

23. Approve ranking list for PS-5146-03/BJC – Master Agreement for CEI Services for State Road 434 Access Management Project – (US 17-92 to SR 419) and award a Master Agreement to AB/WCG Joint Venture, Orlando (Not-to-Exceed \$575,000.00).

PS-5146-03/BJC will provide various professional services related to construction and engineering inspections for the construction of the SR 434 Access Management Project from US 17-92 to SR 419.

This project was publicly advertised and the County received eleven submittals (listed in alphabetical order):

- ABWCG Joint Venture, Orlando;
- A2 Group, Inc., Orlando;
- Carter & Burgess, Inc., Orlando;
- Dyer, Riddle, Mills & Precourt, Inc., Orlando;
- GAI Consultants, Orlando;
- HNTB Corporation, Orlando;
- H.W. Lochner, Inc., Orlando;
- Keith & Schnars, P.A., Altamonte Springs;
- PBS&J, Orlando;
- Reynolds, Smith and Hills CS, Inc., Plantation;
- URS Construction Services, Inc., Ft. Lauderdale.

The Evaluation Committee, which consisted of Brett Blackadar, P.E., Principal Engineer, Public Works; Antoine Khoury, P.E., Principal Engineer, Public Works; Steve Krug, P.E., Principal Engineer, Public Works; Jerry McCollum, P.E., County Engineer, Public Works; and Tom Radzai, Senior Engineer, Public Works evaluated the submittals and short-listed three firms.

The Evaluation Committee, less Mr. Khoury, interviewed the following three short-listed firms:

- ABWCG Joint Venture, Orlando;
- HNTB Corporation, Orlando;
- URS Construction Services, Inc., Ft. Lauderdale.

Consideration was given to the following criteria:

- Proposed Approach to performing the work;
- Similar Project Experience;
- Past Performance/Past Record;
- Experience of Firm/Individual.

The Evaluation Committee recommends that the Board approve the ranking below and authorize staff to negotiate in accordance with F.S. 287.055, the Consultants Competitive Negotiation Act (CCNA):

1. ABWCG Joint Venture, Orlando;
2. HNTB Corporation, Orlando;
3. URS Construction Services, Inc., Ft. Lauderdale.

Funding will be with federal money administered through FDOT. Public Works/ Engineering Division and Fiscal Services/Purchasing and Contracts Division recommend that the Board approve the ranking, authorize staff to negotiate and authorize the Chairman to execute a Master Agreement as prepared by the County Attorney's Office.

**B.C.C. - SEMINOLE COUNTY, FL
PS TABULATION SHEET**

ALL SUBMITTALS ACCEPTED BY SEMINOLE COUNTY ARE SUBJECT TO THE COUNTY'S TERMS AND CONDITIONS AND ANY AND ALL ADDITIONAL TERMS AND CONDITIONS SUBMITTED BY THE PROPOSERS ARE REJECTED AND SHALL HAVE NO FORCE AND EFFECT. PS DOCUMENTS FROM THE PROPOSERS LISTED HEREIN ARE THE ONLY SUBMITTALS RECEIVED TIMELY AS OF THE ABOVE OPENING DATE AND TIME. ALL OTHER PS DOCUMENTS SUBMITTED IN RESPONSE TO THIS SOLICITATION, IF ANY, ARE HEREBY REJECTED AS LATE.

PS NUMBER: PS-5146-03/AJP
 PS TITLE : CEI Services for SR 434 Access Management Project – (US 17-92 to SR 419)
 DATE: August 6, 2003. TIME: 2:00 P.M.

RESPONSE -1-	RESPONSE -2-	RESPONSE -3-	RESPONSE -4-	RESPONSE -5-
AB/WCG Joint Venture 8529 South Park Circle, Suite 250 Orlando, Florida 32819 (407) 226-7085 – Phone (407) 226-7086 – Fax David L. Wright, P.E.	A2 Group, Inc. 4303 Vineland Road, Suite F3 Orlando, Florida 32811 (407) 447-5610 – Phone (407) 447-5659 – Fax Alberto G. Ribas, P.E.	Carter & Burgess, Inc. 1000 Legion Place, Suite 1400 Orlando, Florida 32801 (407) 514-1400 – Phone (407) 514-1499 – Fax Frank Carlile, P.E.	Dyer, Riddle, Mills & Precourt, Inc. 1505 East Colonial Drive Orlando, Florida 32803 (407) 896-0594 – Phone (407) 896-4836 – Fax Lucius J. Cushman, Jr., P.E.	GAI Consultants 618 East South Street Orlando, Florida 32801 (407) 423-8398 – Phone (407) 843-1070 – Fax Donald E. Kennington
RESPONSE -6-	RESPONSE -7-	RESPONSE -8-	RESPONSE -9-	RESPONSE -10-
HNTB Corporation 1615 Edgewater Drive Orlando, Florida 32803 (407) 859-8380 – Phone (407) 317-9016 – Fax Adrian B. Share, P.E.	H.W. Lochner, Inc. 7041 Grand National Drive, Suite 230 Orlando, Florida 32819 (407) 354-0085 – Phone (407) 354-0320 – Fax Murray S. Yates, P.E.	Keith & Schnars, P.A. 385 CenterPointe Circle, Suite 1303 Altamonte Springs, Florida 32701 (407) 834-1616 – Phone (407) 834-8530 – Fax Mark J. Moshier, P.E.	PBS&J 482 South Keller Road Orlando, Florida 32810-6101 (407) 647-7275 – Phone (407) 838-1601 – Fax Kevin P. Callahan	Reynolds, Smith and Hills CS, Incorporated 300 South Pine Island Road, Suite 300 Plantation, Florida 33324 (954) 474-3005 – Phone (954) 474-3628 – Fax Dale A. Barnes
RESPONSE -11-				
URS Construction Services, Inc. Lakeshore Complex 5100 NW 33 rd Ave., Suite 155 Ft. Lauderdale, Florida 33309 (954) 739-1881 – Phone (954) 739-1789 – Fax Charlie Wegman, P.E.				

Tabulated by: Amy J. Pigott, Sr. Contracts Analyst – Posted 8/08/2003 (9:00 A.M.)
 Evaluation Committee Meeting: 08/27/2003 1:30 at County Services Building (Purchasing Conference Room)
 Short Listed Firms: AB/WCG Joint Venture , HNTB Corporation, URS Construction Services, Inc.
 Presentations Date: 09/22/2003, starting at 8:30am in Engineering.
 Recommendation: AB/WCG Joint Venture BCC 10/14/2003 (Posted: 09/23/2003)

EVALUATION FOR PS-5146-03/AJP – CEI Services for SR 434 Access Management Project – (US 17-92 to SR 419)

QUALIFICATION TEAM
CONSENSUS REPORT AND RECOMMENDATION

SUMMARY SCORES AND RANKINGS

<u>FIRMS</u>	<u>SCORE</u>	<u>RANKING</u>
AB/WCG	89.45	1
HNTB	85.90	2
URS Construction Services	85.80	3

The Evaluation Committee makes the following recommendation:

Awards to #1 Ranked Firm, AB/WCG.

Brett Blackadar

Steve Krug

Jerry McColton

Tom Radzai

DRAFT

CONSULTANT SERVICES AGREEMENT (PS-5146-03/AJP)
CONSTRUCTION ENGINEERING AND INSPECTION SERVICES FOR
S.R. 434 ACCESS MANAGEMENT PROJECT (U.S. HWY 17-92 TO S.R. 419)

THIS AGREEMENT is made and entered into this _____ day of _____, 20____, by and between ABI/WCG Joint Venture duly authorized to conduct business in the State of Florida, whose address is 8529 South Park Circle Suite 250, hereinafter called the "CONSULTANT" and ORL FL 32819 SEMINOLE COUNTY, a political subdivision of the State of Florida, whose address is Seminole County Services Building, 1101 East First Street, Sanford, Florida 32771, hereinafter called the "COUNTY".

W I T N E S S E T H:

WHEREAS, the COUNTY desires to retain the services of a competent and qualified consultant to provide construction engineering and inspection services for the S.R. 434 Access Management Project (U.S. HWY 17-92 to S.R. 419) in Seminole County; and

WHEREAS, the COUNTY has requested and received expressions of interest for the retention of services of consultants; and

WHEREAS, the CONSULTANT is competent and qualified to furnish consultant services to the COUNTY and desires to provide professional services according to the terms and conditions stated herein,

NOW, THEREFORE, in consideration of the mutual understandings and covenants set forth herein, the COUNTY and the CONSULTANT agree as follows:

SECTION 1. SERVICES. The COUNTY does hereby retain the CONSULTANT to furnish professional services and perform those tasks as further described in the Scope of Services attached hereto as Exhibit "A" and made a part hereof. ~~Required services shall be specifically enumerated, described and depicted in the Work Orders authorizing performance of the specific project, task or study.~~ This Agreement

~~standing alone does not authorize the performance of any work or require the COUNTY to place any orders for work.~~

SECTION 2. TERM. This Agreement shall take effect on the date of its execution by the COUNTY and shall run until thirty (30) days after final completion of construction on the S.R. 434 Access Management Project. ^{CC-1221-03/ASP} Expiration of the term of this Agreement shall have no effect upon Work Orders issued pursuant to this Agreement and prior to the expiration date. Obligations entered therein by both parties shall remain in effect until completion of the work authorized by the Work Order.

SECTION 3. AUTHORIZATION FOR SERVICES. Authorization for performance of professional services by the CONSULTANT under this Agreement shall be in the form of written Work Orders issued and executed by the COUNTY and signed by the CONSULTANT. A sample Work Order is attached hereto as Exhibit "B". Each Work Order shall describe the services required, state the dates for commencement and completion of work and establish the amount and method of payment. The Work Orders will be issued under and shall incorporate the terms of this Agreement. The COUNTY makes no covenant or promise as to the number of available projects nor that, the CONSULTANT will perform any project for the COUNTY during the life of this Agreement. The COUNTY reserves the right to contract with other parties for the services contemplated by this Agreement when it is determined by the COUNTY to be in the best interest of the COUNTY to do so.

