MANATEE COUNTY GOVERNMENT
INVITATION FOR BID (IFB) #08-2952-OV
NORMA LLOYD PARK IMPROVEMENTS – PHASE 1
BRADENTON, FL

Manatee County, a political subdivision of the state of Florida, (hereinafter "Manatee County" or the "County" or "Owner") will receive sealed bids from individuals, corporations, partnerships, and other legal entities organized under the laws of the state of Florida or authorized to conduct business in the state of Florida.

INFORMATION CONFERENCE

In order to insure that all prospective bidders have sufficient information and understanding of the County's needs, an **Information Conference** will be held **on October 23, 2008 @ 10:00 A.M.** at the Manatee County Administrative Center, Purchasing Conference Room, 1112 Manatee Avenue West, Suite 803, Bradenton, Florida. All interested bidders are encouraged to attend. **SITE VISIT IMMEDIATELY FOLLOWING THE INFORMATION CONFERENCE. NOTE: Article B.04 Inspection of Site is a requirement to be considered for award of this contract.**

TIME AND DATE DUE: **November 6, 2008 at 2:00 P.M.**

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Important Note: A prohibition of Lobbying has been enacted. Please review paragraph A.20 carefully to avoid violation and possible sanctions.

This project is being funded by the Florida Recreation Development Assistance Program (FRDAP).

FOR INFORMATION CONTACT:

OLGA VALCICH

(941) 749-3055 FAX (941) 749-3034

AUTHORIZED FOR RELEASE: _____

Engineer's Cost Estimate
Attachment "A"
Norma Lloyd Park - Phase 1
IFB #08-2952OV

IBI GROUP

October 10, 2008

Mr. Tom Yarger,
Construction Services Projects Supervisor
Construction Services Division
Manatee County Government
1112 Manatee Avenue West
Bradenton, Florida 34205

RE: Norma Lloyd Park-Phase I Cost Estimate

Dear Tom:

Per our contract, we have submitted our revised cost estimate for Phase I of the Norma Lloyd Park and have estimated the base bid to be $437,955 and the alternate parking lot cost to be $264.040 for a total cost for Phase I of $701,955.

Please let me know if you need anything further. Thank you, Tom.

Sincerely,

Sue Thompson, RLA

copy: file, Olga Valcick

1519 Main Street, Sarasota, Florida 34236 USA (941) 954-1718 FAX (941) 954-0231
IBI Group, Inc. is a Division of IBI Group and incorporates the practice of **The RMPK Group**

Attachment "B"
Architect's Supplemental Instructions

September 12, 2008

To: *All Bidders*

Subject: *Invitation to Bid, Manatee County, Norma Lloyd Park*

ARCHITECT'S SUPPLEMENTAL INSTRUCTION S (A.S.I.):

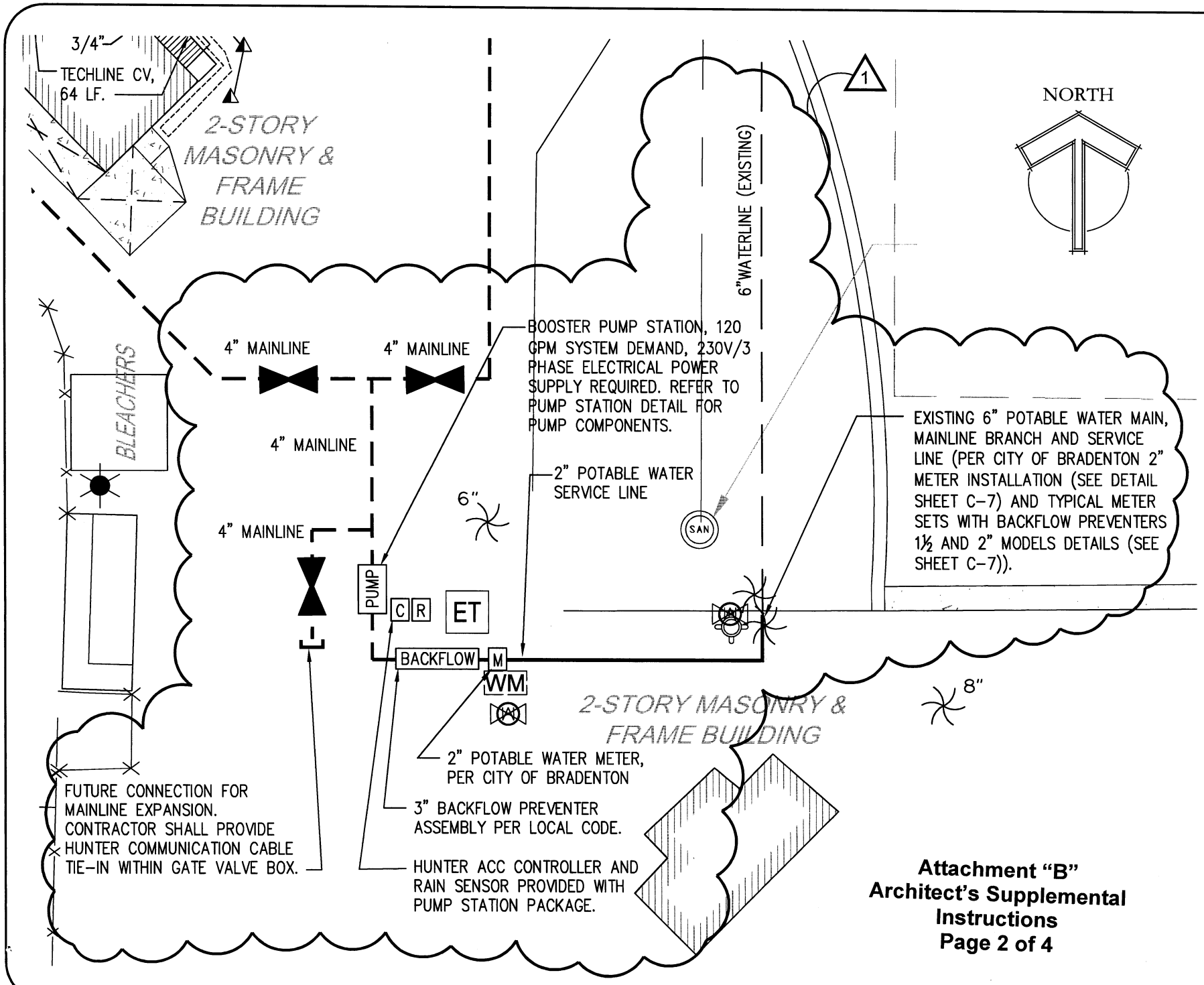
1. Attached are two 8 – ½" sheets that contain the revised information:

a. Revised Irrigation Plan (revised Sheet IR-1): Indicates plan revisions for tapping the mainline and setting the meter for the irrigation connection per the City of Bradenton requirements. The Contractor will be responsible to coordinate the tap of the line which is to be by the City of Bradenton. The Contractor will be responsible for the installation starting after the tap. The City of Bradenton will be present when the Contractor performs the work.

b. Addition of The City of Bradenton "Typical 2" Water Meter Installation" (added to Sheet C-7) for the Contractor's coordination with the City and use for installation.

Sincerely,

Sue Thompson, RLA
IBI Group, Inc.
1519 Main Street
Sarasota, FL 43236
Phone: 941-954-1718
Fax: 941-954-0231



Attachment "B"
Architect's Supplemental Instructions
Page 2 of 4

IBI GROUP, INC.
HTTP://WWW.IBIGROUP.COM
ENGINEERS CERT OF AUTH #2986 SURVEYORS CA#LB5610
PLANNERS LANDSCAPE ARCHITECTS ENVIRONMENTAL CONSULTANTS
1519 MAIN STREET
SARASOTA, FLORIDA 34236
(941) 954-1718 F: (941) 954-0231

SCALE:
PROJECT NUMBER 20245
SHEET 1 OF 2

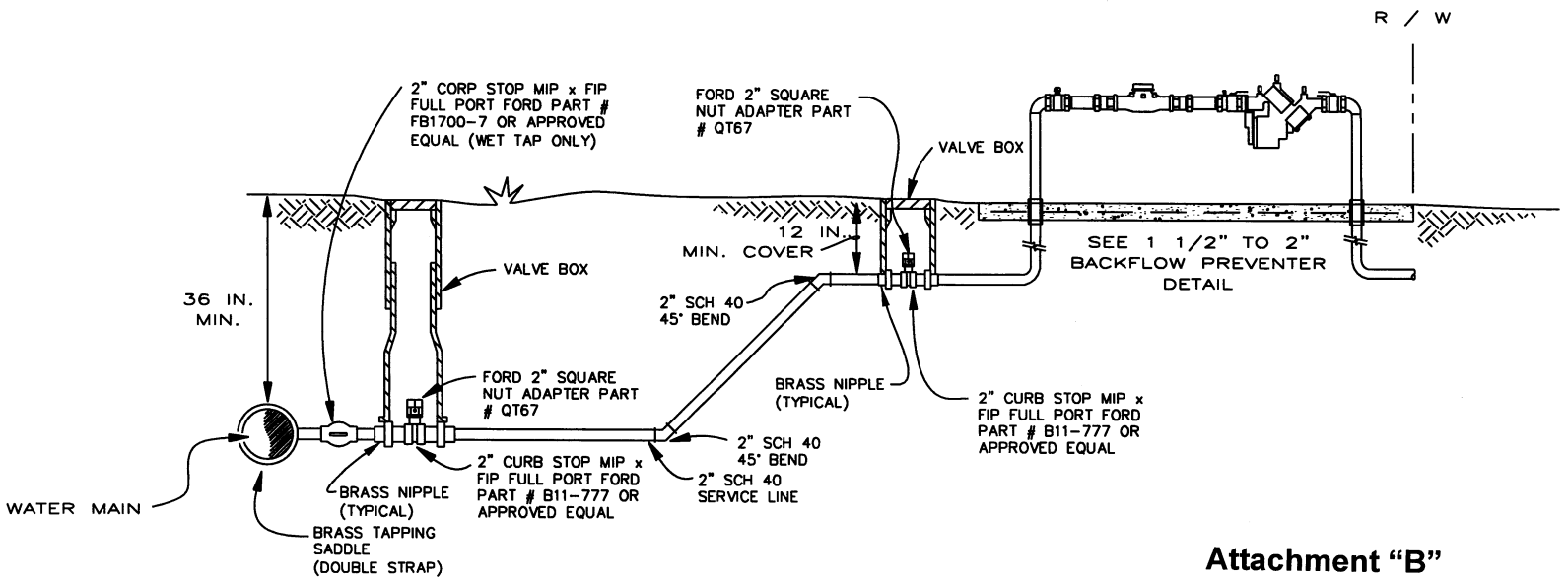
IBI GROUP

DRAWN: SC
CREW: SC
CHECKED: SC

NORMA LLOYD PARK
BRADENTON, FLORIDA

ASI #1 PLAN REVISIONS & ADDITIONAL DETAIL

09/12/08: REVISIONS TO CITY TAP AND IRRIGATION CONNECTION



Attachment "B"
Architect's Supplemental Instructions
Page 3 of 4

TYPICAL 2" WATER METER INSTALLATION

N.T.S.

REV.	DATE	DESCRIPTION	BY
1	1/18/08	ADDED CURB STOP AND BOX	SIBE

CITY OF BRADENTON, FLORIDA
PUBLIC WORKS
DEPARTMENT OF ENGINEERING

WATER DISTRIBUTION
2" WATER METER

DATE 2/07
SHEET NO. W-2

SCALE:
PROJECT NUMBER 20245
SHEET 2 OF 2

IBI GROUP, INC.
HTTP://WWW.IBIGROUP.COM
ENGINEERS CERT OF AUTH #2966 SURVEYORS CA#LB5510
PLANNERS LANDSCAPE ARCHITECTS ENVIRONMENTAL CONSULTANTS
1519 MAIN STREET
SARASOTA, FLORIDA 34236
(941) 954-1718 F: (941) 954-0231

IBI GROUP

DRAWN:
CREW:
CHECKED:
09/12/08: REVISIONS TO CITY TAP AND IRRIGATION CONNECTION

NORMA LLOYD PARK
BRADENTON, FLORIDA

ASI #1 PLAN REVISIONS & ADDITIONAL DETAIL

September 16, 2008

To: *All Bidders*

Subject: *Invitation to Bid, Manatee County, Norma Lloyd Park*

ARCHITECT'S SUPPLEMENTAL INSTRUCTIONS (A.S.I.):

1. The Contractor is to perform the follows:

a. The Contractor will be responsible to coordinate tapping of the water main line which is to be performed by the City of Bradenton. The Contractor will be responsible for the installation starting after the tap. The City of Bradenton will be present when the Contractor performs any/ all work on the water main line. Details have been provided in the drawing set by the City of Bradenton that depict what is expected by the Contractor regarding the water line.

Sincerely,

Sue Thompson, RLA
IBI Group, Inc.
1519 Main Street
Phone: 941-954-1718
Fax: 941-954-0231

Attachment "C"
Architect's Supplemental
Instructions
Page 1 of 3

October 3, 2008

To: *All Bidders*

Subject: *Invitation to Bid, Manatee County, Norma Lloyd Park*

ARCHITECT'S SUPPLEMENTAL INSTRUCTION S (A.S.I.): #2

1. The Contractor is to perform the following:

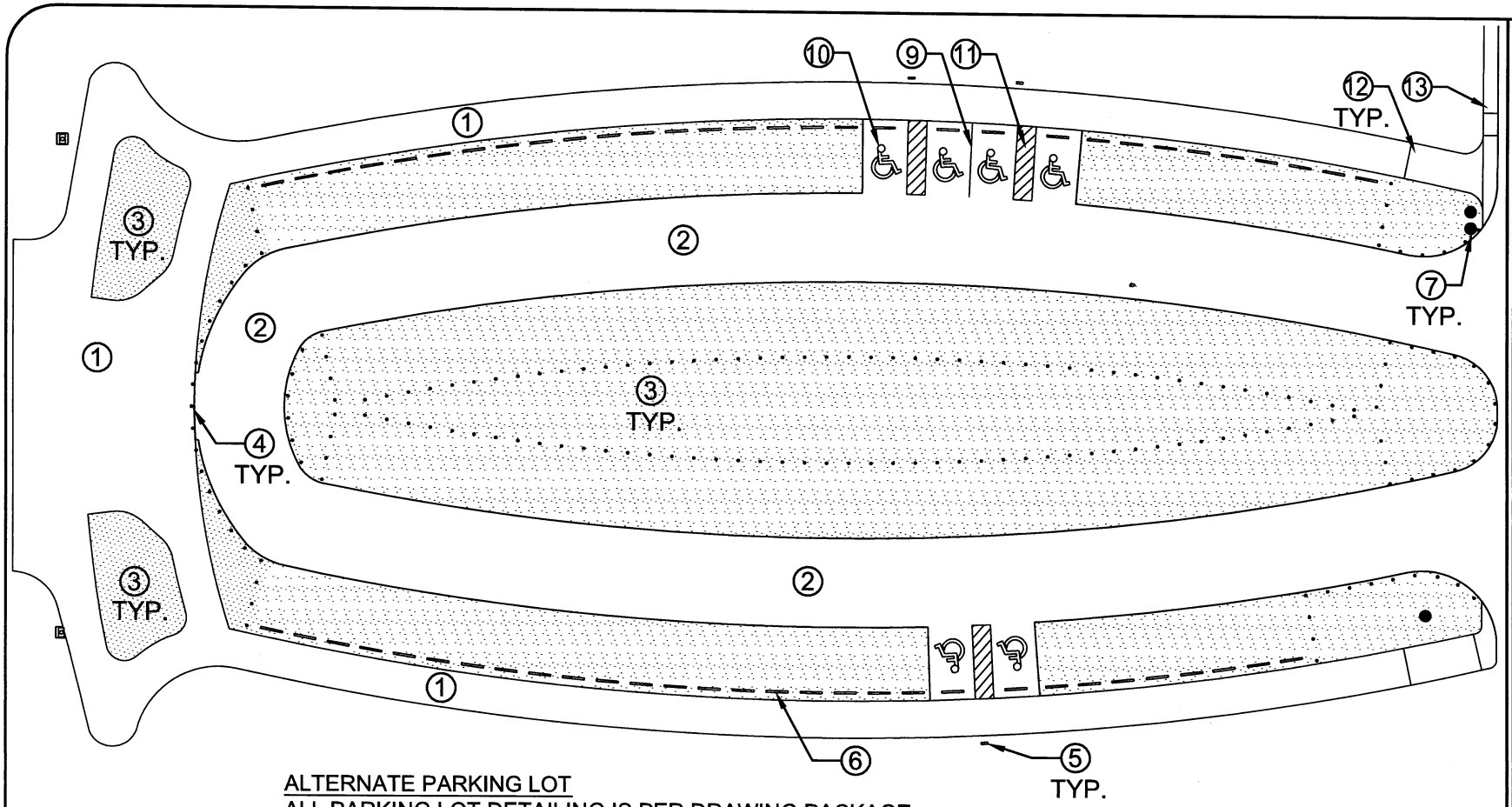
a. The Contractor will be responsible to provide bid pricing for the alternate parking lot sketch. The sketch is to be used to define the change in material for the drive aisles and parking bays and elimination of the landscaping and dumpster pad.

b. Bollard detail is provided so that the Contractor will know what to provide when pricing the bollard material and installation.

Sincerely,

Sue Thompson, RLA
IBI Group, Inc.
1519 Main Street
Sarasota, FL 43236
Phone: 941-954-1718
Fax: 941-954-0231

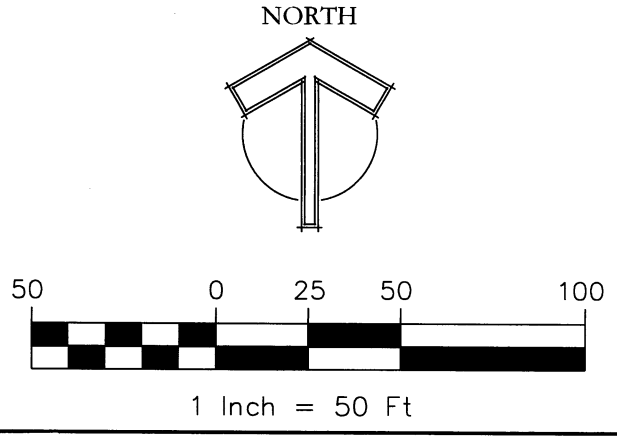
Attachment "B"
Architect's Supplemental



ALTERNATE PARKING LOT

ALL PARKING LOT DETAILING IS PER DRAWING PACKAGE EXCEPT WHERE NOTED ON THIS ASI.

