lawn area. Any part of the seeded lawn that fails to show a uniform growth and/or germination shall be reseeded until a dense cover is established.
2. Maintain seeded lawn areas, including watering, fertilizing, spot weeding, mowing, application of herbicides, fungicides, insecticides, and reseeding until a full, uniform stand of lawn is achieved.
3. If seeded in fall or if not considered acceptable at that time, continue maintenance the following spring until acceptable lawn is established.
4. The Contractor shall provide two cuttings of the lawn or more as necessary until the inspection and acceptance of installation by the Owner's Representative and Landscape Architect. When the lawn reaches 3 inches in height it shall be cut to 2 inches in height.
5. The Owner assumes cutting responsibilities following the acceptance of installation by the Owner's Representative and the Landscape Architect.
6. After acceptance of installation, and for the duration of the project warranty period the Landscape Contractor shall continue all other maintenance procedures including fertilizing and weeding, and other operations such as rolling, regrading, replanting, and applying herbicides, fungicides, insecticides as required to establish a smooth, acceptable lawn free of eroded or bare areas.
7. Repair, rework, and re-seed all areas that have washed out, and eroded, or do not substantially germinate.
8. See Section 1.05,B: Items 6 and 7.
9. At conclusion of project warranty period and after receiving written final acceptance by Owner's Representative and Landscape Architect, the Owner shall assume all seeded lawn maintenance responsibilities.

D. Maintenance of Sodded Lawn Area:

1. Maintain sodded lawn areas, including watering, fertilizing, spot weeding, mowing, application of herbicides, fungicides, insecticides, and resodding until a full, uniform stand of sod is knitted to topsoil.
2. Water sod thoroughly, as required to establish proper rooting.
3. Repair, rework and resod all areas that have washed out or are eroded. Replace undesirable or dead areas with new sod.
4. Provide a uniform stand of grass by watering, mowing, and maintaining lawn areas until acceptance of installation. Resod areas, with specified materials, which fail to provide a uniform stand of grass until all affected areas are accepted by Landscape Architect.
5. Mow lawn areas as soon as lawn top growth reaches a 3" height. Cut back to 2" height. Repeat mowing as required to maintain specified height. Not more than 40% of grass leaf shall be removed at any single mowing. Mowing shall consist of two cuttings.
6. Sodded areas will be acceptable provided all requirements, including maintenance, have been complied with, and a healthy, even colored viable lawn is established, free of weed, undesirable grass species, disease, and insects.
7. After acceptance of installation, and for the duration of the project warranty period the Landscape Contractor shall continue all maintenance procedures including fertilizing, weeding, rolling, regrading, resodding and applying herbicides, fungicides, insecticides as required to establish a smooth acceptable lawn, free of eroded or bare areas. The landscape contractor is not responsible for mowing after acceptance of installation.
8. See Section 1.05,B: Items 6 and 7.
9. At Conclusion of project warranty period and after receiving written final acceptance by Owner's Representative and Landscape Architect, the Owner shall assume all sodded lawn maintenance responsibilities.

1.06 FINAL ACCEPTANCE:

- A. At the conclusion of the project warranty period the Landscape Contractor shall request a project inspection for final acceptance in which the Landscape Contractor, Landscape Architect and Owner's Representative shall be present. After this inspection a "Punch List" will be issued by the Landscape Architect. Upon completion of all punch list items, the Landscape Architect and Owner's Representative shall reinspect the project and issue a written statement of final acceptance. Upon final acceptance the Owner assumes all maintenance responsibilities for the landscape of the project.

PART 2 AND 3 - PRODUCTS AND EXECUTION

Not Applicable.

END OF SECTION 02970