SECTION 4. TIME FOR COMPLETION. The services to be rendered by the CONSULTANT shall be commenced, ~~as specified in such Work Orders as may be issued hereunder;~~ and shall be completed within the time specified therein. In the event the COUNTY determines that significant benefits would accrue from expediting an otherwise established time

schedule for completion of services under a given Work Order, that Work Order may include a negotiated schedule of incentives based on time savings.

SECTION 5. COMPENSATION. The COUNTY agrees to compensate the CONSULTANT for the professional services called for under this Agreement on either a "Fixed Fee" basis or on a "Time Basis Method". If a Work Order is issued under a "Time Basis Method," then CONSULTANT shall be compensated in accordance with the rate schedule attached as Exhibit "C". If a Work Order is issued for a "Fixed Fee Basis," then the applicable Work Order Fixed Fee amount shall include any and all reimbursable expenses. The total compensation paid to the CONSULTANT pursuant to this Agreement, including reimbursable expenses, shall not exceed the sum of \$575,000.00 DOLLARS (\$___).

SECTION 6. REIMBURSABLE EXPENSES. If a Work Order is issued on a "Time Basis Method," then reimbursable expenses are in addition to the hourly rates. Reimbursable expenses are subject to the applicable "Not-to-Exceed" or "Limitation of Funds" amount set forth in the Work Order. Reimbursable expenses may include actual expenditures made by the CONSULTANT, his employees or his professional associates in the interest of the Project for the expenses listed in the following paragraphs:

(a) Expenses of transportation, when traveling in connection with the Project, based on Sections 112.061(7) and (8), Florida Statutes, or their successor; long distance calls and telegrams; and fees paid for securing approval of authorities having jurisdiction over the Project.

(b) Expense of reproductions, postage and handling of drawings and specifications.

(c) If authorized in writing in advance by the COUNTY, the cost of other expenditures made by the CONSULTANT in the interest of the Project.

SECTION 7. PAYMENT AND BILLING.

(a) If the Scope of Services required to be performed by a Work Order is clearly defined, the Work Order shall be issued on a "Fixed Fee" basis. The CONSULTANT shall perform all work required by the Work Order but, in no event, shall the CONSULTANT be paid more than the negotiated Fixed Fee amount stated therein.

(b) If the Scope of Services is not clearly defined, the Work Order may be issued on a "Time Basis Method" and contain a Not-to Exceed amount. If a Not-to-Exceed amount is provided, the CONSULTANT shall perform all work required by the Work Order; but, in no event, shall the CONSULTANT be paid more than the Not-to-Exceed amount specified in the applicable Work Order.

(c) If the Scope of Services is not clearly defined, the Work Order may be issued on a "Time Basis Method" and contain a Limitation of Funds amount. The CONSULTANT is not authorized to exceed that amount without the prior written approval of the COUNTY. Said approval, if given by the COUNTY, shall indicate a new Limitation of Funds amount. The CONSULTANT shall advise the COUNTY whenever the CONSULTANT has incurred expenses on any Work Order that equals or exceeds eighty percent (80%) of the Limitation of Funds amount.

(d) For Work Orders issued on a "Fixed Fee Basis," the CONSULTANT may invoice the amount due based on the percentage of total Work Order services actually performed and completed; but, in no event, shall the invoice amount exceed a percentage of the Fixed Fee amount equal to a percentage of the total services actually completed. The COUNTY shall pay the CONSULTANT ninety percent (90%) of the approved amount on Work Orders issued on a "Fixed Fee Basis".

(e) For Work Orders issued on a "Time Basis Method" with a Not-to-Exceed amount, the CONSULTANT may invoice the amount due for actual

work hours performed but, in no event, shall the invoice amount exceed a percentage of the Not-to-Exceed amount equal to a percentage of the total services actually completed. The COUNTY shall pay the CONSULTANT ninety percent (90%) of the approved amount on Work Orders issued on a "Time Basis Method" with a Not-to-Exceed amount.

(f) Each Work Order issued on a "Fixed Fee Basis" or "Time Basis Method" with a Not-to-Exceed amount shall be treated separately for retainage purposes. If the COUNTY determines that work is substantially complete and the amount retained is considered to be in excess, the COUNTY may, at its sole and absolute discretion, release the retainage or any portion thereof.

(g) For Work Orders issued on a "Time Basis Method" with a Limitation of Funds amount, the CONSULTANT may invoice the amount due for services actually performed and completed. The COUNTY shall pay the CONSULTANT one hundred percent (100%) of the approved amount on Work Orders issued on a "Time Basis Method" with a Limitation of Funds amount.

(h) Payments shall be made by the COUNTY to the CONSULTANT when requested as work progresses for services furnished, but not more than once monthly. Each Work Order shall be invoiced separately. CONSULTANT shall render to COUNTY, at the close of each calendar month, an itemized invoice properly dated, describing any services rendered, the cost of the services, the name and address of the CONSULTANT, Work Order Number, Contract Number and all other information required by this Agreement.

The original invoice shall be sent to:

Director of County Finance
Seminole County Board of County Commissioners
Post Office Box 8080
Sanford, Florida 32772

A duplicate copy of the invoice shall be sent to:

Seminole County Engineering Department
520 West Lake Mary Boulevard, Suite 200
Sanford, Florida 32773

(i) Payment shall be made after review and approval by COUNTY within thirty (30) days of receipt of a proper invoice from the CONSULTANT.

SECTION 8. GENERAL TERMS OF PAYMENT AND BILLING.

(a) Upon satisfactory completion of work required hereunder and, upon acceptance of the work by the COUNTY, the CONSULTANT may invoice the COUNTY for the full amount of compensation provided for under the terms of this Agreement including any retainage and less any amount already paid by the COUNTY. The COUNTY shall pay the CONSULTANT within thirty (30) days of receipt of proper invoice.

(b) The COUNTY may perform or have performed an audit of the records of the CONSULTANT after final payment to support final payment hereunder. This audit would be performed at a time mutually agreeable to the CONSULTANT and the COUNTY subsequent to the close of the final fiscal period in which the last work is performed. Total compensation to the CONSULTANT may be determined subsequent to an audit as provided for in subsections (b) and (c) of this Section, and the total compensation so determined shall be used to calculate final payment to the CONSULTANT. Conduct of this audit shall not delay final payment as provided by subsection (a) of this Section.

(c) In addition to the above, if federal funds are used for any work under the Agreement, the Department of Housing and Urban Development, the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records, of the CONSULTANT which are directly pertinent to work performed under this Agreement for purposes of making audit, examination, excerpts and transcriptions.

(d) The CONSULTANT agrees to maintain all books, documents, papers, accounting records and other evidences pertaining to work performed under this Agreement in such a manner as will readily conform to the terms of this Agreement and to make such materials available at the CONSULTANT's office at all reasonable times during the Agreement period and for five (5) years from the date of final payment under the contract for audit or inspection as provided for in subsections (b) and (c) of this Section.

(e) In the event any audit or inspection conducted after final payment, but within the period provided in paragraph (d) of this Section reveals any overpayment by the COUNTY under the terms of the Agreement, the CONSULTANT shall refund such overpayment to the COUNTY within thirty (30) days of notice by the COUNTY.

SECTION 9. RESPONSIBILITIES OF THE CONSULTANT.

(a) The CONSULTANT shall be responsible for the professional quality, technical accuracy, competence, methodology, accuracy and the coordination of all of the following which are listed for illustration purposes and not as a limitation: documents, analysis, reports, data, plans, plats, maps, surveys, specifications, and any and all other services of whatever type or nature furnished by the CONSULTANT under this Agreement. The CONSULTANT shall, without additional compensation, correct or revise any errors or deficiencies in his plans, analysis, data, reports, designs, drawings, specifications, and any and all other services of whatever type or nature.

(b) Neither the COUNTY's review, approval or acceptance of, nor payment for, any of the services required shall be construed to operate as a waiver of any rights under this Agreement nor of any cause of action arising out of the performance of this Agreement and the CONSULTANT shall be and always remain liable to the COUNTY in accordance

with applicable law for any and all damages to the COUNTY caused by the CONSULTANT's negligent or wrongful performance of any of the services furnished under this Agreement.

SECTION 10. OWNERSHIP OF DOCUMENTS. All deliverable analysis, reference data, survey data, plans and reports or any other form of written instrument or document that may result from the CONSULTANT's services or have been created during the course of the CONSULTANT's performance under this Agreement shall become the property of the COUNTY after final payment is made to the CONSULTANT.

SECTION 11. TERMINATION.

(a) The COUNTY may, by written notice to the CONSULTANT terminate this Agreement or any Work Order issued hereunder, in whole or in part, at any time, either for the COUNTY's convenience or because of the failure of the CONSULTANT to fulfill its Agreement obligations. Upon receipt of such notice, the CONSULTANT shall:

(1) immediately discontinue all services affected unless the notice directs otherwise, and

(2) deliver to the COUNTY all data, drawings, specifications, reports, estimates, summaries, and any and all such other information and materials of whatever type or nature as may have been accumulated by the CONSULTANT in performing this Agreement, whether completed or in process.

(b) If the termination is for the convenience of the COUNTY, the CONSULTANT shall be paid compensation for services performed to the date of termination. If this Agreement calls for the payment based on a Fixed Fee amount, the CONSULTANT shall be paid no more than a percentage of the Fixed Fee amount equivalent to the percentage of the completion of work, as determined solely and conclusively by the COUNTY, contemplated by this Agreement.

(c) If the termination is due to the failure of the CONSULTANT to fulfill its Agreement obligations, the COUNTY may take over the work and prosecute the same to completion by other Agreements or otherwise. In such case, the CONSULTANT shall be liable to the COUNTY for all reasonable additional costs occasioned to the COUNTY thereby. The CONSULTANT shall not be liable for such additional costs if the failure to perform the Agreement arises without any fault or negligence of the CONSULTANT; provided, however, that the CONSULTANT shall be responsible and liable for the actions of its subcontractors, agents, employees and persons and entities of a similar type or nature. Such causes may include acts of God or of the public enemy, acts of the COUNTY in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather; but, in every case, the failure to perform must be beyond the control and without any fault or negligence of the CONSULTANT.