① CONCRETE WALKS
② ASPHALT DRIVE AISLES AND HANDICAPPED PARKING SPACES.
③ BAHIA SOD PARKING AISLES (HATCHED AREA).
④ WOODEN BOLLARD (SEE ATTACHED DETAIL IN THIS ASI #2).
⑤ HANDICAPPED SIGNAGE.
⑥ PARKING BUMPER.
⑦ RELOCATED UTILITY POLES.
⑧ SOCCER FIELD LIGHT POLES.
⑨ PAVEMENT STRIPING.
⑩ HANDICAPPED SYMBOL.
⑪ HANDICAPPED AISLE.
⑫ HANDICAPPED RAMP.
⑬ NEW CONCRETE CURB AND SIDEWALK.



IBI GROUP, INC.
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1519 MAIN STREET
SARASOTA, FLORIDA 34236
(941) 954-1718 F: (941) 954-0231

IBI GROUP

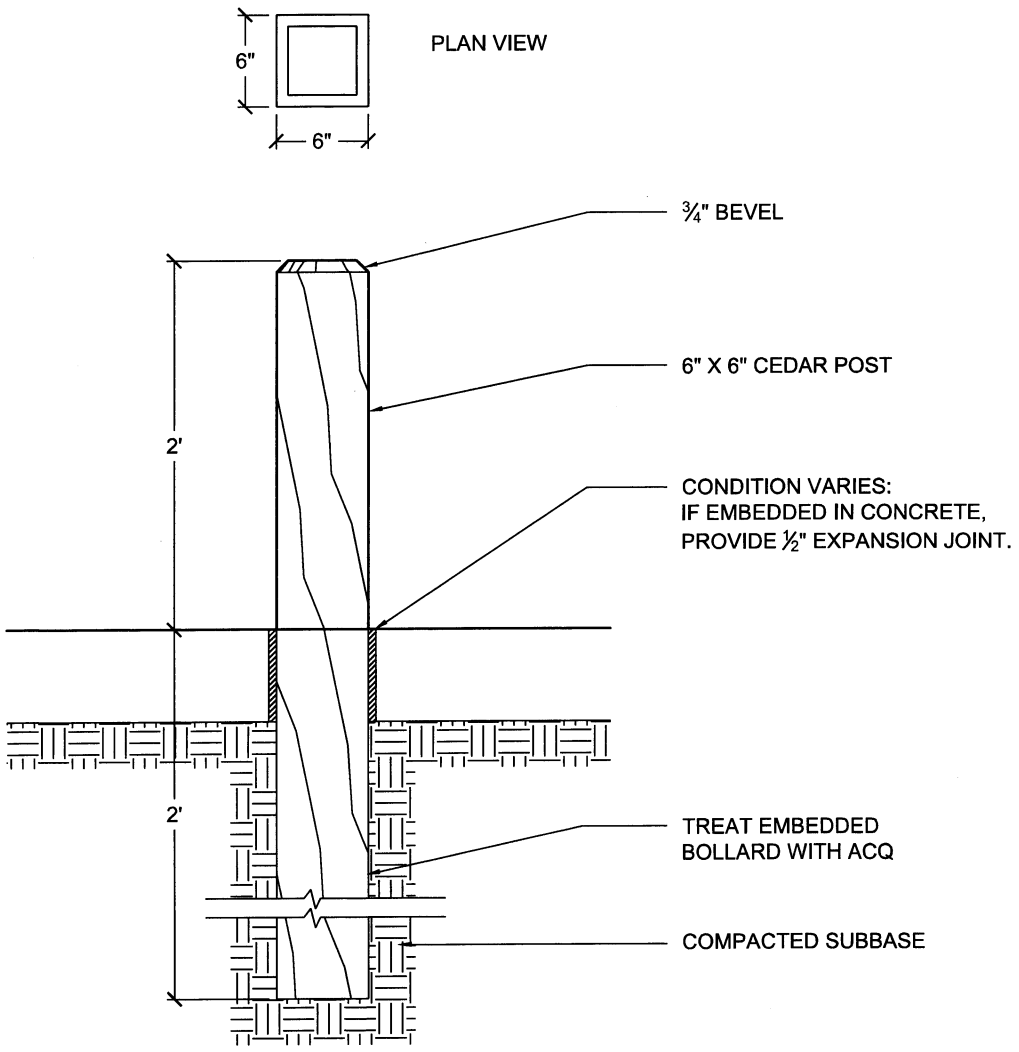
PROJECT NUMBER 20245

SHEET 1 OF 2

DRAWN: FW
CHECKED: ST
DATE: 10/03/08

NORMA LLOYD PARK
BRADENTON, FLORIDA

ASI #2 PARKING REVISION & ADDITIONAL DETAIL



1 SQUARE WOODEN BOLLARD - EMBEDDED

PLAN AND SECTION

NORMA LLOYD PARK BRADENTON, FLORIDA	DRAWN: FW CHECKED: ST DATE: 10/03/08	IBI GROUP	**IBI GROUP, INC.** HTTP://WWW.IBIGROUP.COM ENGINEERS CERT OF AUTH #2966 SURVEYORS CA#LB5610 PLANNERS LANDSCAPE ARCHITECTS ENVIRONMENTAL CONSULTANTS 1519 MAIN STREET SARASOTA, FLORIDA 34236 (941) 954-1718 F: (941) 954-0231	SCALE: 1"=10'
ASI #2 PARKING REVISION & ADDITIONAL DETAIL				PROJECT NUMBER 20245
				SHEET 2 OF 2

SECTION 00010
INFORMATION TO BIDDERS

A.01 OPENING LOCATION
These bids will be publicly opened at Manatee County Purchasing, 1112 Manatee Avenue West, Suite 803, Bradenton, Florida 34205 in the presence of County officials at the time and date stated, or soon thereafter. All bidders or their representatives are invited to be present.

A.02 BID INFORMATION AND BID DOCUMENTS
Manatee County Purchasing Division posts notices of bidding opportunities and addenda on Onvia DemandStar at http://www.DemandStar.com and on the Purchasing Division's web page at http://www.mymanatee.org which can be accessed by clicking on the "Purchasing" button on the left side of the screen and then clicking on the "Bids and Proposals" button.

Onvia DemandStar has an agency level subscription option that allows vendors to download bid documents and transact business with any one (1) agency for free. Vendors will receive email/fax notices of the agency's formal bid and informal quote opportunities, at no charge. This includes unlimited downloads/print capabilities for all electronically uploaded files by the agency, at no charge. Agency level subscribers will receive a complimentary subscription to the agency, to be automatically renewed annually. If a vendor chooses to increase the number of agencies beyond their single agency, regular subscription fees will apply. If a vendor chooses to download documents from a bid outside their agency, they will be charged a $5 download fee. You can register for free email notifications and downloads of Manatee County bids, proposals and addenda from Onvia DemandStar at http://www.DemandStar.com or call DemandStar at 1-800-331-5537 if you have any questions.

NOTICE: AUTOMATED NOTICES OF ADDENDA ARE ISSUED ONLY VIA THE ONVIA DEMANDSTAR "PLANHOLDER" DISTRIBUTION SYSTEM.

IF YOU OBTAIN A COPY OF THIS BID DOCUMENT FROM OTHER THAN REGISTERING WITH ONVIA DEMANDSTAR WEB SERVICE FOR THIS SPECIFIC BID – YOU SHALL NOT RECEIVE AUTOMATED NOTIFICATIONS OF ADDENDA.

IT IS THE RESPONSIBILITY OF EACH BIDDER, PRIOR TO SUBMITTING THEIR BID, TO CONTACT THE MANATEE COUNTY PURCHASING OFFICE (see contact information on page one) TO DETERMINE IF ADDENDA WERE ISSUED AND TO MAKE SUCH ADDENDA A PART OF THEIR BID.

A.02 BID INFORMATION AND BID DOCUMENTS (Continued)

THE COUNTY DOES NOT MAINTAIN MANUAL LISTS OF POTENTIAL BIDDERS, NOR DOES THE COUNTY SUPPLEMENT THE DISTRIBUTION OF ADDENDA.

The **bid documents are available in a portable document format (.PDF) file** which you may view and print using Adobe Acrobat software. You may download a free copy of this software (Adobe) from the County's web page if you do not have it.

Paper copies of bid or proposal documents may be purchased from Onvia DemandStar or by contacting **Jeffcoat Blueprinting, 1325 14th Street West, Bradenton, FL 34205, 941-747-6499 between the hours of 8:00 A.M. and 5:00 P.M. Monday through Friday at no charge.**

Bid Tabulation Sheets and Award Document/Recommendations appear on the DemandStar web page.

Notices of Source Selections appear on the DemandStar web page when the solicitation was made using this bid delivery service and the County's web page (Financial Management – Purchasing Division).

A public internet connection to DemandStar is available during regular business hours in the lobby of the Purchasing Division. If you have questions which cannot be answered by these sources, please contact the individual named on the first page of the bid or proposal.

A.03 BID FORM DELIVERY REQUIREMENTS

Any bids received after the stated time and date will not be considered. It shall be the sole responsibility of the bidder to have their bid delivered to the Manatee County Purchasing Office for receipt on or before the stated time and date. If a bid is sent by U.S. Mail, the bidder shall be responsible for its timely delivery to the Purchasing Office. Bids delayed by mail shall not be considered, shall not be opened at the public opening, and arrangements shall be made for their return at the bidder's request and expense.

A.04 CLARIFICATION & ADDENDA

Each bidder shall examine all Invitation for Bids documents and shall judge all matters relating to the adequacy and accuracy of such documents. Any inquiries, suggestions or requests concerning interpretation, clarification or additional information pertaining to the Invitation for Bids, shall be made through the Manatee County Purchasing Office. The County shall not be responsible for oral interpretations given by any County employee, representative, or others. The issuance of a written addendum is the only official method whereby interpretation, clarification or additional information can be given.

If any addenda are issued to this Invitation for Bids, the County will BROADCAST THE ADDENDA ON ONVIA DEMANDSTAR TO "PLANHOLDERS" IDENTIFIED ON THIS WEB SERVICE, however, it shall be the responsibility of each bidder, prior to submitting their bid, to contact the Manatee County Purchasing Office (see contact information on page 1) to determine if addenda were issued and to make such addenda a part of their bid.

A.05 SEALED & MARKED

Three signed copies of your bid shall be submitted in one sealed package, clearly marked on the outside "**Sealed Bid #08-2952-OV Norma Lloyd Park Improvements – Phase 1 Bradenton, FL"** with your company name. Address package to:

Manatee County Purchasing Office
1112 Manatee Avenue West, Suite 803
Bradenton, Florida 34205

A.06 LEGAL NAME

Bids shall clearly indicate the legal name, address and telephone number of the bidder. Bids shall be signed above the typed or printed name and title of the signer. The signer must have the authority to bind the bidder to the submitted bid.

A.07 BID EXPENSES

All expenses for making bids to the County are to be borne by the bidder.

A.08 IRREVOCABLE OFFER

Any bid may be withdrawn up until the date and time set for opening of the bid. Any bid not so withdrawn shall, upon opening, constitute an irrevocable offer for a period of 90 days to sell to Manatee County, the goods or services set forth in the attached specifications until one or more of the bids have been duly accepted by the County.

A.09 RESERVED RIGHTS

The County reserves the right to accept or reject any and/or all bids, to waive irregularities and technicalities, and to request resubmission. Also, the County reserves the right to accept all or any part of the bid and to increase or decrease quantities to meet additional or reduced requirements of the County. Any sole response received by the first submission date may or may not be rejected by the County depending on available competition and current needs of the County. For each item or for all items combined, the bid of the lowest responsive, responsible bidder will be accepted, unless all bids are rejected. The lowest responsible bidder shall mean that bidder who makes the lowest bid to sell goods and/or services of a quality which conforms closest to or most exceeds the quality of goods and/or services set forth in the attached specifications or otherwise required by the County, and who is fit and capable to perform the bid as made.

To be responsive, a bidder shall submit a bid which conforms in all material respects to the requirements set forth in the Invitation for Bids. To be a responsible bidder, the bidder shall have the capability in all respects to perform fully the contract requirements, and the tenacity, perseverance, experience, integrity, reliability, capacity, facilities, equipment, and credit which will assure good faith performance. Also, the County reserves the right to make such investigation as it deems necessary to determine the ability of any bidder to deliver the goods or service requested. Information the County deems necessary to make this determination shall be provided by the bidder. Such information may include, but shall not be limited to: current financial statements, verification of availability of equipment and personnel, and past performance records.

A.10 APPLICABLE LAWS

Bidder must be authorized to transact business in the State of Florida. All applicable laws and regulations of the State of Florida and ordinances and regulations of Manatee County will apply to any resulting agreement. Any involvement with Manatee County shall be in accordance with Manatee County Purchasing Code Ordinance 99-37. A protest with respect to this Invitation for Bids shall be submitted in writing prior to the scheduled opening date of this bid, unless the aggrieved person did not know and could not have been reasonably expected to have knowledge of the fact giving rise to such protest prior to the scheduled opening date of this bid. Any protest shall be submitted within seven calendar days after such aggrieved person knows or could have reasonably been expected to know of the facts giving rise thereto.

A.11 CODE OF ETHICS

With respect to this bid, if any bid violates or any bidder is a party to a violation of the Code of Ethics of Manatee County Purchasing Code Ordinance 99-37, Article 3, Ethics in Public Contracting, and/or Florida Statutes, Chapter 112, Part III, Code of Ethics for Public Officers and Employees, such bidder may be disqualified from furnishing the goods or services for which the bid is submitted and shall be further disqualified from submitting any future bids for goods or services for Manatee County.

A.12 COLLUSION

By offering a submission to this Invitation for Bids, the bidder certifies that he has not divulged, discussed or compared their bid with other bidders, and has not colluded with any other bidder or parties to this bid whatsoever. Also, bidder certifies, and in the case of a joint bid each party thereto certifies as to their own organization, that in connection with this bid:

a. any prices and/or cost data submitted have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices and/or cost data, with any other bidder or with any competitor;

b. any prices and/or cost data quoted for this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder, prior to the scheduled opening, directly or indirectly to any other bidder or to any competitor;

c. no attempt has been made or will be made by the bidder to induce any other person or firm to submit or not to submit a bid for the purpose of restricting competition;

d. the only person or persons interested in this bid, principal or principals is/are named therein and that no person other than therein mentioned has any interest in this bid or in the contract to be entered into; and

e. no person or agency has been employed or retained to solicit or secure this contract upon an agreement or understanding or a commission, percentage, brokerage, or contingent fee excepting bona fide employees or established commercial agencies maintained by bidder for purpose of doing business.

A.13 BID FORMS

Bids must be submitted on attached County forms, although additional pages may be attached. **Bidders must fully comply with all bid specifications, terms and conditions**. Failure to comply shall result in contract default, whereupon, the defaulting vendor shall be required to pay for any and all re-procurement costs, damages, and attorney fees as incurred by the County.

A.14 DISCOUNTS

Any and all discounts must be incorporated in the prices contained in the bid, and not shown separately. The prices as shown on the bid form shall be the price used in determining award(s).

A.15 TAXES

Manatee County is exempt from Federal Excise and State Sales Taxes (F.E.T. Exempt Cert. No. 59-78-0089K; FL Sales Tax Exempt Cert. No. **51-02-027548-53C**); therefore, the vendor is prohibited from delineating a separate line item in his bid for any sales or service taxes. Nothing herein shall affect the vendor's normal tax liability.

A.16 MATHEMATICAL ERRORS

In the event of multiplication/extension error(s), the unit price shall prevail. In the event of addition error(s), the extension totals will prevail. All bids shall be reviewed mathematically and corrected, if necessary, using these standards, prior to additional evaluation.

A.17 DESCRIPTIVE INFORMATION

Unless otherwise specifically provided in the specifications, all equipment, materials and articles incorporated in the work covered by this contract shall be new and of the most suitable grade for the purpose intended. Unless otherwise specifically provided in the specifications, reference to any equipment, material, article or patented process, by trade name, brand name, make or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition.

A.18 MODIFICATION OF BID SPECIFICATIONS

If a bidder wishes to recommend changes to the bid specifications, the bidder shall furnish in writing, data and information necessary to aid the County in evaluating the request to modify the bid specifications. The County is not obligated to make any changes to the bid specifications. Unless an addendum is issued as outlined in paragraph A.04, six calendar days prior to the opening date of this bid, the bid specifications shall remain unaltered. **Bidders must fully comply with the bid specifications, terms, and conditions.**

A.19 AMERICANS WITH DISABILITIES ACT

The Board of County Commissioners of Manatee County, Florida, does not discriminate upon the basis of any individual's disability status. This non-discrimination policy involves every aspect of the County's functions including one's access to, participation, employment, or treatment in its programs or activities. Anyone requiring reasonable accommodation for an **Information Conference** or **Bid Opening** should contact the person named on the first page of this Bid document at least twenty four (24) hours in advance of either activity.

A.20 LOBBYING

After the issuance of any Request for Proposals or Invitation for Bids, prospective bidders, proposers or any agent, representative or person acting at the request of such bidder or proposer shall not contact, communicate with or discuss any matter relating in any way to the Request for Proposals or Invitation for Bids with any officer, agent or employee of Manatee County other than the Purchasing Director or as directed in the

A.20 LOBBYING (Continued)
Request for Proposals or Invitation for Bids. This prohibition begins with the issuance of any Request for Proposals or Invitation for Bids, and ends upon execution of the final contract or when the invitation or request has been canceled. Violators of this prohibition shall be subject to sanctions as provided in the Manatee County Purchasing Code.

The County reserves the right to amend or to add to the names listed as persons to contact. All amendments or additions to the names listed as persons to contact shall be issued by the Purchasing Office, in writing.

A.21 DRUG FREE WORK PLACE
The Manatee County Board of County Commissioners adopted a policy regarding Bidders maintaining a Drug Free Work Place, prohibiting the award of bids to any person or entity that has not submitted written certification to the County that it has complied with those requirements [Reference Resolution R-93-22, Manatee County Purchasing Policies, Section 4, E (1) (a)]. A Drug Free Work Place Certification Form is attached to this bid for this purpose.

A.22 PUBLIC ENTITY CRIMES
In accordance with Section 287.133, Florida Statutes, a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases or real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017 for Category Two (as of 1/01/2005 is $25,000) for a period of 36 months from the date of being placed on the convicted vendor list.

A.23 PUBLIC CONTRACTING AND ENVIRONMENTAL CRIMES CERTIFICATION
In accordance with Manatee County Purchasing Code 99-37, Article 6, Manatee County Board of County Commissioners adopted a policy prohibiting the award of County contracts to persons, business entities, or affiliates of business entities who have not submitted written certification to the County, that they have not been convicted of bribery, attempted bribery, collusion, restraints of trade, price fixing, and violations of certain environmental laws. A Non-Conviction Certification Form is attached to this bid for this purpose.