(d) If, after notice of termination for failure to fulfill its Agreement obligations, it is determined that the CONSULTANT had not so failed, the termination shall be conclusively deemed to have been effected for the convenience of the COUNTY. In such event, adjustment in the Agreement price shall be made as provided in subsection (b) of this Section.

(e) The rights and remedies of the COUNTY provided for in this Section are in addition and supplemental to any and all other rights and remedies provided by law or under this Agreement.

SECTION 12. AGREEMENT AND WORK ORDER IN CONFLICT. Whenever the terms of this Agreement conflict with any Work Order issued pursuant to it, the Agreement shall prevail.

SECTION 13. EQUAL OPPORTUNITY EMPLOYMENT. The CONSULTANT agrees that it will not discriminate against any employee or applicant for

employment for work under this Agreement because of race, color, religion, sex, age, disability, or national origin and will take steps to ensure that applicants are employed, and employees are treated during employment, without regard to race, color, religion, sex, age, disability, or national origin. This provision shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

SECTION 14. NO CONTINGENT FEES. The CONSULTANT warrants that it has not employed or retained any company or person, other than a bonafide employee working solely for the CONSULTANT to solicit or secure this Agreement and that it has not paid or agreed to pay any person, company, corporation, individual or firm, other than a bonafide employee working solely for the CONSULTANT, any fee, commission, percentage, gift, or other consideration contingent upon or resulting from award or making of this Agreement. For the breach or violation of this provision, the COUNTY shall have the right to terminate the Agreement at its sole discretion, without liability and to deduct from the Agreement price, or otherwise recover, the full amount of such fee, commission, percentage, gift, or consideration.

SECTION 15. CONFLICT OF INTEREST.

(a) The CONSULTANT agrees that it will not contract for or accept employment for the performance of any work or service with any individual, business, corporation or government unit that would create a conflict of interest in the performance of its obligations pursuant to this Agreement with the COUNTY.

(b) The CONSULTANT agrees that it will neither take any action nor engage in any conduct that would cause any COUNTY employee to

violate the provisions of Chapter 112, Florida Statutes, relating to ethics in government.

(c) In the event that CONSULTANT causes or in any way promotes or encourages a COUNTY officer, employee, or agent to violate Chapter 112, Florida Statutes, the COUNTY shall have the right to terminate this Agreement.

SECTION 16. ASSIGNMENT. This Agreement, or any interest herein, shall not be assigned, transferred, or otherwise encumbered, under any circumstances, by the parties hereto without prior written consent of the other party and in such cases only by a document of equal dignity herewith.

SECTION 17. SUBCONTRACTORS. In the event that the CONSULTANT, during the course of the work under this Agreement, requires the services of any subcontractors or other professional associates in connection with services covered by this Agreement, the CONSULTANT must first secure the prior express written approval of the COUNTY. If subcontractors or other professional associates are required in connection with the services covered by this Agreement, CONSULTANT shall remain fully responsible for the services of subcontractors or other professional associates.

SECTION 18. INDEMNIFICATION OF COUNTY. The CONSULTANT agrees to hold harmless, replace, and indemnify the COUNTY, its commissioners, officers, employees, and agents against any and all claim, losses, damages or lawsuits for damages, arising from, allegedly arising from, or related to the provision of services hereunder by the CONSULTANT, whether caused by the CONSULTANT or otherwise. This hold harmless, release and indemnification shall include any claim based on negligence, action or inaction of the parties.

SECTION 19. INSURANCE.

(a) GENERAL. The CONSULTANT shall at the CONSULTANT's own cost, procure the insurance required under this Section.

(1) The CONSULTANT shall furnish the COUNTY with a Certificate of Insurance signed by an authorized representative of the insurer evidencing the insurance required by this Section (Professional Liability, Workers' Compensation/Employer's Liability and Commercial General Liability). The COUNTY, its officials, officers, and employees shall be named additional insured under the Commercial General Liability policy. The Certificate of Insurance shall provide that the COUNTY shall be given not less than thirty (30) days written notice prior to the cancellation or restriction of coverage. Until such time as the insurance is no longer required to be maintained by the CONSULTANT, the CONSULTANT shall provide the COUNTY with a renewal or replacement Certificate of Insurance not less than thirty (30) days before expiration or replacement of the insurance for which a previous certificate has been provided.

(2) The Certificate shall contain a statement that it is being provided in accordance with the Agreement and that the insurance is in full compliance with the requirements of the Agreement. **THE CERTIFICATE SHALL HAVE THIS AGREEMENT NUMBER CLEARLY MARKED ON ITS FACE.** In lieu of the statement on the Certificate, the CONSULTANT shall, at the option of the COUNTY submit a sworn, notarized statement from an authorized representative of the insurer that the Certificate is being provided in accordance with the Agreement and that the insurance is in full compliance with the requirements of the Agreement.

(3) In addition to providing the Certificate of Insurance, if required by the COUNTY, the CONSULTANT shall, within thirty (30) days after receipt of the request, provide the COUNTY with a certified copy

of each of the policies of insurance providing the coverage required by this Section.

(4) Neither approval by the COUNTY nor failure to disapprove the insurance furnished by a CONSULTANT shall relieve the CONSULTANT of the CONSULTANT's full responsibility for performance of any obligation including CONSULTANT indemnification of COUNTY under this Agreement.

(b) INSURANCE COMPANY REQUIREMENTS. Insurance companies providing the insurance under this Agreement must meet the following requirements:

(1) Companies issuing policies other than Workers' Compensation, must be authorized to conduct business in the State of Florida and prove same by maintaining Certificates of Authority issued to the companies by the Department of Insurance of the State of Florida. Policies for Workers' Compensation may be issued by companies authorized as a group self-insurer by Section 440.57, Florida Statutes.

(2) In addition, such companies other than those authorized by Section 440.57, Florida Statutes, shall have and maintain a Best's Rating of "A" or better and a Financial Size Category of "VII" or better according to A.M. Best Company.

(3) If, during the period which an insurance company is providing the insurance coverage required by this Agreement, an insurance company shall: 1) lose its Certificate of Authority, 2) no longer comply with Section 440.57, Florida Statutes, or 3) fail to maintain the requisite Best's Rating and Financial Size Category, the CONSULTANT shall, as soon as the CONSULTANT has knowledge of any such circumstance, immediately notify the COUNTY and immediately replace the insurance coverage provided by the insurance company with a different insurance company meeting the requirements of this Agreement. Until such time as

the CONSULTANT has replaced the unacceptable insurer with an insurer acceptable to the COUNTY the CONSULTANT shall be deemed to be in default of this Agreement.

(c) SPECIFICATIONS. Without limiting any of the other obligations or liability of the CONSULTANT, the CONSULTANT shall, at the CONSULTANT's sole expense, procure, maintain and keep in force amounts and types of insurance conforming to the minimum requirements set forth in this subsection. Except as otherwise specified in the Agreement, the insurance shall become effective prior to the commencement of work by the CONSULTANT and shall be maintained in force until the Agreement completion date. The amounts and types of insurance shall conform to the following minimum requirements.

(1) Workers' Compensation/Employer's Liability.

(A) The CONSULTANT's insurance shall cover the CONSULTANT for liability which would be covered by the latest edition of the standard Workers' Compensation Policy, as filed for use in Florida by the National Council on Compensation Insurance, without restrictive endorsements. The CONSULTANT will also be responsible for procuring proper proof of coverage from its subcontractors of every tier for liability which is a result of a Workers' Compensation injury to the subcontractor's employees. The minimum required limits to be provided by both the CONSULTANT and its subcontractors is outlined in subsection (c) below. In addition to coverage for the Florida Workers' Compensation Act, where appropriate, coverage is to be included for the United States Longshoremen and Harbor Workers' Compensation Act, Federal Employers' Liability Act and any other applicable federal or state law.

(B) Subject to the restrictions of coverage found in the standard Workers' Compensation Policy, there shall be no maximum limit on the amount of coverage for liability imposed by the Florida

Workers' Compensation Act, the United States Longshoremen's and Harbor Workers' Compensation Act, or any other coverage customarily insured under Part One of the standard Workers' Compensation Policy.

(C) The minimum amount of coverage under Part Two of the standard Workers' Compensation Policy shall be:

	\$ 500,000.00	(Each Accident)
	\$1,000,000.00	(Disease-Policy Limit)
500,000	\$ 500,000.00	(Disease-Each Employee)

(2) Commercial General Liability.

(A) The CONSULTANT's insurance shall cover the CONSULTANT for those sources of liability which would be covered by the latest edition of the standard Commercial General Liability Coverage Form (ISO Form CG 00 01), as filed for use in the State of Florida by the Insurance Services Office, without the attachment of restrictive endorsements other than the elimination of Coverage C, Medical Payment and the elimination of coverage for Fire Damage Legal Liability.

(B) The minimum limits to be maintained by the CONSULTANT (inclusive of any amounts provided by an Umbrella or Excess policy) shall be as follows:

	<u>LIMITS</u>
General Aggregate	\$Three (3) Times the Each Occurrence Limit
Personal & Advertising Injury Limit	\$1,000,000.00
Each Occurrence Limit	\$1,000,000.00

(3) Professional Liability Insurance. The CONSULTANT shall carry limits of not less than ONE MILLION AND NO/100 DOLLARS (\$1,000,000.00).

(d) COVERAGE. The insurance provided by CONSULTANT pursuant to this Agreement shall apply on a primary basis and any other insurance or self-insurance maintained by the COUNTY or the COUNTY's officials,

officers, or employees shall be excess of and not contributing with the insurance provided by or on behalf of the CONSULTANT.

(e) OCCURRENCE BASIS. The Workers' Compensation Policy and the Commercial General Liability required by this Agreement shall be provided on an occurrence rather than a claims-made basis. The Professional Liability insurance policy must either be on an occurrence basis, or, if a claims-made basis, the coverage must respond to all claims reported within three (3) years following the period for which coverage is required and which would have been covered had the coverage been on an occurrence basis.

(f) OBLIGATIONS. Compliance with the foregoing insurance requirements shall not relieve the CONSULTANT, its employees or agents of liability from any obligation under a Section or any other portions of this Agreement.

SECTION 20. ALTERNATIVE DISPUTE RESOLUTION (ADR).

(a) In the event of a dispute related to any performance or payment obligation arising under this Agreement, the parties agree to exhaust COUNTY ADR procedures prior to filing suit or otherwise pursuing legal remedies. COUNTY ADR procedures for proper invoice and payment disputes are set forth in Section 55.1, "Prompt Payment Procedures," Seminole County Administrative Code. Contract claims include all controversies, except disputes addressed by the "Prompt Payment Procedures," arising under this Agreement with ADR procedures set forth in Section 220.102, "Contract Claims," Seminole County Code.

(b) CONSULTANT agrees that it will file no suit or otherwise pursue legal remedies based on facts or evidentiary materials that were not presented for consideration in the COUNTY ADR procedures set forth in subsection (a) above of which the CONSULTANT had knowledge and failed to present during the COUNTY ADR procedures.

(c) In the event that COUNTY ADR procedures are exhausted and a suit is filed or legal remedies are otherwise pursued, the parties shall exercise best efforts to resolve disputes through voluntary mediation. Mediator selection and the procedures to be employed in voluntary mediation shall be mutually acceptable to the parties. Costs of voluntary mediation shall be shared equally among the parties participating in the mediation.

SECTION 21. REPRESENTATIVES OF THE COUNTY AND THE CONSULTANT.

(a) It is recognized that questions in the day-to-day conduct of performance pursuant to this Agreement will arise. The COUNTY, upon request by the CONSULTANT, shall designate in writing and shall advise the CONSULTANT in writing of one (1) or more of its employees to whom all communications pertaining to the day-to-day conduct of this Agreement shall be addressed. The designated representative shall have the authority to transmit instructions, receive information and interpret and define the COUNTY's policy and decisions pertinent to the work covered by this Agreement.

(b) The CONSULTANT shall, at all times during the normal work week, designate or appoint one or more representatives of the CONSULTANT who are authorized to act in behalf of and bind the CONSULTANT regarding all matters involving the conduct of the performance pursuant to this Agreement and shall keep the COUNTY continually and effectively advised of such designation.

SECTION 22. ALL PRIOR AGREEMENTS SUPERSEDED. This document incorporates and includes all prior negotiations, correspondence, conversations, agreements or understandings applicable to the matters contained herein and the parties agree that there are no commitments, agreements or understandings concerning the subject matter of this Agreement that are not contained or referred to in this document.

Accordingly, it is agreed that no deviation from the terms hereof shall be predicated upon any prior representations or agreements, whether oral or written.

SECTION 23. MODIFICATIONS, AMENDMENTS OR ALTERATIONS. No modification, amendment or alteration in the terms or conditions contained herein shall be effective unless contained in a written document executed with the same formality and of equal dignity herewith.

SECTION 24. INDEPENDENT CONTRACTOR. It is agreed that nothing herein contained is intended or should be construed as in any manner creating or establishing a relationship of co-partners between the parties, or as constituting the CONSULTANT (including its officers, employees, and agents) the agent, representative, or employee of the COUNTY for any purpose, or in any manner, whatsoever. The CONSULTANT is to be and shall remain forever an independent contractor with respect to all services performed under this Agreement.

SECTION 25. EMPLOYEE STATUS. Persons employed by the CONSULTANT in the performance of services and functions pursuant to this Agreement shall have no claim to pension, workers' compensation, unemployment compensation, civil service or other employee rights or privileges granted to the COUNTY's officers and employees either by operation of law or by the COUNTY.

SECTION 26. SERVICES NOT PROVIDED FOR. No claim for services furnished by the CONSULTANT not specifically provided for herein shall be honored by the COUNTY.

SECTION 27. PUBLIC RECORDS LAW. CONSULTANT acknowledges COUNTY's obligations under Article I, Section 24, Florida Constitution and Chapter 119, Florida Statutes, to release public records to members of the public upon request. CONSULTANT acknowledges that COUNTY is required to comply with Article I, Section 24, Florida Constitution and Chapter

119, Florida Statutes, in the handling of the materials created under this Agreement and that said statute controls over the terms of this Agreement.

SECTION 28. COMPLIANCE WITH LAWS AND REGULATIONS. In providing all services pursuant to this Agreement, the CONSULTANT shall abide by all statutes, ordinances, rules, and regulations pertaining to, or regulating the provisions of, such services, including those now in effect and hereafter adopted. Any violation of said statutes, ordinances, rules, or regulations shall constitute a material breach of this Agreement, and shall entitle the COUNTY to terminate this Agreement immediately upon delivery of written notice of termination to the CONSULTANT.

SECTION 29. NOTICES. Whenever either party desires to give notice unto the other, it must be given by written notice, sent by registered or certified United States mail, with return receipt requested, addressed to the party for whom it is intended at the place last specified and the place for giving of notice shall remain such until it shall have been changed by written notice in compliance with the provisions of this Section. For the present, the parties designate the following as the respective places for giving of notice, to-wit:

FOR COUNTY:

Seminole County Engineering Department
520 W. Lake Mary Blvd, Ste 200
Lake Mary, FL 32773

FOR CONSULTANT:

Same as front

SECTION 30. RIGHTS AT LAW RETAINED. The rights and remedies of the COUNTY, provided for under this Agreement, are in addition and supplemental to any other rights and remedies provided by law.

IN WITNESS WHEREOF, the parties hereto have made and executed this Agreement on the date below written for execution by the COUNTY.

ATTEST:

AB/WC Joint Venture
By: David Wright
President

, Secretary

(CORPORATE SEAL)

Date: _____

ATTEST:

BOARD OF COUNTY COMMISSIONERS
SEMINOLE COUNTY, FLORIDA

MARYANNE MORSE
Clerk to the Board of
County Commissioners of
Seminole County, Florida.

By: _____
DARYL G. MCLAIN, Chairman

Date: _____

For use and reliance
of Seminole County only.
Approved as to form and
legal sufficiency.

As authorized for execution by
the Board of County Commissioners
at their _____, 20____
regular meeting.

County Attorney

AC/lpk
7/7/03 7/8/03
ps-5146

- 3 Attachments:
Exhibit "A"- Scope of Services
Exhibit "B"- Sample Work Order
Exhibit "C"- Rate Schedule

**Public Works Minor Projects
Construction and Engineering Inspection
General Scope of Services**

GENERAL

It shall be the responsibility of the CONSULTANT to provide services as necessary to administer the construction contract in the manner so as to determine that the project is constructed in reasonable conformity with the plans, specifications and contract provisions.

SURVEY CONTROL

The CONSULTANT shall (1) make and record such measurements as are necessary to calculate and document quantities for items; and (2) perform incidental engineering surveys as may be necessary to carry out the services covered by the Agreement.

TESTING

The CONSULTANT shall coordinate and direct the services of the COUNTY's testing consultant as necessary during the construction of the project. The CONSULTANT shall not be responsible for payment of the testing consultant's fees.

CONSTRUCTION ENGINEERING SERVICES

The CONSULTANT shall perform management engineering services necessary to: (1) assure that proper coordination of the activities of all parties involved will accomplish a complete project; (2) maintain organized, complete, accurate records of all activities and events relating to the project; (3) provide interpretations of the plans, specifications and contract provisions of a minor nature; (4) make recommendations to the COUNTY to resolve disputes which arise in relation to the construction contract; and (5) maintain an adequate level of surveillance of the Contractor's activities. Construction engineering services for this project shall include, but are not necessarily limited to, the following:

The CONSULTANT shall provide a resident project engineer and the requisite inspection staff to observe the Contractor's on-site construction operations as required or necessary to determine that quality of workmanship and materials is such that the project will be completed in reasonable conformity with the plans, specifications, and other contract provisions. The project site staff shall be under the direction of a registered professional engineer.

The CONSULTANT shall maintain records of all significant activities and events relating to the project and estimates of all work completed by the Contractor. The CONSULTANT shall immediately report to the COUNTY apparent significant changes in quantity, time or cost as they are noted.

The CONSULTANT shall maintain a Project Control Schedule for the work. The CONSULTANT shall, on a regular basis, report the status to the COUNTY on all major items of work requested of the Construction Contractor reflected on the Project Control Schedule.

The CONSULTANT shall review the Construction Contractor's schedule in detail and submit a report to the COUNTY as well as meet with and discuss with the Construction Contractor during the schedule review and approval process, and any updates thereto. Any subsequent Construction Contractor requests for major activity or construction contract time extensions shall be reviewed by and commented on by the CONSULTANT. Project Control Schedule runs to review the results of Contractor request and/or CONSULTANT recommended alternatives shall be performed by the CONSULTANT, as required.

The CONSULTANT shall maintain a log of materials entering into the work and utilized in the work with proper indication of the basis of acceptance of each shipment of material.

The CONSULTANT shall maintain records of all sampling and testing accomplished under the Agreement and analyze such records required to ascertain acceptability of material and completed work items.

The CONSULTANT shall meet with the Construction Contractor on no less than a weekly basis (depending upon actual level of activity and/or progress) for project coordination and problem resolution.

The CONSULTANT shall record minutes of each meeting and forward a copy to the Contractor and to the COUNTY with the engineer's summary weekly report. Included in the report shall be noted activities accomplished, production achieved and shall list and describe those scheduled activities which were not accomplished, and what activities/events were planned for the next week. The CONSULTANT shall list separately any quality control problems or impediments to the work that would normally be noted in the engineer's weekly summary report.

Once each month, the CONSULTANT shall prepare a tabulation of the quantity of each pay item satisfactorily completed to date. Quantities shall be based on daily records or calculations. Calculations shall be retained. The tabulation will be used for preparation of the monthly progress Estimate. The CONSULTANT shall submit the completed tabulation to the COUNTY.

Shop drawings and other submittals will be reviewed and approved by the CONSULTANT for conformance to the intent of the design concept of the project plans and specifications. Shop drawings/sample submittals and approvals shall be tracked by the CONSULTANT. Tracking shall include, but not be limited to, maintaining cognizance of the status of each submittal as it progresses through the review and approval process and procedures. The CONSULTANT shall actively encourage all reviewers to accomplish reviews promptly.