A.24 EQUAL EMPLOYMENT OPPORTUNITY CLAUSE

Manatee County, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 and the Regulations of the Department of Commerce (15 CFR, Part 8) issued pursuant to such Act, hereby notifies all vendors that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this advertisement and will not be discriminated against on the grounds of race, color or national origin in consideration for an award.

A.25 MBE/WBE

The State of Florida, **Office of Supplier Diversity** provides the certification process and the database for identifying certified MBE/WBE firms. This service may be directly accessed at: http://www.osd.dms.state.fl.us/iframe.htm

If you have any questions regarding this State service, please contact their office at (850) 487-0915.

NOTE: ANY OR ALL STATEMENTS CONTAINED IN THE FOLLOWING SECTIONS: BASIS OF AWARD, TERMS AND CONDITIONS OF THE CONTRACT, OR SPECIFICATIONS WHICH VARY FROM THE INFORMATION TO BIDDERS , SHALL HAVE PRECEDENCE.

SECTION 00020
BASIS OF AWARD

B.01 BASIS OF AWARD

Award shall be to the most responsive, responsible bidder meeting specifications and having the lowest Total Bid Price for **Bid "A",** or the lowest Total Bid Price for **Bid "B",** for the requirements listed on the Bid Form for the Work as set forth in this Invitation for Bid. Bid prices shall include costs for furnishing all labor, equipment and/or materials for the completion of the Work in accordance with and in the manner set forth and described in the Contract Documents to the County's satisfaction within the prescribed time.

Two schedules for Completion of the Work shall be considered. Each bid for completion by the specific stated time shall be offered as a separate Total Bid Price. The County has the sole authority to select the bid based on the Completion Time which is in the best interest of the County. Only one award shall be made.

In evaluating bids, the County shall consider the qualifications of the bidders; and if required, may also consider the qualifications of the subcontractors, suppliers, and other persons and organizations proposed. County may also consider the operating costs, maintenance requirements, performance data and guarantees of major items of materials and equipment proposed for incorporation in the Work.

Whenever two or more bids which are equal with respect to price, quality and service are received, the award shall be determined by a chance drawing conducted by the Purchasing Office and open to the public.

This project is being funded by the Florida Recreation Development Assistance Program (FRDAP).

B.02 SUBCONTRACTORS

Subcontractors shall be bound by the terms and conditions of this contract insofar as it applies to their Work, but this shall not relieve the prime contractor from the full responsibility to the Owner for the proper completion of all Work to be executed under this contract.

The employment of unauthorized aliens by any vendor is considered a violation of Section 274(e) of the Immigration and Employment Act. If the vendor knowingly employs unauthorized aliens, such violation shall be cause for unilateral cancellation of this agreement.

B.03 QUALIFICATIONS OF BIDDERS

Each bidder must secure all licenses required (in accordance with Chapter 489 Florida Statutes) for the Work which is the subject of this bid, and, upon request, shall submit a true copy of all applicable licenses. The minimum license requirement for this project is a **General Contractor's License.**

To demonstrate qualifications to perform the Work, each bidder must be prepared to submit within five days of County's request, written evidence such as financial data, previous experience, present commitments and other such data as may be requested. Bidder must be able to provide evidence of Bidder's qualification to do business in the state of Florida. Each bidder shall submit as a portion of their bid, a completed Contractor's Questionnaire included as Section 00430.

A complete list of all subcontractors proposed for any portion of the Work may be requested of any Bidder deemed necessary by the Owner. Subcontracts shall be awarded only to those subcontractors considered satisfactory by the Owner.

B.04 INSPECTION OF SITE

Inspection of Site is a requirement to be considered for award of this bid. Inspection of Site shall take place immediately following the Information Conference which will be held on October 23, 2008 at 10:00 A.M.

B.05 AWARD OF CONTRACT

Award shall be made to the lowest responsive and responsible bidder only by a majority vote of a quorum of Manatee County Board of County Commissioners in open session or by the Purchasing Manager in accordance with Ordinance 99-37, Manatee County Procurement Code.

A written notice confirming award or recommendation thereof will be forwarded to the Successful Bidder accompanied by the required number of unsigned counterparts of the Agreement. Within 15 days thereafter, successful Bidder shall sign and deliver the required number of counterparts of the Agreement with any other required documents to County. (Note: Contract must be approved and executed by Manatee County to be valid.)

Said award may be conditional on the subsequent submission of other documents as specified herein. The Successful Bidder may be in default of the contractual obligations if any of the required documents are not submitted in a timely manner and in the form required by the County. If the Successful Bidder is in default, the County, through the Purchasing Manager, will void its acceptance of the Bidder's offer and may determine to accept the offer from the second lowest responsive, responsible bidder or re-advertise for bids.

SECTION 00030

GENERAL TERMS AND CONDITIONS OF THE CONTRACT

C.01 CONTRACT FORMS

The agreement resulting from the acceptance of a bid shall be in the form of the agreement stated in this bid.

C.02 ASSIGNMENT OF CONTRACT

Contractor shall not assign, transfer, convey, sublet or otherwise dispose of this Contract or of his right, title, or interest therein, or his power to execute such Contract, or to assign any monies due or to become due there under to any other person, firm or corporation unless first obtaining the written consent of the County. The giving of such consent to a particular subcontractor assignment shall not dispense with the necessity of such consent to any further or other assignment.

C.03 COMPLETION OF WORK

The Work will be substantially complete and ready for occupancy within the specific calendar days from the date the Contract Time commences to run (upon issuance of Notice to Proceed). Two bids shall be considered based on **60** calendar days and based on **90** calendar days. The County has the sole authority to select the bid based on the Completion time which is in the best interest of the County. Only one award shall be made.

C.04 LIQUIDATED DAMAGES

If the Contractor refuses or fails to prosecute the Work, or any separable part thereof, with such diligence as will hinder its completion within the time specified, the County may seek damages. The actual damages for delay will be impossible to determine and in lieu thereof, the Contractor shall pay to the Owner the sum of **$1,423.00** as fixed, agreed, and liquidated damages for each calendar day of the delay until the Work is finally accepted by the County and the Contractor and his Surety shall be liable for the amount thereof.

C.05 PAYMENT

Contractor may apply for partial payment on monthly estimates, based on the amount of Work done or completed in compliance with the provisions of the Contract. Contractor shall submit an application, on a form provided or approved by the County, of an approximate estimate of the proportionate value of the Work done, items and locations of the Work performed up to and including the last day of the period then ending. The County will then review said estimate and make any necessary revisions so that the estimate can receive approval for payment. If the Contractor and the County do not agree on the approximate estimate of the proportionate value of the Work done for any pay period, the determination of the County will be binding. The amount of said estimate after deducting any required retainage and all previous payments shall be due and payable to the Contractor within 20 days after the pay estimate has been approved by the County. It is the Contractor's responsibility for the care of the materials. Any damage to or loss of

C.05 PAYMENT (Continued)

said materials is the full responsibility of the Contractor. Any Periodical Pay Estimate signed by the Contractor shall be final as to the Contractor for any or all work covered by the Periodical Pay Estimate. Any requests for payment of materials stored on site must be accompanied with a paid receipt. The Contractor warrants and guarantees that title to all work, materials and equipment covered by any application for payment, whether incorporated in the project or not, will pass to the County at the time of payment free and clear of all liens, claims, security interests and encumbrances (hereafter referred to as "Liens").

The Contractor agrees to furnish an affidavit stating that all laborers, material men, and subcontractors have been paid on the project for Work covered by the application for payment and that a partial or complete release of lien, as may be necessary, be properly executed by the material men, laborers, subcontractors on the project for Work covered by the application for payment, sufficient to secure the County from any claim whatsoever arising out of the aforesaid Work.

When the Contractor has completed the Work in compliance with the terms of the Contract Documents, he shall notify the County in writing that the project is ready for final inspection. The County will then advise the Contractor as to the arrangements for final inspection and what Work, if any, is required to prepare the project or a portion thereof for final inspection. When the County determines the project or portion thereof is ready for final inspection, the County shall perform same. Upon completion of final inspection, the County will notify Contractor of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies. When all such errors have been corrected, a final re-inspection will be made. The process will be repeated until, in the opinion of the County, the project has been completed in compliance with the terms of the Contract Documents.

When final acceptance has been made by the County, the County will make final payment of the Contract amount, plus all approved additions, less approved deductions and previous payments made. The Contract will be considered complete when all work has been finished, the final inspection made, approved as-builts received, and the project finally accepted in writing by the County. The Contractor's responsibility shall then terminate except as otherwise stated.

C.06 RETAINAGE

Contracts which **do not** require performance and payment bonds shall, include a retainage of 10% of the total contract amount to be withheld from all payments until 50% of the work has been completed. After 50% completion, the retainage shall be reduced to 5% of the total contract amount, and one half of the previously withheld amount shall be paid to the Contractor. The remaining retainage shall be included in the final payment.

C.06 RETAINAGE (Continued)

Contracts which **do** require performance and payment bond (if the total bid price exceeds $100,000), shall include no retainage until 75% of the work has been completed. Retainage of 2.5% of the total contract amount will then be withheld from payment requests. Upon substantial completion, this retainage shall be reduced to 1% of the total contract amount plus such amount as the Owner may reasonably deem necessary to repair, replace, complete or correct any damaged, defective, incorrect or incomplete work. The remaining retainage shall be included in the final payment.

C.07 WARRANTY AND GUARANTEE PROVISIONS

All work, materials, and equipment furnished as defined herein shall be guaranteed and warranted by the contractor for a minimum period of three (3) years, unless otherwise specified, from final acceptance by the Owner to be free from defects due either to faulty materials or equipment or faulty workmanship. All materials, equipment, and workmanship furnished and installed by the contractor is warranted and guaranteed by the contractor to be such as to meet the required standards and to accomplish the purposes and functions of the project as defined, detailed, and specified herein. The Owner shall, following discovery thereof, promptly give written notice to the contractor of faulty materials, equipment, or workmanship within the period of the guarantee and the contractor shall promptly replace any part of the faulty equipment, material, or workmanship at his own cost. These warranty and guarantee provisions create no limitations on the Owner as to any claims or actions for breach of guaranty or breach of warranty that the Owner might have against parties other than the contractor, and do not constitute exclusive remedies of the Owner against the contractor.

C.08 ROYALTIES AND PATENTS

The contractor shall pay all royalties and license fees for equipment or processes in conjunction with the equipment and/or services being furnished. Contractor shall defend all suits or claims for infringement of any patent, trademark or copyright, and shall save the County harmless from loss on account thereof, including costs and attorney's fees.

C.09 AUTHORIZED PRODUCT REPRESENTATION

The contractor, by virtue of submitting the name and specifications of a manufacturer's product, will be required to furnish the named manufacturer's product. Failure to perform accordingly may, in the County's sole discretion, be deemed a breach of contract, and shall constitute grounds for the County's immediate termination of the contract.

C.10 REGULATIONS

It shall be the responsibility of the bidder to assure compliance with any OSHA, EPA and/or other federal or state of Florida rules, regulations or other requirements, as each may apply.

C.11 CANCELLATION

Any failure of the contractor to furnish or perform the Work (including, but not limited to, commencement of the Work, failure to supply sufficient skilled workers or suitable materials or equipment) in accordance with the contract, the County may order the stop of the Work, or any portion thereof, until the cause for such order has been eliminated. If the contractor persistently fails to perform the Work in accordance with the contract, the County reserves the right to terminate the contract and select the next qualified bidder or re-advertise this procurement in part or in whole. The County reserves the right to cancel all or any undelivered or unexecuted portion of this contract with or without cause.

C.12 INDEMNIFICATION

The contractor covenants and agrees to indemnify and save harmless the County, its agents and employees, from and against all claims, suits, actions, damages, causes of action, or judgments arising out of the terms of the resulting agreement for any personal injury, loss of life, or damage to the property sustained as a result of the performance or non-performance of services or delivery of goods; from and against any orders, judgments, or decrees, which may be entered against the County, its agents or employees; and from and against all costs, attorney's fees, expenses and other liabilities incurred in the defense of any such claim, suit or action, and the investigation thereof. Nothing in the award, resulting agreement, contract or purchase order shall be deemed to affect the rights, privileges and immunities of the County as set forth in Florida Statute Section 768.28.

C.13 MANUALS, SCHEMATICS, HANDBOOKS

All manuals, schematics and handbooks shall be provided which are applicable to the equipment delivered. An operators manual, parts manual and technician manual must also be provided. Parts lists (manuals) must include OEM part numbers for items not manufactured by the bidder. Vendor shall furnish two (2) copies of each.

C.14 INSURANCE

The contractor will not commence work under a contract until all insurance under this section and such insurance coverage as might be required by the County, has been obtained. The contractor shall obtain, and submit to Purchasing within 15 calendar days of request, at his expense, the following minimum amounts of insurance (inclusive of any amounts provided by an umbrella or excess policy):

a. Workers' Compensation/Employers' Liability

Part One - There shall be no maximum limit (other than as limited by the applicable statute) for liability imposed by Florida Worker's Compensation Act or any other coverage required by the contract documents which are customarily insured under Part One of the standard Worker's Compensation Policy.

C.14 INSURANCE (Continued)

Part Two - The minimum amount of coverage required by the contract documents which are customarily insured under Part Two of the standard Workers' Compensation Policy shall be:

$100,000	(Each Accident)
$500,000	(Disease-Policy Limit)
$100,000	(Disease-Each Employee)

b. Commercial General Liability

The limits are to be applicable only to work performed under this contract and shall be those that would be provided with the attachment of the Amendment of Limits of Insurance (Designated Project or Premises) endorsement (ISO Form CG 25 03) to a Commercial General Liability Policy with the following minimum limits:

General Aggregate:

Products/Completed Operations Aggregate	$1,000,000
Personal and Advertising Injury	$300,000
Each Occurrence	$300,000
Fire Damage (Any One Fire)	$Nil
Medical Expense (Any One Person)	$Nil

c. Business Auto Policy

Each Occurrence Bodily Injury and Property Damage Liability Combined	$300,000
Annual Aggregate (if applicable)	$1,000,000

d. Owners Protective Liability Coverage

The minimum OPC Policy limits per occurrence and, if subject to an aggregate, annual aggregate to be provided by the contractor shall be the same as the amounts shown above as the minimum per occurrence and general policy aggregate limits respectively required for the Commercial General Liability coverage. The limits afforded by the OPC Policy and any excess policies shall apply only to the Owner and the Owner's officials, officers, agents and employees and only to claims arising out of or in connection with the work under this contract.

e. Property Insurance

If this contract includes construction of or additions to above ground buildings or structures, contractor shall provide "**Builder's Risk**" insurance with the minimum amount of insurance to be 100% of the value of such addition(s), building(s), or structure(s).

C.14 INSURANCE (Continued)

f. Installation Floater

If this contract does not include construction of or additions to above ground building or structures **but does involve** the installation of machinery or equipment, contractor shall provide an "**Installation Floater**" with the minimum amount of insurance to be 100% of the value of such addition(s), building(s), or structure(s).

g. Certificates of Insurance and Copies of Polices

Certificates of Insurance in triplicate evidencing the insurance coverage specified in the six above paragraphs a., b., c., d., e. and f., shall be filed with the Purchasing Manager before operations are begun. The required certificates of insurance shall name the types of policy, policy number, date of expiration, amount of coverage, companies affording coverage, and also shall refer specifically to the bid number, project title and location of project. Insurance shall remain in force at least one year after completion and acceptance of the project by the County, in the amounts and types as stated herein, with coverage for all products and services completed under this contract.

ADDITIONAL INSURED: The contractor shall name Manatee County as additional insured in each of the applicable policies.

If the initial insurance expires prior to the completion of operations and/or services by the contractor, renewal certificates of insurance and required copies of policies shall be furnished by the contractor and delivered to the Purchasing Manager 30 days prior to the date of their expiration.

Nothing herein shall in any manner create any liability of the County in connection with any claim against the contractor for labor, services, or materials, or of subcontractors; and nothing herein shall limit the liability of the contractor or contractor's sureties to the County or to any workers, suppliers, material men or employees in relation to this contract.

C.15 BID BOND/CERTIFIED CHECK

By offering a submission to this Invitation for Bid, the bidder agrees, should the bidder's bid be accepted, to execute the form of contract and present the same to Manatee County for approval within 15 days after being notified of the awarding of the contract. The bidder further agrees that failure to execute and deliver said form of contract **within 15 days** will result in damages to Manatee County and as guarantee of payment of same a bid bond/certified check shall be enclosed within the submitted sealed bid in the amount of five (5%) percent of the total amount of the bid. The bidder further agrees that in case the bidder fails to enter into a contract, as prescribed by Manatee County, the bid bond/certified check accompanying the bid shall be forfeited to Manatee County as agreed liquidated damages. If the County enters into a contract with a bidder, or if the County rejects any and/or all bids, accompanying bond will be promptly returned.

C.16 PERFORMANCE AND PAYMENT BONDS

The successful bidder shall furnish surety bonds as security for faithful performance of the contract awarded as a result of this bid, and for the payment of all persons performing labor and/or furnishing material in connection therewith. Surety of such bonds shall be in an amount equal to the bid award (100% each) and from a duly authorized and nationally recognized surety company, authorized to do business in Florida, satisfactory to this County. The attorney-in-fact who signs the bonds must file with the bonds, a certificate and effective dated copy of power-of-attorney. (Reference Florida Statute 255.05)

Furnishing the performance and payment bonds shall be requisite to execution of a contract with the County. Said performance and payment bonds will remain in force for the duration of the contract with the premiums paid by the contractor. Failure of successful bidder to execute such contract and to supply the required bonds shall be just cause for annulment of the award. The County may then contract with another acceptable bidder or re-advertise this Invitation for Bid. If another bidder is accepted, and notice given within 90 days after the opening of bids, this acceptance shall bind the bidder as though they were originally the successful bidder.

Failure of the County at any time, to require performance by the contractor of any provisions set out in the contract will in no way affect the right of the County, thereafter, to enforce the provisions. Bonds are to remain in effect for one year after final payment becomes due.

C.17 NO DAMAGES FOR DELAY

No claim for damages or any claim other than for an extension of time shall be made or asserted against the County by reason of any delays. The Contractor shall not be entitled to an increase in the Total Contract Price or payment or compensation of any kind from the County or direct, indirect, consequential impact or other costs, expenses for damages, including but not limited to costs of acceleration or inefficiency arising because of delay, disruption, interference or hindrance from any cause whatsoever; provided, however, that this provision shall not preclude recovery or damages by the Contractor for hindrance or delays due solely to fraud, bad faith, or active interference on part of the County or its agents. Otherwise, the Contractor shall only be entitled to extensions of the Contract Time as the sole and exclusive remedy for such resulting delay, in accordance with and to the extent specifically provided above.