The CONSULTANT shall provide to the Contractor, interpretations of the plans, specifications and contract provisions. The CONSULTANT shall consult with the COUNTY when interpretation involves complex or otherwise significant issues or may have an impact on the cost of performing the Work. When warranted by the COUNTY, the

COUNTY shall request an interpretation from the Design Consultant prior to any major changes of the plans specifications and contact revisions being clarified to the Contractor by the CEI Consultant. The COUNTY shall coordinate all requests for involvement of the Design Consultant.

The CONSULTANT shall analyze any and all problems that arise on the project and proposals submitted by the Contractor and shall prepare and submit a recommendation to the COUNTY.

The CONSULTANT shall analyze changes to the plans, specifications or contract provisions and extra work which appear to be necessary to carry out the intent of the contract when it is determined that a change or extra work is necessary and such work is clearly within the scope of the original contract. The CONSULTANT shall recommend such changes to the COUNTY for approval/disapproval.

When it is determined that a modification to the original contract for the project is required due to necessary change in the character of the Work, the CONSULTANT shall negotiate prices with the Contractor and prepare and submit for approval/disapproval by the COUNTY a Supplemental Agreement or change order.

In the event that the Contractor for a project submits a claim for additional compensation, the CONSULTANT shall analyze the submittal and prepare a recommendation to the COUNTY covering and analyzing the validity and reasonableness of the charges and shall conduct negotiations leading to a recommendation for settlement of the claim.

In the event that the Contractor submits a request for extension of the allowable contract time, the CONSULTANT shall analyze the request and prepare a recommendation to the COUNTY covering the accuracy of statement and the actual effect of the delay on the completion of the controlling work items and the costs to the COUNTY.

The CONSULTANT shall prepare and submit to the COUNTY for further processing a final estimate and two (2) sets of record plans for the construction contract. The record plans shall be provided by the Contractor and reviewed by the CONSULTANT for accuracy and completeness.

The CONSULTANT shall monitor the construction contract to the extent necessary to observe construction activities in order to verify general compliance with the requirements of permits. The COUNTY will provide the CONSULTANT with a copy of each permit within the project limits. Upon identification of a prospective changed condition or construction contract change, the extent of change shall be analyzed by the CONSULTANT and in order of magnitude estimate of cost and time of change, if any, will be prepared by the CONSULTANT.

The CONSULTANT shall negotiate all changes with the Contractor using the CONSULTANT – prepared estimate as a basis. The CONSULTANT shall submit the results to the COUNTY within two (2) weeks of start of negotiations or report the major

differences to the COUNTY, if agreement is not reached. The CONSULTANT shall prepare supplement and change order documents and track the status of each one until executed.

PERSONNEL

The CONSULTANT shall provide an agreed upon number of qualified personnel to effectively carry out its responsibilities under this Agreement. The CONSULTANT shall utilize only competent personnel who are qualified by experience and education.

STAFFING

The CONSULTANT shall maintain an appropriate staff after completion of construction to complete the final Estimate and Record Plans. No personnel other than those designated herewith, shall be assigned to the project by the CONSULTANT unless authorized by the COUNTY.

Construction engineering and inspection forces shall be required to be retained by or under contract to the CONSULTANT at all times while the Contractor is working on the construction contract. If the construction contract is suspended, the CONSULTANT'S forces shall be adjusted, to correspond with the type of suspension; provided, however, that no member of the CONSULTANT'S forces shall be deemed to be a COUNTY employee.

PHOTOGRAPHS

The CONSULTANT shall take and submit two (2) prints of each progress photograph taken each month. Views and timing of photographs shall be to show maximum progress. Photographs shall be clean, sharp and clearly show details. Photographs shall be submitted in sets with each photograph numbered in sequence beginning with the numeral one (1). Photographs shall be enclosed in a clear plastic protector punched to fit a standard 8 ½-inch by 11-inch three-ring binder.

OTHER SERVICES

The CONSULTANT shall upon written authorization by the COUNTY, perform any additional services not otherwise identified in this Agreement as may be required by the COUNTY in connection with the project. The following items are not included as part of this Agreement, but may be required of the CONSULTANT by the COUNTY to supplement the CONSULTANT'S services under this Agreement:

- (1) The CONSULTANT shall, upon review, approval and written authorization by the COUNTY, make such changes and revisions to the plans and specifications as may be required in order to complete the construction activities.
- (2) The CONSULTANT shall, upon written request by the COUNTY, assist the COUNTY in preparing for arbitration hearings, or litigation that occurs during the CONSULTANT'S contract time in connection with the project covered by the Agreement.

- (3) The CONSULTANT shall, upon written request by the COUNTY, provide qualified engineers and/or engineering witnesses, provide exhibits and otherwise assist the COUNTY in any litigation or hearings in connection with the construction contract(s).
- (4) The CONSULTANT shall, upon written request by the COUNTY, provide overall program project control schedules for the purposes of assisting the COUNTY in overall planning and scheduling of construction projects.
- (5) The CONSULTANT shall, upon written request by the COUNTY, provide project cost and cash flow analysis services to assist the COUNTY with overall program financial management of the COUNTY'S proposed road construction/improvement program.
- (6) The COUNTY agrees to compensate the CONSULTANT for authorized additional services not included in this Agreement as a supplement to the basic fee for CE&I services. The amount of such fee and the specific scope of services will be negotiated prior to the CONSULTANT providing such additional services.

Modified from major projects by AIK/Inwood Consultant Engineers
2/28/2000

TECHNICAL SPECIAL PROVISIONS

FOR

Pavement Texturing and Coloring

Approved By: _____

Date: _____

Pages 1 *through* 3

PAVEMENT TEXTURING AND COLORING

The following new Section is inserted after Section 525:

SECTION 526

PAVEMENT TEXTURING AND COLORING

526-1 Description.

Furnish and install a colored and textured surface on asphalt in conformity with the lines, grades, dimensions, notes shown in the plans and the manufacturer's recommendations.

526-2 Materials.

General: Materials shall consist of a blend of acrylic resins and aggregates, dry hardener, sealer, and colorant. The resin and hardener shall be acrylic polymer and blends containing aggregates and pigments. The sealer shall be an acrylic polymer, clear sealer designed for use with the resin and hardener. The colorant shall be UV stable pigment blend, designed for use to work with the resin and hardener.

Performance Properties: The resin, hardener and sealer shall be combined to form the traffic formula. The traffic formula shall provide the following performance properties:

TABLE 1

Characteristics	Test Spec.	Minimum Criteria
Tensile Strength (psi)	ASTM D-412	greater than 650 psi [4,482 kPA]
Flexibility, Mandrel (high)	ASTM D-1737	pass 1" @ 70 ° F [21 ° C]
Flexibility, Mandrel (low)	ASTM D-1737	pass 2" @ 0° F [-18 ° C]
Dry Time (to recoat)	ASTM D-711	20 min. to 4 hrs.
75 ° F [24 ° C] /30%RH	N/A	80% strength/6-8 hrs.
Taber Abrasion (H-10)	ASTM D-4060	<.18 g / 1000 cycles
Adhesion (PLI) to an asphalt substrate.	ASTM D 4640	Cohesive failure of Asphalt Prior to adhesive failure.
QUVE	ASTM G-53	300 hrs. – 2.35 CIE units
Hydrophobicity (3 days)	ASTM D-570	<12% wt. gain
Shore Hardness	ASTM D-570	80 D
Temp. Limits for service	Dry, cured	-30 to 160 ° F [-34 to 71 ° C]
Surface Build	N/A	20 – 25 mils (2 coats)
Coverage Rate – Traffic Formula	N/A	180 sq. ft. [18 m ²] per box (2 coats)
Coverage Rate – Sealer	N/A	2000 sq. ft [186 m ²] per box

526-3 Construction Method.

- 526-3.1 Once the asphalt has reached the required density and 30 day curing time, position a series of reusable templates on the asphalt surface with the desired orientation. Reheat the asphalt, using infra red heater. In accordance with the manufacturer's recommendations, set the templates in place using a plate compactor and fully embed them a minimum of ¼" [7mm].

The pattern surface is ready to be coated as soon as it has cooled below 100 ° F [38 ° C]. Prior to cooling, clean the asphalt as necessary. A light misting of water must be applied to the asphalt surface prior to coating. Apply a minimum of three coats and seal in accordance with the manufacturer's recommendations. The materials shall not be applied in temperatures below 50 ° F [10 ° C], or when precipitation can be expected within 8 hours. Coats and sealer shall be spray applied and broomed, using broom or brushes to cut in small areas where required.

526-4 Method of Measurement.

The quantity to be paid will be the area in square meters of Pavement Texturing, measured in place, completed and accepted. Measurement will be as specified in 9-1-3.1. No deductions will be made for the area(s) occupied by manholes, inlets, drainage structures or other public utility appurtenance within the Pavement Texturing area.

526-5 Basis of Payment.

Price and payment will be full compensation for all work specified the Section, the quantity, determined as provided above, will be paid for at the contract unit price per square meter for Pavement Texturing.

Payment shall be made under:

Item No. 526-71 - Pavement Texturing – per square yard

S.R. 434 Streetscape

Landscape and Irrigation Specifications

May, 2003

PART I - GENERAL

- 1.01 SCOPE OF WORK: Provide all labor, materials, equipment and incidentals required to prepare planting beds and install landscape planting in accordance with the drawings and as specified.
- 1.02 WORK SPECIFIED ELSEWHERE: The requirements of this section apply to landscape work specified in the following sections:
- A. Section 02750 - Landscape Irrigation System
 - B. Section 02822 - Sodding
- 1.03 GENERAL REQUIREMENTS:
- A. Finish Grade: The Earthwork Contractor will grade the site to a finished grade for planting areas and lawns to +/- .1 of foot. The Landscape Contractor will do the fine grading and amend the soil as required by the specifications.
 - B. Furnish manufacturer's certificate of compliance as specified and required.
 - C. General: Comply with applicable Federal, State, County and local codes, ordinances and regulations governing landscape materials and work.
 - D. The work shall be coordinated with other trades to prevent conflicts. Coordinate the planting with the irrigation work to assure availability of water and proper location of irrigation equipment and plant materials.
 - E. All planting shall be performed by personnel familiar with planting procedures and under the supervision of a qualified planting foreman.
 - F. Prior to the preparation of planting areas and plant pits, ascertain the location of all electrical cables, all conduits, all utility lines, oil tanks and supply lines, so that proper precautions may be taken not to disturb or damage any sub-surface improvements. Properly maintain and protect existing utilities.
 - G. Prior to placing planting mix and backfill, or commencing with planting of groundcover or shrubs, rototill any or all areas that have been mechanically compacted 90% to 95% for architectural construction purposes.
- 1.04 APPLICABLE DOCUMENTS:
- A. Plants:
 - 1. Nomenclature: Shall conform to the names given in "Standardized Plant Names", 1942 Editions, prepared by the American Joint Committee on Horticultural Nomenclature or by the Bureau of Plant Industry, State of Florida.
 - 2. Names of varieties not included therein shall conform generally with names accepted in the nursery trade.

3. Substitutions will be permitted only upon submission of proof that any specified plant is not obtainable or suitable for the location as specified on the plan and upon authorization of the Owner's Representative.

1.05 QUALITY CONTROL:

- A. Plants shall have a habit of growth that is normal for the species and shall be sound, healthy, vigorous and free from insect pests, plant diseases and injuries.
- B. Trees shall be heavily branched or in palms, heavily leafed.
- C. Plant material shall be graded Florida #1 as outlined under Grades and Standards for Nursery Plants, State Plant Board of Florida.
- D. The Owner's Representative shall have the right, at any stage of the operations, to reject any and all work and materials, which, in his opinion, do not meet with the requirements of these specifications.
- E. All plant material to be container grown.

1.06 CERTIFICATE OF INSPECTION:

- A. All shipments or orders of plant material shall be properly inspected at the nursery or at the growing site by the authorized State Agencies.
- B. All required inspection certificates should accompany the invoices. Required transportation documents are to be submitted with invoices as back-up.

1.07 MEASUREMENTS:

- A. The minimum acceptable size of all plants, measured after pruning, with branches in normal positions, shall conform to the measurements as shown on landscape drawings. Not extreme tip to tip, but main body of plant.
- B. Substantial deviations from these measurements must be approved by the Owner's Representative.
- C. The caliper of tree trunks is to be taken one foot above the ground level.

1.08 PRECONSTRUCTION CONFERENCE:

- A. Provide a work phase schedule for approval to the Owner's Representative prior to commencement of work.

1.09 SHIPMENT AND DELIVERY:

- A. Contractor shall notify the Owner's Representative in advance when plant material will be delivered.
- B. Plant materials shall be protected from weather, adequately packed to prevent breakage and drying out during transit.

- C. The Owner's Representative may inspect and select plant materials at the nursery or growing site.
- D. Legible tags will be attached to at least one plant of each species. Packages, boxes or bunches of plants will be identified with a similar tag attached. Plants, which do not meet specifications for quality herein, stated or plants that show improper handling or arrive on site in an unsatisfactory condition will be rejected. Rejected plants shall immediately be removed, disposed of, and approved nursery stock of like variety, size and age shall be replaced without additional cost to Owner.
- E. Final acceptance of plant material will be given only after material is planted and after meeting requirements prescribed below.

PART II - PRODUCTS

2.01 TOPSOIL:

- A. Topsoil material shall be free from subsequent hard clods, lime (and remain free of lime mixing during installation), stiff clay, hard pan, stones larger than one inch (1") in diameter, noxious weeds and plants, sods, partially disintegrated debris, insects or any other undesirable material, plants or seeds, that would be toxic or harmful to growth, obtained from naturally drained sources, shall contain at least 60 percent organic matter. Acidity shall range from pH 5.5 to pH 6.5 inclusive.
- B. Soil PH Testing: Soil shall be tested at each median and every 500 feet along the right-of-way planting. The results shall be given to the City Arborist for verification.

2.02 PLANTING MIX AND BACKFILL:

- A. All landscape shall be backfilled with a mixture of:
 - 1. 2/3 approved topsoil
 - 2. 1/3 peat
- B. All planting areas shall be stripped of all grass, weeds, trash, soil, etc. Groundcover beds shall be spread with soil mix and rototilled (or hand tilled) to a depth of six inches (6").

2.03 PLANT MATERIAL:

- A. Words "Plant Materials" or "Plants" refer to and include trees, shrubs, groundcover, grass or herbaceous materials.
- B. Plant species shall conform to those indicated on the drawings and in the specifications.
- C. Plants shall be sound, healthy, vigorous, free from plant diseases, insect pests, or their eggs and shall have healthy normal root systems. Plants shall be nursery grown stock in containers or freshly dug; balled or burlapped plants; tree trunks straight with no fresh cuts or scrapes; scars with required clear trunk.

- D. Plants shall not be pruned prior to delivery except as approved by the Owner's Representative.
 - E. All plants shall have been transplanted or root pruned at least once in the three years previous to contract date. Root bound container plants will not be accepted.
 - F. Collected plants shall not be used unless called for in the specifications or approved in writing by the Owner's Representative.
 - G. The Contractor shall ensure proper drainage will occur at each tree pit prior to the installation of the tree. All tree rootballs will be set at 1 - ½" above the finish grade. No material will be countersunk.
 - H. The Contractor shall designate an individual as the "Responsible Party" for completion of these terms and specifications along with the terms of the Contract. The Responsible Party shall be on site at all times and able to communicate in English with City personnel.
 - I. The City Forester (at his discretion) or his designee is authorized to conduct periodic inspections of the site to observe whether compliance is being met. Any violation of this agreement will result in a Cease and Desist Order which may be issued by the City Arborist for a period of up to two working days. Upon review of the violation by the City Manager or his designee, he may extend the Cease and Desist Order.
 - J. Adherence to the drawings and specifications will be the basis for Applications for payments.
- 2.04 QUANTITIES:
- A. In the event of a variation between the Plant List and the actual number of plants shown on the plans, the plans shall control.
- 2.05 FERTILIZER FOR PLANTINGS:
- A. All shrubs shall be fertilized with Agriform 20-10-5 Tablets at time of planting. Shrubs shall receive three tablets evenly spaced around the root ball. Tablets shall be placed at the mid-depth point of the plant pit.
 - B. Fertilizer for ground cover beds shall be evenly applied to all newly planted areas at the rate of 1-1/2 pounds of actual nitrogen, 1-1/2 pounds of actual phosphorus and 1-1/2 pounds of actual potash per one thousand square feet.
 - C. The fertilizer mixture shall contain minor elements suitable for the plants being used.
 - D. The source of the nutrients shall be suitable for the various specific type of plants being used (acid or alkaline).
- 2.06 MULCH:
- A. Mulch shall consist of 2" shredded cypress for all planting beds.

- 2.07 ANTI-DESSICANTS: For retarding excessive loss of plant moisture and inhibiting wilt shall be sprayable, water insoluble vinyl-vinylethylene complex which will produce a moisture retarding barrier not removable by rain. Wilt-pruf Formula NCF as manufactured by Nursery Specialty Products, Greenwich, CT or approved equal.

PART III - EXECUTION

3.01 GENERAL:

- A. Except as otherwise specified, the contractor's work shall conform to accepted horticultural practices as used in the trade.
- B. Plants shall be protected upon arrival at the site, by being thoroughly watered and properly maintained until planted. Plants shall not remain unprotected for a period exceeding 24 hours. At all times workmanlike methods customary in good horticultural practice shall be exercised.
- C. Irrigation system to be fully functional before planting each area.

3.02 DIGGING OF PITS:

- A. The existence and location of underground utilities if shown on the drawings are not guaranteed and shall be investigated and verified in the field before starting work. Excavation in the vicinity of existing structures and utilities shall be carefully done.
- B. Should overhead or underground obstructions be encountered which interfere with plantings, alternate locations will be selected by the Owner's Representative.
- C. Before digging of holes or beds, the location and arrangement of the planting shall be staked and approved by Owner's Representative or as shown on the drawings. Shrubs shall be straight and evenly spaced. Ground covers shall be stagger spaced.

3.03 TREE INSTALLATION:

- A. All tree pits shall be excavated to size and depth in accordance approved nursery practices.
- B. Circular pits with vertical sides shall be excavated for all plants except for bare-root groundcovers. Diameter of pits for shrubs shall be at least one foot (1') greater than the ball.
- C. After placing the plant in the pit, the planting soil specified hereinbefore shall be watered and firmly tamped to insure backfill mixture in and about all the roots. All tamping shall be such that no plants will settle lower than the depth above specified.
- D. Plants in containers shall be carefully removed from the pots, cans, boxes or other containers in a manner not to break away from the roots the ball of soil formed by the containers. They shall be set in the plant pit with the planting mixture carefully washed around and under the base of each to fill voids.

- E. All plants shall be thoroughly watered a time of planting and kept adequately watered until time of acceptance. The contractor shall provide the means where water lines are not available.
- F. Mulch shall be placed between and around all newly planted trees and shrubs as shown on drawings and as specified below. For individual plants, the mulch shall be spread to cover the saucer area and maintained until acceptance. When in place, the mulch is to be watered thoroughly.
- G. During the course of planting, excess and waste materials shall be removed daily. All reasonable precautions shall be taken to avoid damage to all structures and plants. When planting in an area that has been completed, the area shall be thoroughly cleaned of all waste materials.

3.05 MULCHING:

- A. Plants shall be mulched with a layer of 2 inches of mulch, entirely covering the area around each plant or the entire surface of each planting bed.
- B. Mulching will be accomplished only after the planting beds are weed free and level.

3.07 MAINTENANCE PRIOR TO FINAL INSPECTION:

- A. Plant maintenance shall include watering, pruning, weeding, cultivating, mulching, tightening and repairing of guys, replacement of sick or dead plants, resetting plants, resetting plants to proper grades or upright position and restoration of the planting saucer and all other care needed for proper growth of the plants. If planting is done after lawn preparation, proper protection of lawn areas shall be provided and any damage resulting from planting operations repaired promptly.
- B. Damage resulting from erosion, gulleys, washouts or other causes shall be repaired by filling with topsoil, tamping, refertilizing and slope stabilizing by the Contractor.