C.18 NO INTEREST

Any monies not paid by the County when claimed to be due to the Contractor under this Contract shall not be subject to interest including prejudgment interest. Any monies not paid by the County when claimed to be due to the Contractor for damages awarded in the case of construction delays shall not be subject to prejudgment interest.

C.19 CONSTRUCTION OF CONTRACT

This Contract and the rights and responsibilities hereunder shall not be construed more strongly against either party, regardless of the extent to which such party may have participated in the preparation hereof.

C.20 PROJECT SCHEDULE

The successful bidder will be required to submit a detailed construction schedule upon notification of award or its intent.

SECTION 00100
INSTRUCTIONS TO BIDDERS

D.01 THE WORK

The work included in this contract is generally described as improvements to the Norma Lloyd Park. Work shall include but shall not be limited to the demolition of structures / construction of a soccer field, lighted parking lot(s) and accessories / stormwater system / landscaping / installation of pavers / irrigation system(s) in accordance with the Technical Specifications and Drawings provided with this Invitation for Bid. Construction and record drawings shall fully meet the requirements of all current federal, state and county laws, rules, regulations and standards, with the most stringent applying.

Location: 1024 24th Street East, Bradenton, FL

The apparent silence of the Specifications as to any detail, or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, and interpretation of these Specifications shall be made upon that basis.

D.02 SECURING OF DOCUMENTS

One complete set of the bidding documents for this project and/or products may be obtained from **Jeffcoat Blueprinting, 1325 14th Street West, Bradenton, FL 34205, 941-747-6499 between the hours of 8:00 A.M. and 5:00 P.M. Monday through Friday** at no charge. Complete set of the bidding documents must be used in preparing bids. Neither Owner nor Engineer assumes any responsibility for errors and misinterpretations resulting from the use of incomplete sets of Bidding Documents.

D.03 EXAMINATION OF CONTRACT DOCUMENTS AND SITE

It is the responsibility of each Bidder before submitting a Bid to **(a)** examine the Bid Documents thoroughly, **(b)** visit the site to become familiar with the local conditions that may affect cost, progress, performance or furnishing of the Work, **(c)** consider federal, state, and local codes, laws, and regulations that may affect cost, progress, performance or furnishing of the Work, **(d)** study and carefully correlate Bidder's observations with the Bid Documents, and **(e)** notify Owner of all conflicts, errors or discrepancies in the Bid Documents.

D.04 DISCRETIONARY WORK (BID ITEM)

Payment for work under this bid shall be made only at the Owner's discretion in order to satisfactorily complete the project in accordance with the plans and specifications. Discretionary Amount for this project: $40,000.00.

D.05 PERMITS

The contractor shall procure (unless otherwise stated) all permits and licenses, pay all charges fees, and taxes and give all notices necessary and incidental to the due and lawful prosecution of the Work.

D.06 BIDS

Bids are to be submitted in triplicate, one original and two copies, upon the County supplied forms. All blank spaces must be filled in as noted with amounts extended and totaled and no changes shall be made in the wording of the forms or in the items mentioned therein. In the event a change is made in your submittal, the Bidder shall write its initials by the change. Any bid may be rejected which contains any omissions, alterations, irregularities of any kind, or which shall in any manner fail to conform to bid requirements.

A bid made by an individual, either in his/her own or proper person or under a trade or firm name, shall be executed under the individual's signature. If made by a partnership, the bid shall be executed by two or more of the general partners. If made by a corporation, the bid shall be executed by its president or other legally authorized corporate officer or agent.

D.07 SUBCONTRACTORS, SUPPLIERS AND OTHER

The identity of subcontractors, suppliers, and other persons and organizations (including those who furnish the principal items of material and equipment), may be requested by the Owner for each bid item from any of the Bidders and the Bidder shall respond within five days after the date of such request. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and evidence of qualification for each such subcontractor, supplier, persons or organization if requested by Owner. If Owner after due investigation has reasonable objection to any proposed subcontractor, supplier, other person or organization, Owner may, before the Notice of Award is given, request the apparent successful bidder to submit an acceptable substitute without an increase in Contract Price or Contract time.

D.07 SUBCONTRACTORS, SUPPLIERS AND OTHER (Continued)

If apparent successful Bidder declines to make any such substitution, Owner may award the contract to the next lowest qualified Bidder that proposes to use acceptable subcontractors, suppliers, and other persons who Owner does not make written objection to. Contractor shall not be required to employ any subcontractor, supplier, other person or organization who Contractor has reasonable objection to.

No more than 45% of the Total Bid Price, including labor and materials Discretionary Work which is listed on the Bid Form), shall be performed by subcontractors. Bid Form includes duplication of bid items where the Bidder shall state the percentage of work and a description of the work (of each item) which shall be performed by a Subcontractor.

D.08 TESTING

All inspection and testing of materials furnished under this Contract will be performed by the County or duly authorized inspection engineers or inspection bureaus without cost to the Contractor, unless otherwise expressly specified. Contractor shall be responsible for all failed tests. The cost of shop and field tests of equipment and of certain other tests specifically called for in the Contract, shall be borne by the Contractor and such costs are deemed to be included in the Total Bid Price.

D.08 TESTING (Continued)

Materials and equipment submitted by the Contractor as the equivalent to those specifically named in the Contract may be tested by the County for compliance. The Contractor shall reimburse the County for the expenditures incurred in making such tests on materials and equipment which are rejected for non-compliance.

D.09 INFORMATION ON MATERIALS

As soon as possible, no more than five days after the Contractor has received a notice to proceed with the work, the Contractor shall furnish the County a material list (shop drawings) of all materials to be used for this project. This is to be done for the purpose of the Engineer's review and assurance that the specified materials are being used and that the Contractor is aware of the manufacturer's instruction. This requirement may be waived by the County if the Contractor has submitted this information on previous projects.

D.10 SCHEDULE OF VALUES

The Contractor shall submit a Schedule of Values within five days of request or Notice to Proceed date, whichever comes first. The Schedule shall include quantities and prices of items equaling the Total Bid Price and will subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work. Upon request of the County, the Contractor shall support the values with data which will substantiate their correctness.

D.11 MONITORING THE WORK

The Work specified herein shall be performed by the Contractor in accordance with this Bid Document. All materials and every process and operation shall be subject to inspection at all times, and the County shall have free access to all parts of the work. Every facility desired for inspecting the workmanship and testing the qualities of materials shall be furnished by the Contractor. Rejected materials shall be removed promptly from the vicinity of the work; and workmanship or processes deemed to be faulty shall be corrected immediately upon request. The Contractor shall remove, reconstruct, replace and make good any defective work as may be directed, without charge.

D.12 MAINTENANCE AND GUARANTEE

The Contractor shall guarantee all work furnished under this contract against any defects in workmanship and materials for a period of three years following the date of final acceptance of the Work by the County. Under this guarantee, the Contractor hereby agrees to make good without delay, at his own expense, any failure of any part of the work due to faulty materials or manufacture, construction or installation, and further, shall make good any damages to any part of the work caused by such failure.

D.13 PRESERVATION AND RESTORATION OF PROPERTY

All facilities on public or private property which are damaged under construction or removed by the Contractor for the convenience of the work, shall be repaired or replaced in a manner acceptable to the County prior to the final acceptance of the work. All costs shall be borne by the Contractor.

The Contractor shall protect the existing structures during the entire construction period from any damages which may be caused by his preparations or equipment. In the event that the Contractor's operations result in damage to the structure, the Contractor shall repair all damages in a manner acceptable to the County at no cost to the County.

D.14 POLLUTION CONTROL / EROSION CONTROL

The Contractor shall not pollute the waters with fuels, oil, bitumens, insecticides, or other similar materials harmful to fish, shellfish, or wildlife, or materials which may be detrimental to outdoor recreation. The Contractor shall arrange his/her operation to minimize siltation and bank erosion on construction sites and on existing or proposed water courses and drainage ditches. Contractor shall be responsible for removing any siltation deposits and correct any erosion problems as directed by the Engineer which results from his construction operations.

D.15 HURRICANE PREPAREDNESS PLAN

Contractor shall develop a Hurricane Preparedness Plan that shall identify measures to be taken by the Contractor to protect the County property in the wake of an approaching hurricane. Hurricane Protection Plan shall also identify measures to be taken to maintain access to private property adjacent to the project and to maintain drainage. The Hurricane Preparedness Plan is to be submitted along with preconstruction submittals.

D.16 SAFETY AND HEALTH STANDARDS

It is a condition of this contract and shall be made a condition of each sub-contract entered into pursuant to this Contract, that the Contractor and Sub-Contractor shall not require any laborer or mechanic employee in performance of the contract to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous to his/her health, or safety as determined under construction safety and health standards (Code of Federal Regulations) promulgated by the United States Secretary of Labor.

Contractor shall provide adequate sanitary convenience for the use of persons employed on the Work which shall be properly secluded from public observation. The unit(s) shall be constructed and maintained by the Contractor in such a manner and at such points as not to cause a nuisance and their use shall be strictly enforced. Upon completion of Work, the units shall be removed from the premises, leaving all clean and free from debris.

D.17 TRAFFIC

Contractor must schedule work in order that residents on the streets involved are not denied vehicle access to their houses for longer than absolutely necessary. Contractor shall notify residents, as well as the Owner, at least 48 hours prior to blocking driveways. They shall also be informed of the expected length of time of the blockage. Written consent of the Owner is required if roads under construction are to be closed for more than 12 hours or driveways are to be blocked for more than 72 hours.

D.18 DRIVEWAY AND STREETS

The Contractor shall replace all driveways removed from the project; however, these driveways must be existing before the award of the Contract. Replacing driveways shall be in accordance with Sections 125-9 and 125-12.6 - FDOT Standard Specifications for Road and Bridge Construction.

D.19 PROJECT IDENTIFICATION AND SIGNS

The Contractor shall be responsible for furnishing, installing, and maintaining two County project identification signs and their removal upon completion of construction. The identification signs shall not be less than 32 square feet (3 square meters) in area. The signs shall be painted with its graphic content to include:

a.) Title of Project
b.) Name of Owner
c.) Names & Titles of authorities, as directed by Owner
d.) Prime Contractor
e.) Major Subcontractors
f.) Construction Cost

The signs shall be erected prior to commencement of work at lighted locations of high public visibility adjacent to the main entrance at each end of the project as approved by the Engineer and the Owner.

The signs shall be a minimum of 8 ft in width and 4 ft in height and placed in accordance with Manatee County Land Development Code, Ordinance 90-01, Section 724, Signs and Section 713, Visibility Triangles. Signs shall be constructed of high density ¾" exterior plywood without waves or buckles. Signs shall be mounted and braced with pressure treated lumber as necessary and maintained in a presentable condition for the duration of this project. Hardware shall be galvanized. The sign surfaces shall be of exterior softwood plywood with medium density overlay.

Paint shall be constructed with materials to resist weathering and fading during the construction period. Painting shall be performed by experienced professionals. The paint shall be exterior type enamel, white background with black lettering professionally done, as approved by the Owner. Lettering (professionally done) shall be:

D.19 PROJECT IDENTIFICATION AND SIGNS(Continued)

a.) 5" News Gothic Bold
b.) 3" News Gothic
c.) 1.5" Brush Script
d.) 2.5" News Gothic

D.20 EXISTING UTILITITES

Water lines, sewer lines, telephone, cable television or power lines, gas lines or any other utilities shall be relocated when necessary to facilitate all roadway and drainage construction. The Contractor shall be responsible for notifying all utility companies involved for relocation of their facilities and coordinating activities accordingly. Any damages to these utilities will be a responsibility of the Contractor and repairs or other modifications will not be paid for by the County. The Contractor shall be responsible for determining the exact location of utilities shown in the plans during construction.

Any representations of utilities will be shown on the plans from information received from the various utility owners. The locations or elevations of utilities are not represented to be exact and are shown for the convenience of the Contractor. The Contractor shall contact the utility owner concerned for any available additional information and coordinate his construction activities accordingly, unless otherwise stipulated in the Special Conditions.

Plans and schedules for all private utilities are not available at this time. All private utilities will be requested to provide plans and schedules at the pre-construction meeting. The contractor will be responsible for coordinating construction activities accordingly.

SECTION 00300
BID FORM
(Submit In Triplicate)

For: Norma Lloyd Park Improvements – Phase 1, Bradenton, FL

TOTAL BID PRICE "A": $ _____ Based on a Completion Time of **60** Calendar Days

TOTAL BID PRICE "B": $ _____ Based on a Completion Time of **90** Calendar Days

Two schedules for Completion of the Work shall be considered. Each bid for completion by the specified stated time shall be offered as a separate "Total Bid Price". The County has the sole authority to select the bid based on the Completion Time which is in the best interest of the County. Only one award shall be made.

We, the undersigned, hereby declare that we have carefully reviewed the bid documents, and with full knowledge and understanding of the aforementioned herewith, submit this bid, meeting each and every specification, term, and condition contained in the Invitation for Bids.

We understand that the bid technical specifications, terms, and conditions in their entirety shall be made a part of any agreement or contract between Manatee County and the successful bidder. Failure to comply shall result in contract default, whereupon, the defaulting contractor shall be required to pay for any and all re-procurement costs, damages, and attorney fees as incurred by the County.

Communications concerning this Bid shall be addressed as follows:

Person's Name: _____

Address _____ Phone: _____

Date: _____ FL Contractor License # _____

Is Bidder a WBE/MBE Vendor? _____ Certification # _____

COMPANY NAME: _____

AUTHORIZED SIGNATURE (S): _____

_____
Name and Title of Above Signer (s)

CO. MAILING ADDRESS: _____

_____

STATE OF INCORPORATION: _____ (if applicable)

TELEPHONE: (____) _____ FAX: (____) _____

Acknowledge Addendum Nos. _____ Dated: _____
Acknowledge Addendum Nos. _____ Dated: _____

BID FORM

(Submit in Triplicate)

NORMA LLOYD PARK IMPROVEMENTS - PHASE I - BRADENTON, FL
BID 'A' - IFB08-2952-OV; BASED ON COMPLETION TIME OF 60 CALENDAR DAYS

ITEM	DESCRIPTION	EST. QTY.	U/M	UNIT PRICE	EXTENDED PRICE
DRAINAGE POND					
1	Remove T-Ball Field (Bleachers, Batting Cage, Fencing)	1	LS	$	$
2	Grading/Earthwork (Including Retention Pond Excavation	1	LS	$	$
3	Drainage Piping and Structures	1	LS	$	$
Note: Assumes stockpiling on site of excess fill					
UTILITIES					
4	Water Service	1	LS	$	$
5	Electric Service (Site)	1	LS	$	$
SPORTS FIELD					
6	Mobilization	1	LS	$	$
7	Install Construction Fencing with Two Gates	2,450	LF	$	$
8	Remove Asphalt Roundabout	480	SY	$	$
9	Remove Existing Trees	18	EA	$	$
10	Remove Baseball Field, Bleachers, Dugout and Masonry Buildings complete	1	LS	$	$
11	Remove Baseball Field Light Fixutres	7	EA	$	$
12	Grubbing	1	LS	$	$
13	Grading / Earthwork	1	LS	$	$
14	Goal and Flags	1	LS	$	$
15	Lights for Soccer Field (include lights, conduit and electric for 5 lights)	1	LS	$	$
16	Irrigation-Rotor System (includes booster pump, backflow and meter complete)	1	LS	$	$
17	Tifway 419 Sod Plugs for Soccer Fields	1	LS	$	$
18	Discretionary Work	1	LS		$40,000.00
Total Base Bid:					$

BIDDER:_____

BID FORM

(Submit in Triplicate)

NORMA LLOYD PARK IMPROVEMENTS - PHASE I - BRADENTON, FL
BID 'A' - IFB08-2952-OV; BASED ON COMPLETION TIME OF 60 CALENDAR DAYS

ITEM	DESCRIPTION	EST. QTY.	U/M	UNIT PRICE	EXTENDED PRICE
	ALTERNATE PARKING LOT LAYOUT				
1	Mobilization	1	LS	$	$
2	Install Construction Fencing with Two Vehicular Gates	2,450	LF	$	$
3	Remove Existing Trees	46	EA	$	$
4	Remove Asphalt Entry Drive and Parking	1,300	SY	$	$
5	Remove Existing Bollards	18	EA	$	$
6	Remove Baseball Field Light Fixtures	1	EA	$	$
7	Remove Concrete Sidewalk (225 LF) and Curbing along 24th Avenue	1	LS	$	$
8	Remove Existing Fence	860	LF	$	$
9	Grubbing	1	LS	$	$
10	Grading / Earthwork	1	LS	$	$
11	Concrete Walk	13,050	SF	$	$
12	Asphalt Parking Area	3,340	SY	$	$
13	Wooden Bollards (per attached detail)	155	EA	$	$
14	Sod for Parking Lot Spaces	18,700	SF	$	$
15	Wheel Stops	63	EA	$	$
16	Relocate Utility Poles	3	EA	$	$
17	Handicapped Parking Sign	3	EA	$	$
18	Striping Parking Area	1	LS	$	$
19	Handicapped Parking Symbol	6	EA	$	$
20	Conduit for Lightpoles for Parking Area	1	LS	$	$
21	Sod	42,300	SF	$	$
22	Parking Lot Irrigation	1	LS	$	$
TOTAL ALTERNATE BID					$
TOTAL BID PRICE "A" (Based on 60 Day Completion time)					$

BIDDER:_____

BID FORM - SUBCONTRACTOR PERCENTAGE

(Submit in Triplicate)

NORMA LLOYD PARK IMPROVEMENTS - PHASE I - BRADENTON, FL
BID 'A' - IFB08-2952-OV; BASED ON COMPLETION TIME OF 60 CALENDAR DAYS

ITEM NO.	DESCRIPTION	WORK BY SUBCONTRACTOR		DESCRIPTION OF WORK BY CONTRACTOR
DRAINAGE POND		%	MBE/WBE	
1	Remove T-Ball Field (Bleachers, Batting Cage, Fencing)			
2	Grading/Earthwork (Including Retention Pond Excavation			
3	Drainage Piping and Structures			
Note: Assumes stockpiling on site of excess fill				
UTILITIES				
4	Water Service			
5	Electric Service (Site)			
SPORTS FIELD				
6	Mobilization			
7	Install Construction Fencing with Two Gates			
8	Remove Asphalt Roundabout			
9	Remove Existing Trees			
10	Remove Baseball Field, Bleachers, Dugout and Masonry Buildings complete			
11	Remove Baseball Field Light Fixutres			
12	Grubbing			
13	Grading / Earthwork			
14	Goal and Flags			
15	Lights for Soccer Field (include lights, conduit and electric for 5 lights)			
16	Irrigation-Rotor System (includes booster pump, backflow and meter complete)			
17	Tifway 419 Sod Plugs for Soccer Field			

BIDDER: _____

BID FORM - SUBCONTRACTOR PERCENTAGE

(Submit in Triplicate)

NORMA LLOYD PARK IMPROVEMENTS - PHASE I - BRADENTON, FL
BID 'A' - IFB08-2952-OV; BASED ON COMPLETION TIME OF 60 CALENDAR DAYS

ITEM NO.	DESCRIPTION	WORK BY SUBCONTRACTOR		DESCRIPTION OF WORK BY
	ALTERNATE PARKING LOT LAYOUT			
1	Mobilization			
2	Install Construction Fencing with Two Vehicular Gates			
3	Remove Existing Trees			
4	Remove Asphalt Entry Drive and Parking			
5	Remove Existing Bollards			
6	Remove Baseball Field Light Fixtures			
7	Remove Concrete Sidewalk (225 LF) and Curbing along 24th Avenue			
8	Remove Existing Fence			
9	Grubbing			
10	Grading / Earthwork			
11	Concrete Walk			
12	Asphalt Parking Area			
13	Wooden Bollards (per attached detail)			
14	Sod for Parking Lot Spaces			
15	Wheel Stops			
16	Relocate Utility Poles			
17	Handicapped Parking Sign			
18	Striping Parking Area			
19	Handicapped Parking Symbol			
20	Conduit for Lightpoles for Parking Area			
21	Sod			
22	Parking Lot Irrigation			
	BID "A" Based on 60 Calendar Days Completion Time			

This is a duplication of the bid items where the Bidder shall state the percentage of work (of each item listed) and a description of the work which shall be performed by a subcontractor.