3.06 MAINTENANCE BEFORE ACCEPTANCE:

- A. Maintenance shall commence after each plant is planted and the maintenance period shall continue until the job or specific phase of the job is accepted. Extreme care shall be taken to instruct the Owner or his representatives in general maintenance procedures. Planting shall be maintained by watering, removal of dead branches, resetting plants to proper grades or upright positions and any other operation necessary to complete maintenance.

3.07 GUARANTEE AND REPLACEMENT:

- A. All work shall be guaranteed for a period of one year after the date of final acceptance by the Owner. All plant material shall be alive and in satisfactory growth at the end of the guarantee period.
- B. The Landscape Contractor shall notify the Owner's Representative in writing, ten (10) days prior to expiration of warranty periods and said warranty period shall be continued until such written notification is received.

- C. At the end of the guarantee period, inspection will be made by the Owner's Representative. All plants that are dead or not in satisfactory growth, as determined by the Owner's Representative shall be removed from the site and shall be immediately replaged.
- D. All replacements shall be plants of the same kind and size as specified in the Plant List. They shall be furnished and planted as specified with no additional cost to the Owner.
- E. All replacement shall be guaranteed for an additional period of three months.

END OF SECTION

PART I - GENERAL

1.01 SCOPE OF WORK:

- A. Provide all labor, materials, equipment and incidentals required to prepare lawn bed and install sodding in accordance with the drawings and as specified.

1.02 WORK SPECIFIED ELSEWHERE:

- A. Section 02750 - Landscape Irrigation System
- B. Section 02800 - Landscape Planting

1.03 SUBMITTALS:

- A. Submit representative sod samples for approval by Owner's Representative.
- B. Submit certifications for sod supplier.

1.04 QUALITY ASSURANCE:

- A. Sod shall be grown by certified Florida State Plant Board SOD FARM as approved by Florida.

PART II - PRODUCTS

2.01 SOD:

- A. Sod shall be St. Augustine Floratam of firm texture having a compacted growth and good root development as approved.
- B. Sod shall be certified to meet Florida State Plant Board specifications, absolutely true to varietal type, and free from weeds or other objectionable vegetation, fungus, insects and disease of any kind.
- C. Before being cut and lifted the sod shall have been mowed 3 times with final mowing not more than a week before cutting into uniform dimensions.

2.02 SOIL CONDITIONERS:

- A. Fertilizer:
 - 1. Fertilizer shall be complete fertilizer, the elements of which are derived from organic sources. Fertilizer shall be a standard product complying with State and Federal fertilizer laws.
 - 2. Percentages of nitrogen, phosphorus and potash shall be based on laboratory tests on soils outlined in Paragraph 1.02B and approved by the Owner's Representative. For purpose of bidding, assume 8% nitrogen, 8% phosphorus and 8% potash by weight. At least 50% of the total nitrogen shall contain no less than 3% water-insoluble nitrogen.

3. Fertilizer shall be delivered to the site, mixed as specified, in the original unopened standard size bags showing weight, analysis and name of manufacturer. Containers shall bear the manufacturers guaranteed statement of analysis, or a manufacturer's certificate of compliance covering analysis shall be furnished to the Owner's Representative. Store fertilizer in a waterproof place and in such a manner that it will be kept dry and its effectiveness will not be impaired.
- B. Superphosphate shall be composed of finely ground phosphate rock as commonly used for agricultural purposes containing not less than 20% available phosphoric acid.

PART III - EXECUTION

3.01 LAWN BED PREPARATION:

- A. Areas to be sodded shall be cleared of all rough grass, weeds, and debris and the ground brought to an even grade as approved.
- B. The soil shall then be thoroughly tilled to a minimum 8-inch depth.
- C. Superphosphate at a rate for bidding purposes of 5 pounds per 1000 square foot and complete fertilizer at a rate for bidding purposes of 16 pounds per 1000 square foot shall be evenly distributed over entire area and cross-disced in to a depth of 4-6 inches.
- D. The areas shall then be brought to proper grade, free of sticks, stones, or other foreign matter over 1-inch in diameter or dimension. The surface shall conform to finish grade, less the thickness of sod, free of water-retaining depressions. the soil friable and of uniformly firm texture.

3.02 SOD HANDLING AND INSTALLATION:

- A. During delivery, prior to planting, and during the planting of the lawn areas, the sod panels shall at all times be protected from excessive drying and unnecessary exposure of the roots to the sun. All sod shall be stacked during construction and planting so as not to be damaged by sweating or excessive heat and moisture.
- B. After completion of soil conditioning as specified above, sod panels shall be laid tightly together so as to make a solid sodded lawn area. On mounds and other slopes the sod panels shall be staggered to prevent water channelization, with the short dimension of the sod laid perpendicular to the slope. Immediately following sod laying the lawn areas shall be rolled with a lawn roller customarily used for such purposes. and then thoroughly watered.
- C. Bring the sod edge in a neat, clean manner even with the edge of all paving and shrub areas. Top dressing with approved, clean, weed free, sand may be required at no additional cost to the Owner if deemed necessary by the Owner's Representative.

3.03 MAINTENANCE:

- A. The Contractor shall produce a dense, well-established lawn. The Contractor shall be responsible for the repair and resodding of all eroded or bare spots until project acceptance. Repair sodding shall be accomplished as in the original work except that fertilizing may be omitted.
- B. Sufficient watering shall be done by the Contractor to maintain adequate moisture for optimum development of the lawn areas. Sodded areas shall receive no less than 1.5 inches of water per week or as directed by Owner's Representative.
- C. Mow sodded lawn area as soon as sod is rooted sufficiently to permit mowing.
- D. Do not permit new lawn areas to grow in excess of 4" high during maintenance period.
- E. After an established stand of grass has been accepted by the Owner or his representative, the Owner assumes all responsibility for maintenance; however, it is the contractor's responsibility to instruct the Owner in proper maintenance procedures.

3.04 REPAIRS TO LAWN AREAS DISTURBED BY CONTRACTOR'S OPERATIONS:

- A. Lawn areas planted under this Contract and lawn areas outside the designated areas damaged by Contractor's operations shall be repaired at once by proper sod bed preparations, fertilizing and resodding, in accordance with these specifications.

3.05 ACCEPTANCE: For the purpose of establishing an "Acceptance" standard, the following criteria are to be used:

Sod shall be healthy, well-rooted, even colored, viable, free of weeds, open joints and bare spots.

3.06 GUARANTEE AND REPLACEMENT: All sod shall be guaranteed for a period of three (3) months after the date of acceptance by the Owner. All sod areas shall be full, without bare spots, healthy, and even colored.

END OF SECTION

PART I - GENERAL

- 1.01 SCOPE OF WORK: Provide all labor, materials, equipment, and incidentals necessary to install a fully automatic irrigation system providing for 100% coverage, in accordance with the drawings and as specified.
- 1.02 RELATED WORK SPECIFIED ELSEWHERE:
- A. Section 02800 – Landscape Planting
- 1.03 GENERAL REQUIREMENTS:
- A. These specifications and drawings will govern all of the work, expressed or implied, necessary to install the automatic irrigation system. Water source for the system shall be Lake Behnke using the existing pump station. An emergency back up source will come from the 8" well servicing the cooling towers.
- B. Completion of work will mean full and exact compliance and conformity with all the provisions expressed or implied by drawings and specifications.
- 1.04 CONTRACTOR RESPONSIBILITIES:
- A. Provide all equipment, materials and labor necessary for completion of work.
- B. Obtain all necessary permits, licenses and fees necessary for completion of the work.
- C. Provide safe storage for all equipment and materials.
- D. Comply with all applicable codes.
- E. Coordinate all work around underground utilities with Owner and General Contractor to avoid conflict with other portions of the work on this project.
- F. Repair, at no cost to the Owner, any damage occurring to the area by his work or his employees.
- G. Carry all necessary insurance as specified in the General Conditions.
- H. Make all necessary final adjustments to fine tune system to provide 100% overlap coverage and protect new or existing structures.
- 1.05 SUBMITTALS:
- A. All submittals are to be made in writing per the General Conditions.

PART II - PRODUCTS

- 2.01 MATERIALS:
- A. All products are to be those expressed or implied on the Drawings.

- B. All products must conform to their respective codes and regulations.
- C. All products are to be installed and utilized in accordance with manufacturer's recommendations, Florida Irrigation Society Standards, and general irrigation installation standards.

PART III - EXECUTION

3.01 PREPARATION:

- A. The Contractor must examine the area and conditions under which the landscape irrigation system is to be installed and notify the Landscape Architect in writing of conditions detrimental to the proper and timely completion of the work. The Owner's Representative will notify, in writing, the Contractor as to the proper procedure or action to be taken to correct the problem.
- B. Should any sprinkler location adjustments be required, the Owner's Representative shall be consulted for approval.
- C. Trenches for pipes will be excavated of sufficient depth and width to permit proper handling and installation of pipe and fittings. Trenches will be trimmed to a uniform bed, free from rocks, clods or other sharp edged objects. A radius of four inches from the pipe shall be clean soil or sand free from rocks, large stones or other unsuitable material. All pipes will be firmly supported by compacted soil or sand. The compaction shall be as stated in these specifications.

3.02 INSTALLATION/APPLICATION/PERFORMANCE:

- A. All main lines shall be buried to a depth as to have a minimum cover of eighteen inches (18") and twenty-four inches (24") under vehicular paving. All other piping will have a minimum cover of twelve inches (12") except as noted on the drawings.
- B. Where practical, pipe will be assembled and/or welded on the surface and when lowered into trench will be snaked from side to side of trench bottom to allow for expansion and contraction.
- C. PVC Pipe & Fittings:
 - 1. Solvent weld pipe and fittings will be assembled using solvents and methods as recommended by the manufacturer and meeting ASAE 5376.1 Standards.
 - 2. Gasketed pipe (applicable with main lines only, if used): Pipe will be assembled by using approved lubricants and fittings. Pipe shall be seated completely into fittings prior to laying into trenches.
 - 3. Threaded Pipe will be assembled with Teflon tape on all threaded surfaces. Joints will be made to hand tight then tightened 1/2 turn more with strap type wrench. No pipe dope will be allowed on PVC products.

4. Polyurethane pipe will have a sufficient wall thickness to insure non-bursting at two times the operating pressure (250-psi minimum). Compatible, barbed or threaded type fitting will be used in conjunction with this pipe.
 5. All fittings will be thoroughly cleaned of dirt, dust and moisture before applying solvents, tapes, or lubricants.
- D. Pipe openings will be plugged during construction to prevent entrance of foreign materials.
- E. All connections between PVC pipe and metal valves or steel pipe shall be made with threaded type fittings using PVC male adapters with Teflon tape applied to the male threads. Make-up with light wrench pressure. (Steel pipe will not be threaded into plastic fittings.)
- F. All pipe or wiring under asphalt paving will be placed in separate Schedule 40 PVC sleeves and conduit respectively for the full pavement covered length. Burial depth of sleeves will be the same as that required for the pipes or wires contained therein.
- G. Pipe and valve location may be adjusted to facilitate construction and minimize cost insomuch that design intent of computation criteria is not affected. All adjustments will be coordinated with the Owner's Representative prior to implementation and will be recorded on the "Record Drawings" submitted to the Owner's Representative.
- H. All wiring from the irrigation controller to the remote control valves in the field will be furnished and installed by the irrigation contractor in the same trench as the main lines. All splices will be made using Rain Bird Pen-Tite Connectors, or equal, in valve boxes only. All control wires will be a minimum of an UF-14/1UL direct burial copper wire. All common wire will be a minimum of an UF-12/1UL direct burial copper wire (Accept as noted on drawings). Tape control wire every 10 feet. (Refer to trench detail). Provide number tags in the control valve box and at the controller to designate zone numbers.
- I. All heads will be set at locations specified on drawings to ensure adequate and even coverage.
1. All heads in shrubbery areas will be placed on risers of sufficient height to realize full range and coverage patterns. Refer to landscape drawings for plant material type and size used in irrigated areas.
 2. Adjust radius and arc of all heads to realize maximum pattern effectiveness with minimum wastage of water on non-irrigated areas.
 3. All sprinklers installed in the vicinity of the building and signs will be adjusted to prevent water from hitting these elements. All sprinklers will also be adjusted to minimize over-spray onto pave surfaces.
 4. All heads on risers of 12" or more will be rigidly secured in a plumb position using a minimum 30" angle iron stake and two stainless steel clamps. All risers will be painted "Black." (Accept as noted on plan).

- J. All sprinkler heads around the building will be installed nine inches (9") from the building. All sprinkler heads next to paving or sidewalks will be installed six inches (6") from such paving or sidewalks.
- K. The landscape irrigation controller(s) will be located in the general area as shown on plans. Contractor must notify Owner's Representative prior to installation of controller for approval to proceed with said installation. A type written legend enclosed in transparent protector will be securely attached inside controller door stating the location of areas covered by each remote control valve and the time each valve is to operate.
- L. Thrust blocks will be installed on all main line piping at any change of direction fittings, remote control valve tie-ins, gate valves and elevation changes (Refer to thrust block detail).
- M. All trenches that are opened during any particular working day will be closed and backfilled the same day or will be adequately barricaded and marked to insure protection and safety. Backfill shall be thoroughly compacted and evened off with adjacent soil level. The irrigation contractor shall do all necessary excavations, backfilling and compaction required for complete installation of the system. Compaction shall be made to the correct density of the material. Finish grade shall be re-established by the Contractor to the satisfaction of the Owner's Representative where any excavations are made.

3.03 CLEANUP:

- A. During the course of installation, excess and waste materials will be continuously and promptly removed, area kept clear and all reasonable precautions taken to avoid damage to existing structures, plants and grass. When installation in an area has been completed, area will be thoroughly cleaned up. Debris, rubbish and waste materials will be cleaned up and removed from property.

3.04 TESTS:

- A. Pressure: After all joints have been made and set at least 24 hours, flush out lines and hydrostatically test irrigation main at a pressure two times the operating pressure (100 psi) in the presence of the Owner's Representative. Pressure will be maintained on pipe for not less than six hours with a minimum of 2-psi drop. Should any leaks be found, the main will be repaired and the line retested until satisfactory. All lateral lines downstream from the remote control valves will be visually inspected for leaks. Should any be found, they will be repaired. The line shall then be retested until satisfactory. (Pressure tank must be isolated from main line during this test).
- B. Coverage: When the sprinkler system is completed the contractor in the presence of the Owner's Representative will perform a coverage test to determine if the covering of plant areas is complete and adequate.

3.05 MAINTENANCE BEFORE ACCEPTANCE:

- A. Provide maintenance for the entire system until final acceptance. Maintenance responsibility will include full operation and maintenance of the irrigation system at no additional expense to the Owner.

- B. Provide sufficient personnel who are fully trained in the irrigation operation and maintenance procedures.
- C. Operation and maintenance shall include but not be limited to the following:
 - 1. Cleaning all equipment, valves, drip emitters and pipe.
 - 2. Make repairs necessary for proper operation and functioning of the system.
 - 3. Maintain all spray heads to assure proper emission of designed water quantities.
 - 4. Replace all broken or malfunctioning equipment with new equipment.
 - 5. Train the Owner's maintenance personnel in complete operation and proper maintenance procedures for all equipment.

3.06 FIELD QUALITY CONTROL:

A. SUBSTANTIAL COMPLETION:

- 1. The Contractor as stated in the General Conditions and Supplements thereto shall make request for substantial completion shall be made by.
- 2. At the time of inspection, the Irrigation Contractor will demonstrate the entire system to the Owner's Representative, proving that all remote control valves are properly balanced, that all sprinklers are properly adjusted, that the system is workable, clean and efficient. This will be a requirement for acceptance of the work.
- 3. If, during the substantial completion inspection, it is determined that further work needs to be done to meet the conditions of these specifications, said work will be performed as soon as possible. If this results in the rescheduling of this inspection the Contractor will again be responsible to request the inspection.
- 4. A "Punch List" of deficiencies will be generated upon completion of this inspection.

B. FINAL ACCEPTANCE:

- 1. Contractor will at this time provide the Owner with the following:
 - a. Two sprinkler heads of each size and type. Complete with nozzles.
 - b. Two valve keys for operating gate valves.
 - c. A complete set of tools to allow the owner to maintain and/or replace the installed equipment.
 - 1. 1 Phillips head screwdriver
 - 2. 1 flat head screwdriver
 - 3. 1 set of channel lock pliers
 - 4. 1 wire cutter/stripper

5. 1 pint solvent cleaner
6. 1 pint solvent weld cement
7. 1 hacksaw with 2 blades
8. 1 strap wrench
9. 1 tool box for tools
10. 1 wrench for each different size of nut and/or bolt utilized on this project

C. Maintenance manuals for all installed equipment.

1. Record Drawing: The Contractor will provide the Owner with 2 prints and one reproducible sepia of the "Record Drawing" This drawing will show all wire splices, additional emitters, deleted emitters, change in pipe routing and any other deviation from construction documents.
2. Written Agreement: The Contractor will provide the Owner with a document stating that the Contractor is responsible for all materials and workmanship installed by him on the job for a period of one year from the date of final acceptance by the Owner.
3. Final Release of Lien: Furnish the Owner with Releases of Liens from all his suppliers as well as any subcontractors doing work on his behalf of this project.

END OF SECTION

PART I - GENERAL

- 1.01 SCOPE OF WORK: Provide all labor, materials, equipment and incidentals to prepare existing trees for construction for subgrade, paving, and planting within work limits in accordance with the drawings and as specified.
- 1.02 RELATED WORK SPECIFIED ELSEWHERE:
Section 02800 – Landscape Planting
- 1.03 GENERAL REQUIREMENTS:
- A. Important consideration must be given to the preservation of existing trees during construction. See Section 4.01 of this Section for penalties for failure to comply with preservation of existing trees.
 - B. No driving, parking or storage of materials shall be permitted within the canopy line of any existing tree.
 - C. Barricades shall be constructed around each tree or cluster of trees in accordance with these specifications and field modifications. The Owner's Representative and contractor shall make final adjustments prior to the start of construction.
 - D. Trees covered in this section shall be existing tree marked/designated to be saved by Owner's Representative.

PART II - PRODUCTS: Not applicable.

PART III - EXECUTION

- 3.01 Prior to any construction on-site, the contractor shall review the extent of site work to be performed around existing trees with the Owner's Representative.
- A. Trees within designated tree protection areas shall be marked and physically protected from parking, and storage of materials. See existing tree locations on plans.
 - B. Prior to construction or during site preparations, suitable barricading shall be erected and maintained around all trees to be preserved. All trees to be preserved shall be identified on-site by harmless marking or banding.
 - C. Tree protection barrier shall be constructed per the following guidelines:
 - Uprights - The equivalent of 4 x 4 lumber set at 6' minimum centers; 5' min ht. above grade, 3' min below grade.
 - Horizontals - The equivalent of one course of 2 x 4 lumber near top portion of uprights and one course at mid-point of uprights.
 - D. Barriers will remain in place until all paving construction and heavy equipment is out of area.

- E. All trees to be preserved shall have their natural soil level maintained. All efforts shall be made through the grading and drainage to maintain the natural drainage to such trees.
- F. Any vegetation or sod growing beneath the canopy of a tree shall be removed by hand or approved mechanical methods. No heavy equipment shall be permitted within the canopy of an existing tree that is marked on plans without the approval of the Owner's Representatives.
- G. If any roots larger than 1/2" are cut, the cut shall be a clean cut with a saw and treated with approved pruning compound.

3.02 Cleanup:

- A. All rubbish and roots generated from this area of work removed shall be removed off the property and legally disposed of.

PART IV - PENALTIES

- 4.01 The Contractor shall be cited in writing for each infraction of failing to comply with the plans and specifications herewith. Penalties for infractions are set at:
- A. For parking, driving or storing material within canopy lines of a designated tree to be saved: \$500 per day infraction.
 - B. For operating heavy equipment within canopy line of tree: \$1,000 per infraction unless paving or curbing work falls within drip line of trees.
 - C. Replacement of cost for any tree demolished or injured beyond repair due to negligent construction practices: \$500 per inch of caliper.

END OF SECTION