BIDDER: _____

BID FORM

(Submit in Triplicate)

NORMA LLOYD PARK IMPROVEMENTS - PHASE I - BRADENTON, FL
BID 'B" - IFB08-2952-OV; BASED ON COMPLETION TIME OF 90 CALENDAR DAYS

ITEM	DESCRIPTION	EST. QTY.	U/M	UNIT PRICE	EXTENDED PRICE
DRAINAGE POND					
1.	Remove T-Ball Field (Bleachers, Batting Cage, Fencing)	1	LS	$	$
2.	Grading/Earthwork (Including Retention Pond Excavation	1	LS	$	$
3.	Drainage Piping and Structures	1	LS	$	$
Note: Assumes stockpiling on site of excess fill					
UTILITIES					
4.	Water Service	1	LS	$	$
5.	Electric Service (Site)	1	LS	$	$
SPORTS FIELD					
6.	Mobilization	1	LS	$	$
7.	Install Construction Fencing with Two Gates	2,450	LF	$	$
8.	Remove Asphalt Roundabout	480	SY	$	$
9.	Remove Existing Trees	18	EA	$	$
10.	Remove Baseball Field, Bleachers, Dugout and Masonry Buildings complete	1	LS	$	$
11.	Remove Baseball Field Light Fixutres	7	EA	$	$
12.	Grubbing	1	LS	$	$
13.	Grading / Earthwork	1	LS	$	$
14.	Goal and Flags	1	LS	$	$
15.	Lights for Soccer Field (include lights, conduit and electric for 5 lights)	1	LS	$	$
16.	Irrigation-Rotor System (includes booster pump, backflow and meter complete)	1	LS	$	$
17.	Tifway 419 Sod Plugs for Soccer Fields	1	LS	$	$
18.	Discretionary Work	1	LS		$40,000.00
Total Base Bid:					$

BIDDER: _____

BID FORM

(Submit in Triplicate)

NORMA LLOYD PARK IMPROVEMENTS - PHASE I - BRADENTON, FL
BID 'B" - IFB08-2952-OV; BASED ON COMPLETION TIME OF 90 CALENDAR DAYS

ITEM	DESCRIPTION	EST. QTY.	U/M	UNIT PRICE	EXTENDED PRICE
	ALTERNATE PARKING LOT LAYOUT				
1	Mobilization	1	LS	$	$
2	Install Construction Fencing with Two Vehicular Gates	2,450	LF	$	$
3	Remove Existing Trees	46	EA	$	$
4	Remove Asphalt Entry Drive and Parking	1,300	SY	$	$
5	Remove Existing Bollards	18	EA	$	$
6	Remove Baseball Field Light Fixtures	1	EA	$	$
7	Remove Concrete Sidewalk (225 LF) and Curbing along 24th Avenue	1	LS	$	$
8	Remove Existing Fence	860	LF	$	$
9	Grubbing	1	LS	$	$
10	Grading / Earthwork	1	LS	$	$
11	Concrete Walk	13,050	SF	$	$
12	Asphalt Parking Area	3,340	SY	$	$
13	Wooden Bollards (per attached detail)	155	EA	$	$
14	Sod for Parking Lot Spaces	18,700	SF	$	$
15	Wheel Stops	63	EA	$	$
16	Relocate Utility Poles	3	EA	$	$
17	Handicapped Parking Sign	3	EA	$	$
18	Striping Parking Area	1	LS	$	$
19	Handicapped Parking Symbol	6	EA	$	$
20	Conduit for Lightpoles for Parking Area	1	LS	$	$
21	Sod	42,300	SF	$	$
22	Parking Lot Irrigation	1	LS	$	$
	TOTAL ALTERNATE BID				$
	TOTAL BID PRICE "B" (Based on 90 Day Completion time)				$

BIDDER: _____

BID FORM - SUBCONTRACTOR PERCENTAGE

(Submit in Triplicate)

NORMA LLOYD PARK IMPROVEMENTS - PHASE I - BRADENTON, FL
BID "B" - IFB08-2952-OV; BASED ON COMPLETION TIME OF 90 CALENDAR DAYS

ITEM NO.	DESCRIPTION	WORK BY SUBCONTRACTOR		DESCRIPTION OF WORK BY CONTRACTOR
DRAINAGE POND		%	MBE/WBE	
1	Remove T-Ball Field (Bleachers, Batting Cage, Fencing)			
2	Grading/Earthwork (Including Retention Pond Excavation			
3	Drainage Piping and Structures			
Note: Assumes stockpiling on site of excess fill				
UTILITIES				
4	Water Service			
5	Electric Service (Site)			
SPORTS FIELD				
6	Mobilization			
7	Install Construction Fencing with Two Gates			
8	Remove Asphalt Roundabout			
9	Remove Existing Trees			
10	Remove Baseball Field, Bleachers, Dugout and Masonry Buildings complete			
11	Remove Baseball Field Light Fixtures			
12	Grubbing			
13	Grading / Earthwork			
14	Goal and Flags			
15	Lights for Soccer Field (include lights, conduit and electric for 5 lights)			
16	Irrigation-Rotor System (includes booster pump, backflow and meter complete)			
17	Tifway 419 Sod Plugs for Soccer Field			

BIDDER: _____

BID FORM - SUBCONTRACTOR PERCENTAGE

(Submit in Triplicate)

NORMA LLOYD PARK IMPROVEMENTS - PHASE I - BRADENTON, FL
BID "B" - IFB08-2952-OV; BASED ON COMPLETION TIME OF 90 CALENDAR DAYS

ITEM NO.	DESCRIPTION	WORK BY SUBCONTRACTOR		DESCRIPTION OF WORK BY CONTRACTOR
ALTERNATE PARKING LOT LAYOUT				
1	Mobilization			
2	Install Construction Fencing with Two Vehicular Gates			
3	Remove Existing Trees			
4	Remove Asphalt Entry Drive and Parking			
5	Remove Existing Bollards			
6	Remove Baseball Field Light Fixtures			
7	Remove Concrete Sidewalk (225 LF) and Curbing along 24th Avenue			
8	Remove Existing Fence			
9	Grubbing			
10	Grading / Earthwork			
11	Concrete Walk			
12	Asphalt Parking Area			
13	Wooden Bollards (per attached details)			
14	Sod for Parking Lot Spaces			
15	Wheel Stops			
16	Relocate Utility Poles			
17	Handicapped Parking Sign			
18	Stiping Parking Area			
19	Handicapped Parking Symbol			
20	Conduit for Lightpoles for Parking Areas			
21	Sod			
22	Parking Lot Irrigation			
	BID "A" Based on 90 Calendar Days Completion Time			

This is a duplication of the bid items where the Bidder shall state the percentage of work (of each item listed) and a description of the work which shall be performed by a subcontractor.

BIDDER: _____

THE FLORIDA TRENCH SAFETY ACT

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR BY AN OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This Sworn Statement is submitted with IFB No. 08-2952-OV
2. This Sworn Statement is submitted by _____, whose business address is _____ and, if applicable, its Federal Employer Identification Number (FEIN) is _____. If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement _____.

3. Name of individual signing this Sworn Statement is:_____,

   whose relationship to the above entity is_____.

4. The Trench Safety Standards that will be in effect during the construction of this project shall include, but are not limited to: Laws of Florida, Chapters 90-96, TRENCH SAFETY ACT, and OSHA RULES AND REGULATIONS 29 CFR 1926.650 Subpart P, effective October 1, 1990.

5. The undersigned assures that the entity will comply with the applicable Trench Safety Standards and agrees to indemnify and hold harmless the Owner and Engineer, and any of their agents or employees from any claims arising from the failure to comply with said standard.

6. The undersigned has appropriated the following costs for compliance with the applicable standards:

	Trench Safety Measure (Description)	Units of Measure (LF, SY)	Unit Quantity	Unit Cost	Extended Cost
a.	_____	_____	_____	$_____	$_____
b.	_____	_____	_____	$_____	$_____
c.	_____	_____	_____	$_____	$_____
d.	_____	_____	_____	$_____	$_____
e.	_____	_____	_____	$_____	$_____

7. The undersigned intends to comply with these standards by instituting the following procedures:

   _____

   _____

   _____.

THE UNDERSIGNED, in submitting this Bid, represents that they have reviewed and considered all available geotechnical information and made such other investigations and tests as they may deem necessary to adequately design the trench safety system(s) to be utilized on this project.

_____
(AUTHORIZED SIGNATURE / TITLE)

SWORN to and subscribed before me this ___ day of _____, 20___.
(impress official seal)

_____
Notary Public, State of Florida
My commission expires: _____

SECTION 00430

CONTRACTOR'S QUESTIONNAIRE

(Submit in Triplicate)

The Bidder warrants the truth and accuracy of all statements and answers herein contained. (Include additional sheets if necessary.)

THIS QUESTIONNAIRE MUST BE COMPLETED AND SUBMITTED WITH YOUR BID.

1. LICENSE # and COMPANY'S NAME: _____

   CO. PHYSICAL ADDRESS: _____

   TELEPHONE NUMBER: (___) _____ FAX: (____) _____

2. Bidding as an individual: ____ a partnership: ____ a corporation: ____ a joint venture: _____

3. If a partnership: list names and addresses of partners; if a corporation: list names of officers, directors, shareholders, and state of incorporation; if joint venture: list names and address of venturers and the same if any venturer is a corporation for each such corporation, partnership, or joint venture:

   _____

   _____

   _____

4. Your organization has been in business (under this firm's name) as _____

   for how many years? _____

5. Describe and give the date and owner of the last three government projects you've completed which are similar in cost, type, size, and nature as the one proposed (for a public entity). Include contact name and phone number:

   _____

   _____

6. Have you ever been assessed liquidated damages under a contract during the past five (5) years? If so, state when, where (contact name, address, and phone number) and why.

   _____

   _____

7. Have you ever failed to complete work awarded to you? If so, state when, where (contact name, address, phone number) and why?

   _____

   _____

   _____

8. Have you ever been debarred or prohibited from bidding on a governmental entity's construction project? If yes, name the entity and describe the circumstances:

_____

_____

_____

9. Name three individuals, governmental entities, or corporations for which you have performed similar work and to which you refer. Include contact name and phone number:

1. _____

2. _____

3. _____

10. What specific steps have you taken to examine the physical conditions at or contiguous to the site, including but not limited to, the location of existing underground facilities? Have you visited the site? _____

_____

_____

_____

11. What specific physical conditions, including, but not limited to, the location of existing underground facilities have you found which will, in any manner, affect cost, progress, performance, or finishing of the work?

_____

_____

_____

12. Will you subcontract any part of this Work? If so, describe which major portion(s):

_____

_____

13. If any, list (with contract amount) WBE/MBE to be utilized:

_____

_____

14. What equipment do you own to accomplish this Work?

_____

_____

_____

15. What equipment will you purchase/rent for the Work? (specify which)

_____

_____

_____

16. List the following in connection with the Surety which is providing the Bond(s):

Surety's Name: _____

Surety's Address: _____

Name, address and phone number of Surety's resident agent for service of process in Florida:

_____

_____

_____

Phone: (_____) _____

SECTION 00491
Drug Free Work Place Certification

SWORN STATEMENT PURSUANT TO RESOLUTION R-01-36 SECTION 4, E (1) (a)
MANATEE COUNTY PURCHASING POLICIES, ON DRUG FREE WORK PLACES

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.

This sworn statement is submitted to the Manatee County Board of County Commissioners by_____
[print individual's name and title]

_____ for _____
[print name of entity submitting sworn statement]

whose business address is_____

and (if applicable) its Federal Employer Identification Number (FEIN) is _____(if the entity has no

FEIN, include the Social Security Number of the individual signing this sworn statement: _____.)

I understand that no person or entity shall be awarded or receive a county contract for public improvements, procurement of goods or services (including professional services) or a county lease, franchise, concession or management agreement, or shall receive a grant of county monies unless such person or entity has submitted a written certification to the County that it will provide a drug free work place by:

(1) providing a written statement to each employee notifying such employee that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance as defined by 893.02(4), Florida Statutes, as the same may be amended from time to time, in the person's or entity's work place is prohibited specifying the actions that will be taken against employees for violation of such prohibition. Such written statement shall inform employees about:

(i) the dangers of drug abuse in the work place;

(ii) the person's or entity's policy of maintaining a drug free environment at all its work places, including but not limited to all locations where employees perform any task relating to any portion of such contract, business transaction or grant;

(iii) any available drug counseling, rehabilitation, and employee assistance programs; and

(iv) the penalties that may be imposed upon employees for drug abuse violations.

(2) Requiring the employee to sign a copy of such written statement to acknowledge his or her receipt of same and advice as to the specifics of such policy. Such person or entity shall retain the statements signed by its employees. Such person or entity shall also post in a prominent place at all of its work places, a written statement of its policy containing the foregoing elements (i) through (iv).

(3) Notifying the employee in the statement required by subsection (1) that as a condition of employment the employee will:

(i) abide by the terms of the statement; and

(ii) notify the employer of any criminal drug statute conviction for a violation occurring in the work place no later than five (5) days after such a conviction.

(4) Notifying the County within ten (10) days after receiving notice under subsection (3) from an employee or otherwise receiving actual notice of such conviction.

(5) Imposing appropriate personnel action against such employee up to and including termination; or requiring such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a federal, state, or local health, law enforcement, or other appropriate agency.

(6) Making a good faith effort to continue to maintain a drug free work place through implementation of sections (1) through (5) stated above.

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR MANATEE COUNTY IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT ANY CONTRACT OR BUSINESS TRANSACTION SHALL PROVIDE FOR SUSPENSION OF PAYMENTS, OR TERMINATION, OR BOTH, IF THE CONTRACTING OFFICER OR THE COUNTY ADMINISTRATOR DETERMINES THAT:

(1) Such person or entity has made false certification.

(2) Such person or entity violates such certification by failing to carry out the requirements of sections (1), (2), (3), (4), (5), or (6) or Resolution R-01-36 Section 4, E (1) (a) or

(3) Such a number of employees of such person or entity have been convicted of violations occurring in the work place as to indicate that such person or entity has failed to make a good faith effort to provide a drug free work place as required by Resolution R-01-36 Section 4, E (1) (a).

_____
[Signature]

STATE OF FLORIDA
COUNTY OF _____

Sworn to and subscribed before me this _____ day of _____, 20___ by_____.

Personally known_____ OR Produced identification _____
[Type of identification]

_____ My commission expires: _____
Notary Public Signature

[Print, type or stamp Commissioned name of Notary Public]

SECTION 00491

PUBLIC CONTRACTING AND ENVIRONMENTAL CRIMES CERTIFICATION

SWORN STATEMENT PURSUANT TO ARTICLE 6,
MANATEE COUNTY PURCHASING CODE

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.

This sworn statement is submitted to the Manatee County Board of County Commissioner by_____
[print individual's name and title]

_____ for_____
[print name of entity submitting sworn statement]

whose business address is: _____

and (if applicable) its Federal Employer Identification Number (FEIN) is _____. If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement:_____

I understand that no person or entity shall be awarded or receive a county contract for public improvements, procurement of goods or services (including professional services) or a county lease, franchise, concession or management agreement, or shall receive a grant of county monies unless such person or entity has submitted a written certification to the County that it has not:

(1) been convicted of bribery or attempting to bribe a public officer or employee of Manatee County, the State of Florida, or any other public entity, including, but not limited to the Government of the United States, any state, or any local government authority in the United States, in that officer's or employee's official capacity; or

(2) been convicted of an agreement or collusion among bidders or prospective bidders in restraint of freedom of competition, by agreement to bid a fixed price, or otherwise; or

(3) been convicted of a violation of an environmental law that, in the sole opinion of the County's Purchasing Director, reflects negatively upon the ability of the person or entity to conduct business in a responsible manner; or

(4) made an admission of guilt of such conduct described in items (1), (2) or (3) above, which is a matter of record, but has not been prosecuted for such conduct, or has made an admission of guilt of such conduct, which is a matter of record, pursuant to formal prosecution. An admission of guilt shall be construed to include a plea of nolo contendere; or

(5) where an officer, official, agent or employee of a business entity has been convicted of or has admitted guilt to any of the crimes set forth above on behalf of such and entity and pursuant to the direction or authorization of an official thereof (including the person committing the offense, if he is an official of the business entity), the business shall be chargeable with the conduct herein above set forth. A business entity shall be chargeable with the conduct of an affiliated entity, whether wholly owned, partially owned, or one which has common ownership or a common Board of Directors. For purposes of this Form, business entities are affiliated if, directly or indirectly, one business entity controls or has the power to control another business entity, or if an individual or group of individuals controls or has the power to control both entities. Indicia of control shall include, without limitation, interlocking management or ownership, identity of interests among family members, shared organization of a business entity following the ineligibility of a business entity under this Article, or using substantially the same management, ownership or principles as the ineligible entity.

Any person or entity who claims that this Article is inapplicable to him/her/it because a conviction or judgment has been reversed by a court of competent jurisdiction, shall prove the same with documentation satisfactory to the County's Purchasing Director. Upon presentation of such satisfactory proof, the person or entity shall be allowed to contract with the County.

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR MANATEE COUNTY IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT ANY CONTRACT OR BUSINESS TRANSACTION SHALL PROVIDE FOR SUSPENSION OF PAYMENTS, OR TERMINATION, OR BOTH, IF THE CONTRACTING OFFICER OR THE COUNTY ADMINISTRATOR DETERMINES THAT **SUCH PERSON OR ENTITY HAS MADE FALSE CERTIFICATION.**

_____
[Signature]

STATE OF FLORIDA
COUNTY OF _____

Sworn to and subscribed before me this _____ day of _____, 20____ by _____.
Personally known _____ OR Produced identification _____
[Type of identification]

_____ My commission expires _____
Notary Public Signature

_____
[Print, type or stamp Commissioned name of Notary Public]

Signatory Requirement - In the case of a business entity other than a partnership or corporation, this affidavit shall be executed by an authorized agent of the entity. In the case of a partnership, this affidavit shall be executed by the general partner(s). In the case of a corporation, this affidavit shall be executed by the corporate president.

FORM OF AGREEMENT
BETWEEN THE
COUNTY OF MANATEE, FLORIDA
AND THE CONTRACTOR AS IDENTIFIED BELOW
ON THE BASIS OF A STIPULATED UNIT COST CONTRACT PRICE

THIS AGREEMENT is made and entered into by and between the COUNTY OF MANATEE, a political subdivision of the state of Florida, hereinafter referred to as the "OWNER" and _____ hereinafter referred to as the "CONTRACTOR," duly authorized to transact business in the state of Florida, with offices located at _____.

Article 1. WORK

CONTRACTOR shall furnish all labor, materials, supplies, and other items required to complete the Work for IFB No. **#08-2952-OV Norma Lloyd Park – Phase 1** in strict accordance with specifications and any duly authorized subsequent addenda thereto, all of which are made a part hereof.

Article 2. ENGINEER

The County of Manatee, Project Management Department, is responsible as the OWNER and IBI Group, Inc. hereinafter referred to as "ENGINEER," designed this project and is responsible for technical/engineering reviews and decisions. The ENGINEER is a member of the OWNER'S project management team which is collectively responsible in ensuring the Work is completed in accordance with the Contract Documents. All communications involving this project will be addressed to:

County of Manatee
Property Management Department
Attn: Tom Yarger, Project Manager
IFB #08-2952-OV
1112 Manatee Avenue West
Bradenton, Florida 34205 Phone:
Phone: 941-749-3003

Suzanne C. Thompson, RLA
IBI Group, Inc.
1519 Main Street
Sarasota, FL 34236
Phone: 941-954-1718

Where the terms ENGINEER and/or OWNER are used in the Contract Documents, it shall mean the OWNER'S project management team.

Article 3. CONTRACTOR'S REPRESENTATIONS

In order to induce OWNER to enter into this Agreement, CONTRACTOR makes the following representations:

3.1 CONTRACTOR has familiarized itself with the nature and extent of the Bid Documents, Work, site, locality and all local conditions and laws and regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

3.2 CONTRACTOR has studied carefully all drawings of the physical conditions upon which CONTRACTOR is entitled to rely.

3.3 CONTRACTOR has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests, reports and studies which pertain to the physical conditions at or contiguous to the site or which otherwise may affect the cost, progress, performance or furnishing of the Work as CONTRACTOR considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Bid Documents; and no additional examinations, investigations, explorations, tests, reports, studies or similar information or data are or will be required by CONTRACTOR for such purposes.

3.4 CONTRACTOR has reviewed and checked all information and data shown or indicated on the Bid Documents with respect to existing underground facilities at or contiguous to the site and assumes responsibility for the accurate location of said underground facilities. Any additional examinations, investigations, explorations, tests, reports, studies or similar information or data in respect of said underground facilities conducted by the CONTRACTOR will be done at the CONTRACTOR'S expense.

3.5 CONTRACTOR has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Bid.

3.6 CONTRACTOR has given OWNER written notice of all conflicts, errors or discrepancies that have been discovered in the Bid Documents and the written resolution thereof by OWNER is acceptable to CONTRACTOR.

3.7 CONTRACTOR shall schedule and perform the Work subject to OWNER'S approval and shall hold OWNER harmless from all liabilities incurred due to CONTRACTOR'S failure to coordinate with the OWNER.

Article 4. CONTRACT DOCUMENTS

The Contract Documents which comprise the entire Agreement between OWNER and CONTRACTOR concerning the Work consist of the following:

4.1 This Agreement (and Bid Document IFB 08-2952OV by reference)

4.2 Performance and/or other Bonds and Insurance Certificate(s), where applicable

4.3 Drawings (not attached)

4.4 Addenda numbers ____ to ___ inclusive.

4.5 CONTRACTOR'S Bid Form and any other information submitted by Contractor prior to award.

4.6 The following which may be delivered or issued after the effective date of the Agreement and are not attached hereto: all written Change Orders and other documents amending, modifying, or supplementing the Contract Documents.

4.7 The documents listed in paragraphs above are attached to this Agreement (except as noted otherwise above). There are no Contract Documents other than those listed above in this Article 4.

Article 5. MISCELLANEOUS

5.1 Terms used in this Agreement are defined in Article 1 of the General Conditions.

5.2 No assignment by a party hereto of any rights under or interest in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law); and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignee from any duty or responsibility under the Contract Documents.

5.3 OWNER and CONTRACTOR each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect of all covenants, agreements and obligations contained in the Contract Documents.

The OWNER will pay, and the CONTRACTOR will accept in full consideration for the performance of the Work **(IFB No. 08-2952-OV Norma Lloyd Park Improvements - Phase 1),** subject to additions and deductions as provided therein, the sum of _____Dollars and _____Cents ($_____) for Bid "___" based on a Completion Time of ___calendar days and the sum of $_____ as liquidated damages for each calendar day of delay.

_____
CONTRACTOR

BY: _____
Signature

_____
Type Name and Title of Signer

The foregoing instrument was acknowledged before me this ___ day of _____, 2008, by _____, who is personally known to me or who has produced _____ as identification.

(impress official seal)

_____
Notary Public, State of Florida

My commission expires: _____

APPROVED, with a quorum present and voting this _____ day of _____, 2008.

ATTEST: R.B. SHORE
Clerk of the Circuit Court

_____

COUNTY OF MANATEE, FLORIDA by its
Board of County Commissioners

BY: _____
CHAIRMAN

APPLICATION FOR PAYMENT

Project: _____
From: _____ To: _____

Request No. _____ Project No. _____
Purchase Order Number: _____
County Bid No.: _____
Consultant: _____

CONTRACT PAYMENT SUMMARY

Original contract amount:				$
Change order(s):				
Change order summary:				
Number	Date Approved	Additive	Deductive	
	SAMPLE SHEET ONLY			
	OBTAIN CURRENT VERSION OF FORM			
	FROM PROJECT MANAGER			
SUBTOTALS:				
Net change order subtotal (Additive less Deductive):				$
Current Contract Amount (CCA): (Original Amount + Change Order(s))				$
		Previous Status	Current Status	
Value of the Work in Place		$	$	
Value of Stored Materials		$	$	
Total Earned ($ and % of CCA)		$	$	%
Retainage ($ and % of CCA)		$	$	%
Net Earned (Total earned minus retainage)				$
TOTAL PREVIOUS PAYMENTS				$
AMOUNT DUE THIS PAYMENT (Net Earned minus Previous Payments)				$

CONTRACTOR'S AFFIDAVIT OF NOTICE

CERTIFICATE: The undersigned CONTRACTOR certifies that all items and amounts shown on this application for payment are on account of work performed, materials supplied and/or materials stored on site and paid for by Contractor in accordance with the Contract Documents with due consideration for previous Payment(s), if any, received by the Contractor from the County, and that the current payment shown is now due.

NOTARY:

State of Florida County of _____

Sworn to (or affirmed) and subscribed before me this _____ **day of** _____, _____, **by**

_____
(Name of person giving notice)

_____
(Signature of Notary Public - State of Florida)
Print, Type or Stamp Commissioned Name of Notary Public:

Personally Known _____ **or Produced Identification** _____
Type of Identification Produced: _____

CONTRACTOR:

Signature: _____
Name of person authorized to sign Affidavit of Notice

_____
TITLE

Contractor name, address and telephone No.:

_____
_____
_____
_____
_____

VERIFICATION, RECOMMENDATION, CONCURRENCES AND APPROVALS

	(Signatures)	(Date)
Quantities verified by:	_____	_____
Consultant / Engineer:	_____	_____
Project Manager:	_____	_____
Department Head:	_____	_____
Payment Approved by the Board of County Commissioners:	_____	_____
Attested to by the Clerk of Circuit Court:	_____	_____

PAY APPLICATION SCHEDULE (CONTINUATION SHEET)

KEY: COLS. A THROUGH F ARE FROM ORIGINAL BID COL. G IS THE CHANGE ORDER NUMBER W.I.P. = WORK-IN-PLACE COL. "Q" = 100 x P / (F + J)-------MAY NOT EXCEED 100%

ITEM NO.	DESCRIPTION OF WORK	UNIT	UNIT PRICE	QTY	VALUE	CHANGE ORDERS				PREVIOUS W.I.P.		CURRENT W.I.P.		TOTAL W.I.P.		%
						#	QTY	+/-	+/- VAL.	QTY	VALUE	QTY	VALUE	QTY	VALUE	
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
					SAMPLE SHEET ONLY OBTAIN CURRENT VERSION OF FORM FROM PROJECT MANAGER											
	TOTALS													ATTACH STORED-MATERIAL SCHEDULE		

NOTE: CONTRACTOR MAY SUBMIT A COMPUTER SPREADSHEET IN LIEU OF FILLING IN THIS FORM IF THE SAME INFORMATION IS PROVIDED.

PAGE _____ OF _____

PAY APPLICATION SCHEDULE OF STORED MATERIALS

ITEM NO.	DESCRIPTION OF MATERIALS	SUPPLIER	PAID INVOICE	PREVIOUSLY RECEIVED	RECEIVED THIS PERIOD	PREVIOUSLY INSTALLED	INSTALLED THIS PERIOD	BALANCE TO INSTALL	VALUE OF BALANCE
A	B	C	D	E	F	G	H	I	J
		SAMPLE SHEET ONLY OBTAIN CURRENT VERSION OF FORM FROM PROJECT MANAGER							
	TOTAL								

CONTRACT CHANGE ORDER

PROJECT:

Change Order No.:

Contract Amount:
(Present Value)

Project Number:

NO. OF ITEM	DESCRIPTION OF ITEM AND CHANGE	DECREASE	INCREASE
	SAMPLE SHEET ONLY OBTAIN CURRENT VERSION OF FORM FROM PROJECT MANAGER		
		TOTAL DECREASE:	**TOTAL INCREASE:**

Contractor:
Address:
City / State:

Contractor
Signature: _____

THE NET CHANG
ADJUSTS THE CURRENT CONTRACT AMOUNT FROM
TO

_____ CALENDAR DAYS ARE ADDED TO THE SCHEDULE
WHICH CHANGES FINAL COMPLETION TO _____.

RECOMMENDATION, CONCURRENCES AND APPROVALS

	SIGNATURES	DATE
Consultant (as applicable):	_____	_____
Project Engineer:	_____	_____
Project Manager:	_____	_____
Department Head:	_____	_____
Approved by the Manatee County Board of County Commissioners:	_____ Chairman	_____
Clerk of the Circuit Court:	_____	_____

CONTRACT CHANGE ORDER Page 2 (Continuation)		Change Order No: Project Number:	
NO. OF ITEM	DESCRIPTION OF ITEM AND CHANGE	DECREASE	INCREASE
	SAMPLE SHEET ONLY OBTAIN CURRENT VERSION OF FORM FROM PROJECT MANAGER		
		DECREASE SUBTOTAL:	INCREASE SUBTOTAL:

CONTRACT CHANGE ORDER Page 3 (Continuation)		Change Order No: Project Number:	
NO. OF ITEM	DESCRIPTION OF ITEM AND CHANGE	DECREASE	INCREASE
	SAMPLE SHEET ONLY OBTAIN CURRENT VERSION OF FORM FROM PROJECT MANAGER		
		DECREASE SUBTOTAL:	INCREASE SUBTOTAL:

JUSTIFICATION FOR CHANGE	Change Order No : Project Number:

1. **NECESSITY FOR CHANGE:**

SAMPLE SHEET ONLY
OBTAIN CURRENT VERSION OF FORM
FROM PROJECT MANAGER

2. Is change an alternate bid? (yes / no)

3. Does change substantially alter the physical size of the project? (yes / no)
(If yes, explain)

4 Effect of this change on other "Prime" contractors?

5 Has the Surety and insurance company been notified, if applicable?

DISCRETIONARY WORK - FIELD DIRECTIVE

PROJECT:

FIELD DIRECTIVE NO:

PROJECT NO.:

ITEM	DESCRIPTION OF ITEM AND CHANGE	DECREASE
	SAMPLE SHEET ONLY OBTAIN CURRENT VERSION OF FORM FROM PROJECT MANAGER	
		DECREASE

CONTRACTOR: _____
ADDRESS: _____
CITY/STATE: _____

CONTRACTOR SIGNATURE: _____

THE DISCRETIONARY WORK AMOUNT IS DECREASED $ FROM $ TO $ WITH NO CHANGE TO THE TOTAL CONTRACT AMOUNT.

TIME CAN ONLY BE ADDED BY CHANGE ORDER

RECOMMENDATION, CONCURRENCES AND APPROVALS

	SIGNATURES	DATE
CONSULTANT:		
PROJECT ENGINEER:		
PROJECT MANAGER:		
SENIOR PROJECT MANAGER:		

CERTIFICATE OF SUBSTANTIAL COMPLETION (S.C.)	CHECK ONE: Partial:	Total:
Project Title:	Date Submitted:	
Contractor Data: Name: Address: City/State/zip:	Project No.: S.C. Date (Proposed)	

If the "Partial" completion box above is checked, the following description applies to the work for which substantial completion is being sought. Otherwise, the work described in the Contract including approved changes, if any, is certified to be substantially complete:
(Description of the portion of work substantially completed):

SAMPLE SHEET ONLY
OBTAIN CURRENT VERSION OF FORM
FROM PROJECT MANAGER

(USE CONTINUATION SHEETS IF NECESSARY)

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item does not alter the Contractor's responsibility to complete all of the contract work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by the Contractor within _____ days of substantial completion. The approved substantial completion date is: _____ .

Contractor Signature / Date	Engineer's Approval / Date
Printed Name and Title	Printed Name and Title

The Contractor shall be responsible for security, operation, safety, maintenance, HVAC, insurance and warranties in accordance with the Contract. The County will assume the responsibility for paying the cost of electrical power from midnight of the date of Engineer's approval as indicated above.

ATTACH THE INSPECTOR'S FINAL WALKTHROUGH LIST OF DEFICIENCIES.

FINAL RECONCILIATION, WARRANTY PERIOD DECLARATION AND CONTRACTOR'S AFFIDAVIT

Project Title:	Date Submitted:
Contractor Data: Name: SAMPLE SHEET ONLY Address: OBTAIN CURRENT VERSION OF FORM City/State/zip: FROM PROJECT MANAGER	Project No.: Warranty (months):

This Final Reconciliation is for the work performed for Manatee County by the above named Contractor, hereinafter called CONTRACTOR, pursuant to a contract dated _____, as amended, and acts as an addendum thereto.

It is agreed that all quantities and prices in the attached Final Pay Estimate No. _____ are correct, that the amount of $_____, including retainage, is due to the CONTRACTOR, that no claims are outstanding as between the parties, and that the above stated sum represents the entirety of monies owed the CONTRACTOR.

It is further agreed that the warranty period for CONTRACTOR'S work pursuant to the Contract is from _____ to _____.

As (title) _____ for CONTRACTOR, I have authority to bind said CONTRACTOR, and as such make this final reconciliation, declaration and affidavit for the purpose of inducing Manatee County to make final payment to CONTRACTOR for work done at / upon _____ under said contract:

CONTRACTOR has paid all social security and withholding taxes accrued in connection with this construction project.

CONTRACTOR has paid all workers' compensation and other insurance premiums incurred in connection with this construction project.

CONTRACTOR has paid for all required permits in connection with this construction project.

All laborers, materialmen, suppliers, subcontractors and service professionals who worked for and/or supplied materials, equipment and/or services to the CONTRACTOR under this construction contract have been paid in full.

_____
(Affiant Signature)

NOTARY:
State of Florida County of _____, Sworn to (or affirmed) and subscribed before me this _____ day of _____, _____, by _____(person giving notice).

Signature of Notary Public - State of Florida: _____
Print, Type or Stamp Commissioned Name of Notary Public:

Personally known ____ or produced identification ____
Type of Identification Produced:

SECTION 00700
GENERAL CONDITIONS

ARTICLE I - DEFINITIONS

Whenever used in the Bid Documents, the following terms have the meaning indicated which are applicable to both the singular and plural thereof:

Addendum - Written or graphic instruments issued prior to the opening of bids which clarify or change the bidding documents or the contract documents.

Agreement - The written Agreement between Owner and Contractor covering the Work to be performed; other contract documents are attached to the Agreement and made a part thereof as provided therein.

Written Amendment - A written amendment of the contract documents, signed by Owner and Contractor on or after the effective date of the Agreement and normally dealing with the non-engineering or non-technical rather than strictly work related aspects of the contract documents.

Application for Payment - The form accepted by Project Representative which is to be used by Contractor in requesting progress or final payments and which is to include such supporting documentation as is required by the contract documents.

Award - Acceptance of the bid from the person, firm, or corporation which in the Owner's sole and absolute judgment will under all circumstances best serve the public interest. Award shall be made by a majority vote of a quorum of Manatee County Board of County Commissioners in open session; or by the Purchasing Director in accordance with Ordinance 84-02, Manatee County Procurement Code.

Bid - The offer of the bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

Bidder - One who submits a bid directly to the Owner, as distinct from a sub-bidder, who submits a bid to a Bidder.

Bidding Documents - Consists of the Invitation for Bid, which includes but is not limited to: the bid form, drawings, technical specifications, terms and conditions, and the proposed contract documents (including all Addenda issued prior to receipt of bids); and becomes a part of the Agreement.

Bonds - Performance and payment bonds and other instruments of security.

Change Order - A document recommended by Project Representative which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work, or an adjustment in the contract price or the contract time, issued on or after the effective date of the Agreement.

Compensable Delay - Any delay beyond the control and without the fault or negligence of the Contractor resulting from Owner-caused changes in the Work, differing site conditions, suspensions of the Work, or termination for convenience by Owner.

Contract Documents - The Agreement, Addenda (which pertain to the contract documents), Contractor's bid (including documentation accompanying the bid and any post-bid documentation submitted prior to the Notice of Award), the bonds, the specifications and the drawings, together with all amendments, modifications and supplements issued on or after the effective date of the Agreement.

Contract Price - The monies payable by Owner to Contractor under the contract documents as stated in the Agreement.

Contract Time - The number of days or the date stated in the Notice to Proceed for the completion of the Work.

Contractor - The person, firm or corporation with whom Owner has entered into an Agreement.

Days - All references to days are to be considered calendar days except as specified differently.

Defective - An adjective which when modifying the work refers to work that is unsatisfactory, faulty or deficient, or does not conform to the contract documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the contract documents, or has been damaged prior to Project Representative's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner).

Drawings - The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by Engineer and are referred to in the bidding and contract documents.

Effective Date of the Agreement - The date indicated in the Agreement on which it becomes effective (date of execution).

Excusable Delay - Any delay beyond the control and without the negligence of the Contractor, the Owner, or any other contractor caused by events or circumstances such as, but not limited to, acts of God or of the public enemy, fires, floods, freight embargoes, acts of government other than Owner, or epidemics. Labor disputes and above average rainfall shall give rise only to excusable delays.

Float or Slack Time - The time available in the progress schedule during which an unexpected activity can be completed without delaying substantial completion of the Work.

Field Order - A written order issued by Project Representative which orders minor changes in the Work, but which does not involve a change in the contract price or the contract time.

Inexcusable Delay - Any delay caused by events or circumstances within the control of the Contractor, such as inadequate crewing, slow submittals, etc., which might have been avoided by the exercise of care, prudence, foresight, or diligence on the part of the Contractor.

Non-prejudicial Delay - Any delay impacting a portion of the Work within the available total float or slack time and not necessarily preventing completion of the Work within the contract time.

Notice of Award - The written notice to the successful bidder stating Award has been approved by the Board of County Commissioners; or by the Purchasing Director in accordance with Ordinance 84-02, Manatee County Procurement Code.

Notice of Intent to Award - The written notice to the apparent low bidder stating Award has been recommended with final Award to be authorized by the Board of County Commissioners.

Notice to Proceed - Written notice by Owner (after execution of contract) to Contractor fixing the date on which the contract time will commence to run and on which Contractor shall start to perform (ten (10) days from date of such notice) Contractor's obligations under the contract documents.

Owner - Manatee County, Florida, Board of County Commissioners.

Preconstruction Conference - Prior to starting the Work, a meeting scheduled by Owner with Contractor to review the Work schedules, to establish procedures for handling shop drawings and other submissions, for processing periodical pay estimates, and such other matters as may be pertinent to the project.

Prejudicial Delay - Any excusable or compensable delay impacting the Work and exceeding the total float available in the progress schedule, thus preventing completion of the Work within the contract time unless the Work is accelerated.

Pre-operation Testing - All field inspections, installation checks, water tests, performance tests and necessary corrections required of Contractor to demonstrate that individual components of the work have been properly constructed and do operate in accordance with the contract documents for their intended purposes.

Project - The total construction of which the Work to be provided under the contract documents may be the whole or a part as indicated elsewhere in the contract documents.

Project Representative - The authorized representative of Owner who is assigned to the project or any part thereof.

Shop Drawings - All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for Contractor to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a supplier and submitted by Contractor to illustrate material or equipment for some portion of the Work.

Specifications - Those portions of the contract documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

Subcontractor - An individual or corporation having a direct contact with Contractor or with any other subcontractor for the performance of a part of the Work at the site. Such person or firm has contractual relations with the Contractor, not with the Owner.

Substantial Completion - The Work (or a specified part thereof) has progressed to the point when, in the opinion of the Engineer as evidenced by Engineer's definitive certificate of Substantial Completion, it is sufficiently complete in accordance with contract documents so that the work can be utilized for the purposes for which it is intended; or if there be no such certificate issued, when final payment is due.

Successful Bidder - The lowest qualified, responsible and responsive bidder to whom an award is made.

Supplier - A manufacturer, fabricator, supplier, distributor, materialman or vendor.

Underground Facilities - All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments and any encasement containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

Unit Price Work - Work to be paid for on the basis of unit prices.

Work - The entire completed construction or the various separately identifiable parts thereof required to be furnished under the contract documents. Work is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the contract documents.

Work Directive Change - A written directive to contractor, issued on or after the effective date of the Agreement and signed by Owner and recommended by Project Representative ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed or to emergencies. A work directive change may not change the contract price or the contract time; but is evidence that the parties expect that the change directed or documented by a work directive change will be incorporated in a subsequently issued change order following negotiations by the parties as to its effect, if any, on the contract price or contract time.

ARTICLE 2 - PRELIMINARY MATTERS

Computation of Time: When time is referred to in the contract documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or legal holiday, such day will be omitted from the computation.

2.1 The Contractor must submit a proposed schedule of the Work at the preconstruction conference. The purpose of this schedule is to enable the Owner to govern the Work, to protect the functions of the local government and its citizens and to aid in providing appropriate surveillance. The Owner shall have the right to reschedule work provided such rescheduling is in accord with the remainder of terms of the contract. The schedule shall show, as a minimum, the approximate dates on which each segment of the work is expected to be started and finished, the proposed traffic flows during each month, the anticipated earnings by the Contractor for each month and the approximate number of crews and

equipment to be used. The Owner, after necessary rescheduling and obtaining additional information for specific purposes, shall review and approve the schedule. The Contractor shall also forward to the Owner, as soon as practicable after the first day of each month, a summary report of the progress of the various parts of the work under the contract, in fabrication and in the field, stating the existing status, estimated time of completion and cause of delay, if any. Together with the summary report, the Contractor shall submit any necessary revisions to the original schedule for the Owner's review and approval. In addition, more detailed schedules may be required by the Owner for daily traffic control.

2.2 A Notice to Proceed may be given at any time within 30 days after the effective date of the Agreement. The contract time will commence at the time specified in such notice. Contractor shall start to perform the Work on the date specified in the Notice to Proceed, but no work shall be done at the site prior to the date on which the contract time commences to run.

2.3 If at any time the materials and appliances to be used appear to the Owner as insufficient or improper for securing the quality of work required or the required rate of progress, the Owner may order the Contractor to increase his efficiency or to improve the character of his work and the Contractor shall conform to such an order. The failure of the Owner to demand any increase of such efficiency of any improvement shall not release the Contractor from his obligation to secure the quality of work or the rate of progress necessary to complete the Work within the limits imposed by the contract. The Owner may require the Contractor to remove from the Work such employees as the Owner deems incompetent, careless, insubordinate or otherwise objectionable, or whose continued employment on the Work is deemed to be contrary to the Owner's interest.

2.4 The Owner reserves the right to let other Contracts in connection with this Work. The Contractor shall afford other Contractors reasonable opportunity for the introduction and storage of their materials and execution of their Work, and promptly connect and coordinate the Work with theirs.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, RE-USE

3.1 The contract documents comprise the entire Agreement between Owner and Contractor concerning the work. The contract documents are complementary; what is called for by one is as binding as if called for by all. The contract documents will be construed in accordance with the laws and ordinances of the State of Florida and the County of Manatee.

Should a conflict exist within the contract documents, the precedence in ascending order of authority is as follows: 1) Standard Printed Technical Specifications, 2) Special Conditions, 3) General Conditions and 4) Drawings. Note: Computed dimensions shall govern over scaled dimensions.

3.2 It is the intent of the contract documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the contract documents. Any work, materials or equipment that may reasonably be inferred from the contract documents as being required to produce the intended result will be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe work, materials, or equipment, such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society,

organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect at the time of opening of bids, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the contract documents) shall be effective to change the duties and responsibilities of Owner, Contractor or Engineer, or any of their agents or employees from those set forth in the Contract Documents.

3.3 The contract documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:

3.3.1 A Formal Written Amendment

3.3.2 A Change Order

3.3.3 A Work Directive Change

3.4 In addition, the requirements of the contract documents may be supplemented and minor variations and deviations in the Work may be authorized in one or more of the following ways:

3.4.1 A Field Order

3.4.2 Engineer's approval of a Shop Drawing or sample.

ARTICLE 4 - CONTRACTOR'S RESPONSIBILITIES

4.1 Contractor shall keep on the Work at all times during its progress a competent resident superintendent; who shall be the Contractor's representative at the site and shall have authority to act on behalf of Contractor. All communications given to the superintendent shall be as binding as if given to Contractor.

4.2 Contractor shall provide competent, suitable qualified personnel to survey and lay out the Work and perform construction as required by the contract documents. Contractor shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto and except as otherwise indicated in the contract documents, all Work at the site shall be performed during regular working hours and Contractor will not permit overtime work or the performance of work on Sunday or legal holiday without Owner's written consent given after prior notice to Engineer (at least 72 hours in advance).

4.2.1 Contractor shall pay for all additional engineering charges to the Owner for any overtime work which may be authorized. Such additional engineering charges shall be a subsidiary obligation of Contractor and no extra payment shall be made by Owner on account of such overtime work. At Owner's option, overtime costs may be deducted from Contractor's monthly payment request or Contractor's retainage prior to release of final payment.

4.3 Unless otherwise specified, Contractor shall furnish and assume full responsibility for all bonds, insurance, materials, equipment, labor, transportation, construction equipment and

machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

4.4 All materials and equipment shall be of good quality and new, except as otherwise provided in the contract documents. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instruction of the applicable supplier except as otherwise provided in the contract documents.

4.5 Contractor shall be fully responsible to Owner for all acts and omissions of the subcontractors, suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with Contractor just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between Owner or Engineer and any such subcontractor, supplier or other person or organization, nor shall it create any obligation on the part of Owner to pay or to see to the payment of any monies due any such subcontractor, supplier or other person or organization.

4.6 Permits: Unless otherwise provided, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work.

4.7 During the progress of the Work, Contractor shall keep the premises free from accumulation of waste materials rubbish and other debris resulting from the Work. At the completion of the Work, Contractor shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery and surplus materials and shall leave the site clean and ready for occupancy by Owner. Contractor shall restore to original conditions all property not designated for alteration by the Contract Documents.

4.8 Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

4.9 Safety and Protection: Contractor shall comply with the Florida Department of Commerce Safety Regulations and any local safety regulations. Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of and shall provide the necessary protection to prevent damage, injury or loss to:

4.9.1 all employees on the work and other persons and organizations who may be affected thereby;

4.9.2 all the work and materials and equipment to be incorporated therein, whether in storage on or off the site; and

4.9.3 other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and underground facilities not designated for removal, relocation or replacement in the course of construction.

Contractor shall comply with all applicable laws and regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall provide and maintain all passageways, guard fences, lights and other facilities for the protection required by public authority or local conditions. Contractor shall provide reasonable maintenance of traffic way for the public and preservation of the Owner's business, taking into full consideration all local conditions. Contractor's duties and responsibilities for the safety and protection of the work shall continue until such time as all the work is completed.

4.10 Emergencies: In emergencies affecting the safety or protection of persons or the work or property at the site or adjacent thereto, Contractor, without special instruction or authorization from Engineer or Owner, is obligated to act to prevent threatened damage, injury or loss. Contractor shall give Owner prompt written notice if Contractor believes that any significant changes in the work or variations from the contract documents have been caused thereby. If Owner determines that a change in the contract documents is required because of the action taken in response to an emergency, a Work Directive Change or Change order will be issued to document the consequences of the changes or variation.

4.11 For substitutes not included with the bid, but submitted after the effective date of the Agreement, Contractor shall make written application to Engineer for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The application will also contain an itemized estimate of all costs and delays or schedule impacts that will result directly or indirectly from review, acceptance and provisions of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by the Engineer in evaluating the proposed substitute. Engineer may require Contractor to furnish at Contractor's expense, additional data about the proposed substitute. In rendering a decision, Owner/Engineer and Contractor shall have access to any available float time in the construction schedule. In the event that substitute materials or equipment not included as part of the bid, but proposed after the effective date of the agreement, are accepted and are less costly than the originally specified materials or equipment, then the net difference in cost shall be credited to the Owner and an appropriate change order executed.

4.11.1 If a specific means, method, technique, sequence of procedure of construction is indicated in or required by the contract documents, Contractor may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to Engineer if Contractor submits sufficient information to allow Engineer to determine that the substitute proposed is equivalent to that indicated or required by the contract documents.

4.11.2 Engineer will be allowed a reasonable time within which to evaluate each proposed substitute. Engineer will be the sole judge of acceptability and no substitute will be ordered, installed or utilized without Engineer's prior written

acceptance which will be evidenced by either a change order or an approved shop drawing. Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

4.11.3 Contractor shall reimburse Owner for the charges of Engineer and Engineer's Consultants for evaluating each proposed substitute submitted after the effective date of the Agreement and all costs resulting from any delays in the work while the substitute was undergoing review.

4.12 The Contractor shall furnish, free of charge, all labor, stakes, surveys, batter boards for structures, grade lines and other materials and supplies and shall set construction stakes and batter boards for establishing lines, position of structures, slopes and other controlling points necessary for the proper prosecution of the construction work. Where rights-of-way, easements, property lines or any other conditions which make the lay-out of the project or parts of the project critical are involved, the Contractor will employ a competent surveyor who is registered in the State of Florida for lay-out and staking. These stakes and marks shall constitute the field control by and in accord with which the Contractor shall govern and execute the work. The Contractor will be held responsible for the preservation of all stakes, marks and if for any reason any of the stakes or marks or batter boards become destroyed or disturbed, they will be immediately and accurately replaced by the Contractor.

4.13 The Contractor has, by careful examination, satisfied himself as to the nature and location of the work and all other matters which can in any way affect the work under this contract, including, but not limited to details pertaining to boring, as shown on the drawings, are not guaranteed to be more than a general indication of the materials likely to be found adjacent to holes bored at the site of the work, approximately at the locations indicated. The Contractor shall examine boring data, where available, and make his own interpretation of the subsoil investigations and other preliminary data, and shall base his bid on his own opinion of the conditions likely to be encountered. In no event shall an extension of time be considered for any conditions that existed at the time of bidding, nor shall the Contractor receive extra compensation for completion of the project as intended by the drawings and in keeping with the contact documents. No verbal agreement or conversation with any officer, agent or employee of the Owner, before or after the execution of this contract, shall affect or modify any of the terms or obligations herein contained.

4.14 If the Contractor, in the course of the work, finds that the drawings and/or technical specifications cannot be followed, he shall immediately inform the Owner in writing, and the Owner shall promptly check the accuracy of the information. Any work done after such discovery, until any necessary changes are authorized, will be done at the Contractor's risk.

ARTICLE 5 - OWNER'S RESPONSIBILITIES

5.1 Owner shall furnish the data required of Owner under the contract documents promptly and shall make payments to the Contractor within a reasonable time (no more than 45 days) after the Work has been accepted by the County. The form of all submittals, notices, change orders and other documents permitted or required to be used or transmitted under the contract documents shall be determined by the Owner/Engineer. Standard County forms shall be utilized.

5.2 The Owner shall provide the lands upon which the Work under this contract is to be done, except that the Contractor shall provide all necessary additional land required for the erection of temporary construction facilities and storage of his materials, together with right of access to same.

5.3 The Owner shall have the right to take possession of and use any completed portions of the work, although the time for completing the entire work or such portions may not have expired, but such taking possession and use shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents.

ARTICLE 6 - WARRANTY, TEST/INSPECTION, CORRECTION

6.1 Contractor warrants (for a minimum period of three years or as otherwise stated herein) and guarantees to Owner that all work will be in accordance with the contract documents and will not be defective; that Owner, representatives of Owner, governmental agencies with jurisdictional interests will have access to the work at reasonable time for their observation, inspecting and testing (Contractor shall give Engineer timely notice of readiness of the work for all required approvals and shall assume full responsibility, including costs, in obtaining required tests, inspections, and approval certifications and/or acceptance, unless otherwise stated by Owner).

6.2 If any work (including work of others) that is to be inspected, tested, or approved is covered without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation. Such uncovering shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice. Neither observations by Engineer nor inspections, tests, or approvals by others shall relieve Contractor from Contractor's obligations to perform the work in accordance with the contract documents.

6.3 If the work is defective, or Contractor fails to supply sufficient skilled workers, or suitable materials or equipment, or fails to furnish or perform the work in such a way that the completed work will conform to the contract documents, Owner may order Contractor to stop the work, or any portion thereof and terminate payments to the Contractor until the cause for such order has been eliminated. Contractor shall bear all direct, indirect and consequential costs for satisfactory reconstruction or removal and replacement with non-defective work, including, but not limited to fees and charges of engineers, architects, attorneys and other professionals and any additional expenses experienced by Owner due to delays to other Contractors performing additional work and an appropriate deductive change order shall be issued. Contractor shall further bear the responsibility for maintaining schedule and shall not be entitled to an extension of the contract time and the recovery of delay damages due to correcting or removing defective work.

6.3.1 If Contractor fails within seven (7) days after written notice to correct defective work, or fails to perform the work in accordance with the contract documents, or fails to comply with any other provision of the contract documents, Owner may correct and remedy any such deficiency. To the extent necessary to complete corrective and remedial action, Owner may exclude Contractor from all or part of the site, take possession of all or part of the work, Contractor's tools, construction equipment and machinery at the site or for which Owner has paid Contractor but which are stored elsewhere. All direct, indirect and consequential costs of Owner in exercising such rights and remedies will be charged against Contractor in an amount approved as to reasonableness by Engineer and a change order will be issued incorporating the necessary revisions.

6.3.2 If within three years after the date of completion or such longer period of time as may be prescribed by laws or regulations or by the terms of any applicable special guarantee required by the contract documents, any work is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions, either correct such defective work or if it has been rejected by Owner, remove it from the site and replace it with non-defective work. If Contractor does not promptly comply with the terms of such instruction, Owner may have the defective work corrected/removed and all direct, indirect and consequential costs of such removal and replacement will be paid by Contractor.

ARTICLE 7 - RESIDENT PROJECT REPRESENTATIVE - DUTIES, RESPONSIBILITIES

7.1 Resident Project Representative is Engineer/Owner's Agent, who will act as directed by and under the supervision of the Engineer, and who will confer with Owner/Engineer regarding his actions. Resident Project Representative's dealing in matters pertaining to the on-site work shall, in general, be only with the Owner/Engineer and Contractor and dealings with subcontractors shall only be through or with the full knowledge of Contractor.

7.2 Resident Project Representative will:

7.2.1 Review the progress schedule, schedule of shop drawing submissions and schedule of values prepared by Contractor and consult with Owner/Engineer concerning their acceptability.

7.2.2 Attend preconstruction conferences. Arrange a schedule of progress meetings and other job conferences as required in consultation with Owner/Engineer and notify those expected to attend in advance. Attend meetings and maintain and circulate copies of minutes thereof.

7.2.3 Serve as Owner/Engineer's liaison with Contractor, working principally through Contractor's superintendent and assist him in understanding the intent of the contract documents. As requested by Owner/Engineer, assist in obtaining additional details or information when required at the job site for proper execution of the Work.

7.2.4 Receive and record date of receipt of shop drawings and samples, receive samples which are furnished at the site by Contractor and notify Owner/Engineer of their availability for examination.

7.2.5 Advise Owner/Engineer and Contractor or his superintendent immediately of the commencement of any work requiring a shop drawing or sample submission if the submission has not been approved by the Owner/Engineer.

7.2.6 Conduct on-site observations of the work in progress to assist Owner/Engineer in determining if the work is proceeding in accordance with the contract documents and that completed work will conform to the contract documents.

7.2.7 Report to Owner/Engineer whenever he believes that any work is unsatisfactory, faulty or defective or does not conform to the contract documents, or does not meet the requirements of any inspections, tests or approvals required or if work has been damaged prior to final payment; and advise Owner/Engineer when he believes work should be corrected or rejected or should be uncovered for observation or requires special testing, inspection or approval.

7.2.8 Verify that tests, equipment and system start-ups and operating and maintenance instructions are conducted as required by the contract documents and in the presence of the required personnel, and that Contractor maintains adequate records thereof; observe, record and report to Engineer appropriate details relative to the test procedures and start-ups.

7.2.9 Accompany visiting inspectors representing public or other agencies having jurisdiction over the project, record the outcome of these inspections and report to Owner/Engineer.

7.2.10 Transmit to Contractor, Owner/Engineer's clarifications and interpretations of the contract documents.

7.2.11 Consider and evaluate Contractor's suggestions or modifications in drawings or technical specifications and report them with recommendations to Owner/Engineer.

7.2.12 Maintain at the job site orderly files for correspondence, reports of job conferences, shop drawings and sample submissions, reproductions of original contract documents including all addenda, change orders, field orders, additional drawings issued subsequent to the execution of the contract, Owner/Engineer's clarifications and interpretations of the contract documents, progress reports and other project related documents.

7.2.13 Keep a diary or log book, recording hours on the job site, weather conditions, data relative to questions of extras or deductions; list of visiting officials and representatives or manufacturers, fabricators, suppliers and distributors; daily activities, decisions, observations in general and specific observations in more detail as in the case of observing test procedures. Send copies to Owner/Engineer.

7.2.14 Record names, addresses and telephone numbers of all Contractors, subcontractors and major suppliers of materials and equipment.

7.2.15 Furnish Owner/Engineer periodic reports as required of progress of the work and Contractor's compliance with the approved progress schedule and schedule of shop drawing submissions.

7.2.16 Consult with Owner/Engineer in advance of scheduling major tests, inspections or start of important phases of the work.

7.2.17 Report immediately the occurrence of any accident.

7.2.18 Review applications for payment with Contractor for compliance with the established procedure for their submission and forward them with recommendations to Owner/Engineer, noting particularly their relation to the schedule of values, work completed and materials and equipment delivered at the site but not incorporated in the work.

7.2.19 During the course of the work, verify that certificates, maintenance and operations manuals and other data required to be assembled and furnished by Contractor are applicable to the items actually installed, and deliver this material to Owner/Engineer for his review prior to final acceptance of the work.

7.2.20 Before Owner/Engineer issues a Certificate of Substantial Completion, submit to Contractor a list of observed items requiring completion or correction.

7.2.21 Conduct final inspection in the company of Owner/Engineer and Contractor and prepare a final list of items to be completed or corrected.

7.2.22 Verify that all items on final list have been completed or corrected and make recommendations to Owner/Engineer concerning acceptance.

7.3 Except upon written instructions of Owner/Engineer, Resident Project Representative:

7.3.1 Shall not authorize any deviation from the contract documents or approve any substitute materials or equipment;

7.3.2 Shall not exceed limitations on Owner/Engineer's authority as set forth in the contract documents;

7.3.3 Shall not undertake any of the responsibilities of Contractor, Subcontractors or Contractor's Superintendent, or expedite the work;

7.3.4 Shall not advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the contract documents;

7.3.5 Shall not advise on or issue directions as to safety precautions and programs in connection with the work;

7.3.6 Shall not authorize Owner to occupy the project in whole or in part; and

7.3.7 Shall not participate in specialized field or laboratory tests.

ARTICLE 8 - APPRENTICES

8.1 In accordance with the requirement of Section 446.011, Florida Statutes, the following requirements to safeguard the welfare of apprentices and trainees shall be a part of this contract, if applicable.

8.1.1 Contractor agrees to hire for the performance of the contract, a number of apprentices or trainees in each occupation which bears to the average number of the journeymen in that occupation to be employed in the performance of the contract, the ratio of at least one apprentice or trainee to every five journeymen.

8.1.2 Contractor agrees, when feasible to assure that 25% of such apprentices or trainees are in their first year of training, except when the number of apprentices or trainees to be hired is fewer than four.

8.1.3 Contractor agrees to submit, at three month intervals, to the Bureau of Apprenticeship of the Division of Labor, records of employment by trade of the number of apprentices or trainees employed; race of all apprentices; the number of apprentices or trainees in their first year of training; and total hours of work of all apprentices, trainees, and journeymen.

8.1.4 Contractor agrees to submit to the Bureau of Apprenticeship of the Division of Labor, at three month intervals, a statement describing steps taken toward making a diligent effort in the hiring of apprentices and trainees and containing a breakdown by craft of hours worked and wages paid for first year apprentices or trainees, other apprentices or trainees and journeymen.

NOTE: The form of all submittals, notices, change orders and other documents permitted or required to be used or transmitted under the Contract shall be determined by the County. Standard County forms shall be utilized.

END OF SECTION

September 12, 2008

To: ***All Bidders***

Subject: ***Invitation to Bid, Manatee County, Norma Lloyd Park***

ARCHITECT'S SUPPLEMENTAL INSTRUCTIONS (A.S.I.):

Bidders are hereby notified that this A.S.I. shall be acknowledged as a part of the submittal and made a part of the above named bidding and contract documents.

The following items are issued to add to, modify and clarify the bid and contract documents (plans and specifications). These items shall have the same force and effect as the original bidding and contract documents, and cost involved shall be included in the bid prices.

1. ***Attached are two 8-1/2" x 11"sheets that contain the revised information:***
   a. ***Revised Irrigation Plan (revised Sheet IR-1): Indicates plan revisions for tapping the mainline and setting the meter for the irrigation connection per the City of Bradenton requirements. The Contractor will be responsible to coordinate the tap of the line which is to be by the City of Bradenton. The Contractor will be responsible for the installation starting after the tap. The City of Bradenton will be present when the Contractor performs the work.***
   b. ***Addition of The City of Bradenton "Typical 2" Water Meter Installation" (added to Sheet C-7) for the Contractor's coordination with the City and use for installation.***

The bid date has not changed due to this A.S.I.

If you have submitted a bid prior to receiving this A.S.I. you may request in writing that your original sealed bid be returned to your firm. All sealed bids will be opened on the date stated.

Sincerely,

Sue Thompson, RLA
IBI Group, Inc.
1519 Main Street
Sarasota, Florida 34236
phone: 941.954.1718
fax: 941.954.0231

September 16, 2008

To: *All Bidders*

Subject: *Invitation to Bid, Manatee County, Norma Lloyd Park*

ARCHITECT'S SUPPLEMENTAL INSTRUCTIONS (A.S.I.):

Bidders are hereby notified that this Architect's Supplemental Instructions (A.S.I.) shall be made a part of the above named bidding and contract documents.

The following items are issued to clarify the bid and contract documents (plans and specifications). These items shall have the same force and effect as the original bidding and contract documents, and cost involved shall be included in the bid prices.

1. ***The Contractor is to perform the following:***
   a. ***The Contractor will be responsible to coordinate tapping of the water main line which is to be performed by the City of Bradenton. The Contractor will be responsible for the installation starting after the tap. The City of Bradenton will be present when the Contractor performs any/all work on the water main line. Details have been provided in the drawing set by the City of Bradenton that depict what is expected by the Contractor regarding the water line.***

The bid date has not changed due to this A.S.I.

If you have submitted a bid prior to receiving this A.S.I. you may request in writing that your original sealed bid be returned to your firm. All sealed bids will be opened on the date stated in the advertisement.

Sincerely,

Sue Thompson, RLA
IBI Group, Inc.
1519 Main Street
Sarasota, Florida 34236
phone: 941.954.1718
fax: 941.954.0231

October 3, 2008

To: *All Bidders*

Subject: *Invitation to Bid, Manatee County, Norma Lloyd Park*

ARCHITECT'S SUPPLEMENTAL INSTRUCTIONS (A.S.I.) #2:

Bidders are hereby notified that this Architect's Supplemental Instructions (A.S.I.) shall be made a part of the above named bidding and contract documents.

The following items are issued to clarify the bid and contract documents (plans and specifications). These items shall have the same force and effect as the original bidding and contract documents, and cost involved shall be included in the bid prices.

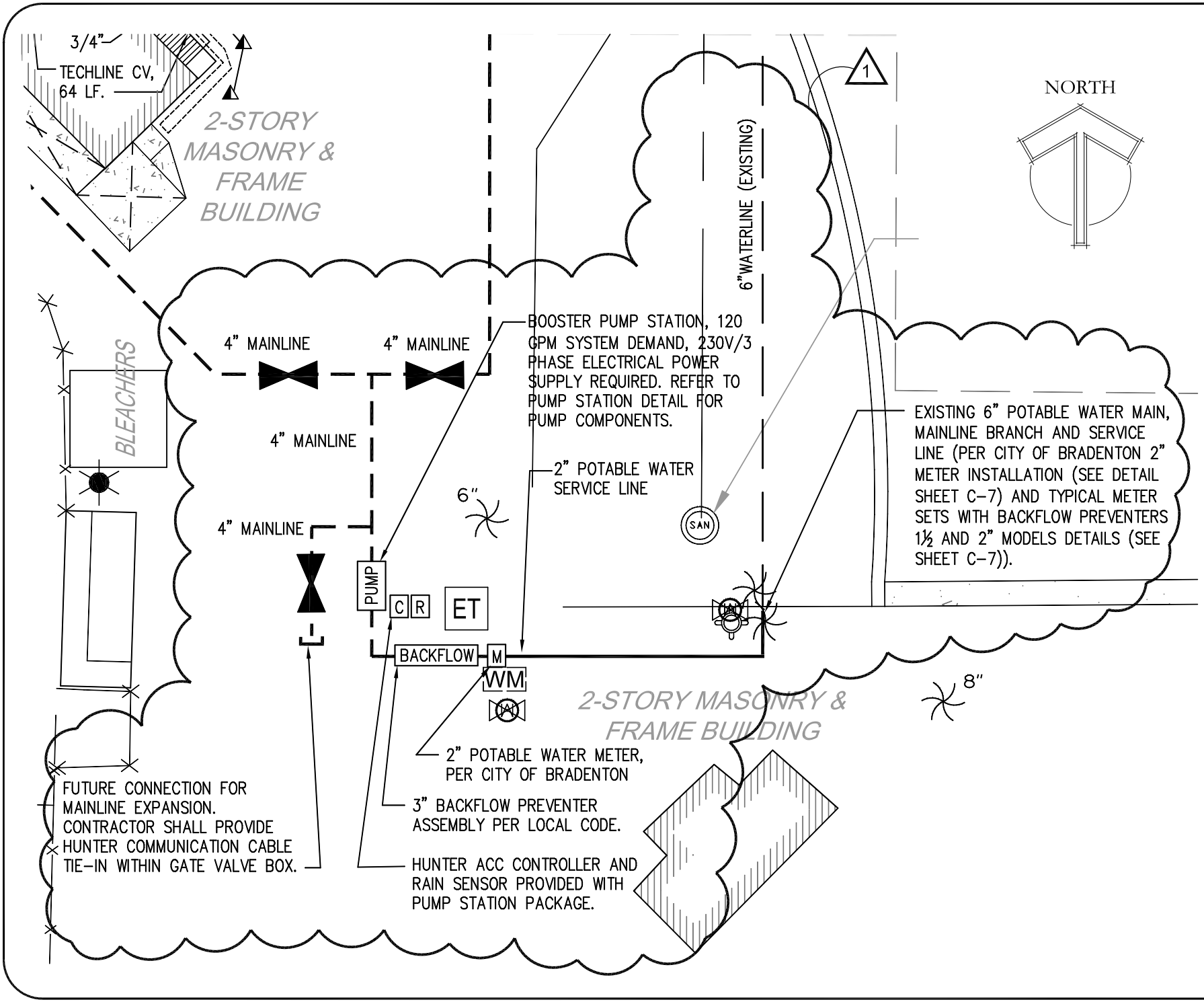
1. ***The Contractor is to perform the following:***
   a. ***The Contractor will be responsible to provide bidding pricing for the attached alternate parking lot sketch. The sketch is to be used to define the change in material for the drive aisles and parking bays and elimination of the landscaping and dumpster pad.***
   b. ***Bollard detail is provided so that Contractor will know what to provide when pricing the bollard material and installation.***

The bid date has not changed due to this A.S.I.

If you have submitted a bid prior to receiving this A.S.I. you may request in writing that your original sealed bid be returned to your firm. All sealed bids will be opened on the date stated in the advertisement.

Sincerely,

Sue Thompson, RLA
IBI Group, Inc.
1519 Main Street
Sarasota, Florida 34236
phone: 941.954.1718
fax: 941.954.0231



IBI GROUP, INC.
HTTP://WWW.IBIGROUP.COM
ENGINEERS CERT OF AUTH #2966 SURVEYORS CA#LB5610
PLANNERS LANDSCAPE ARCHITECTS ENVIRONMENTAL CONSULTANTS
1519 MAIN STREET
SARASOTA, FLORIDA 34236
(941) 954-1718 F: (941) 954-0231

IBI GROUP

SCALE:

PROJECT NUMBER 20245

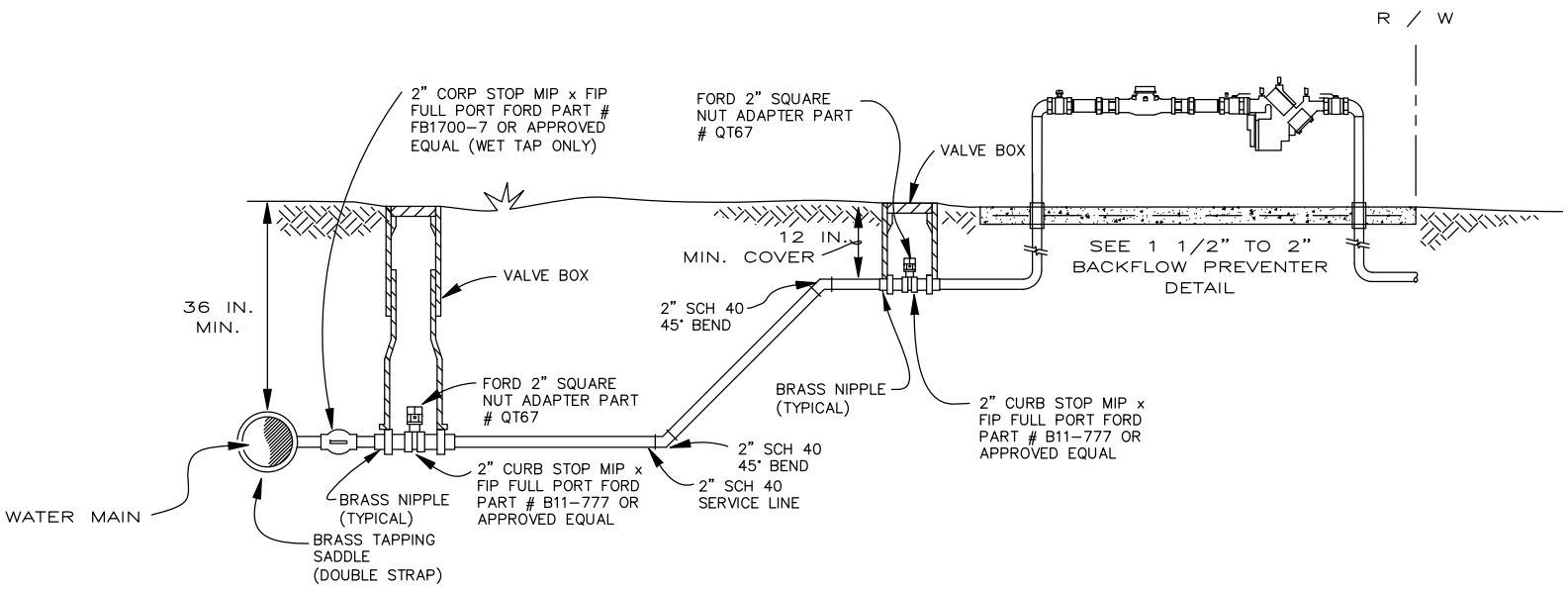
SHEET 1 OF 2

DRAWN: SC
CREW: SC
CHECKED: SC

09/12/08: REVISIONS TO CITY TAP AND IRRIGATION CONNECTION

NORMA LLOYD PARK
BRADENTON, FLORIDA

ASI #1 PLAN REVISIONS & ADDITIONAL DETAIL



TYPICAL 2" WATER METER INSTALLATION

N.T.S.

REV.	DATE	DESCRIPTION	BY
1	1/18/08	ADDED CURB STOP AND BOX	SIBE

CITY OF BRADENTON, FLORIDA
PUBLIC WORKS
DEPARTMENT OF ENGINEERING

WATER DISTRIBUTION
2" WATER METER

DATE 2/07
SHEET NO. W-2

SCALE:
PROJECT NUMBER 20245
SHEET 2 OF 2

IBI GROUP, INC.
HTTP://WWW.IBIGROUP.COM
ENGINEERS CERT OF AUTH #2966 SURVEYORS CA#LB5610
PLANNERS LANDSCAPE ARCHITECTS ENVIRONMENTAL CONSULTANTS
1519 MAIN STREET
SARASOTA, FLORIDA 34236
(941) 954-1718 F: (941) 954-0231

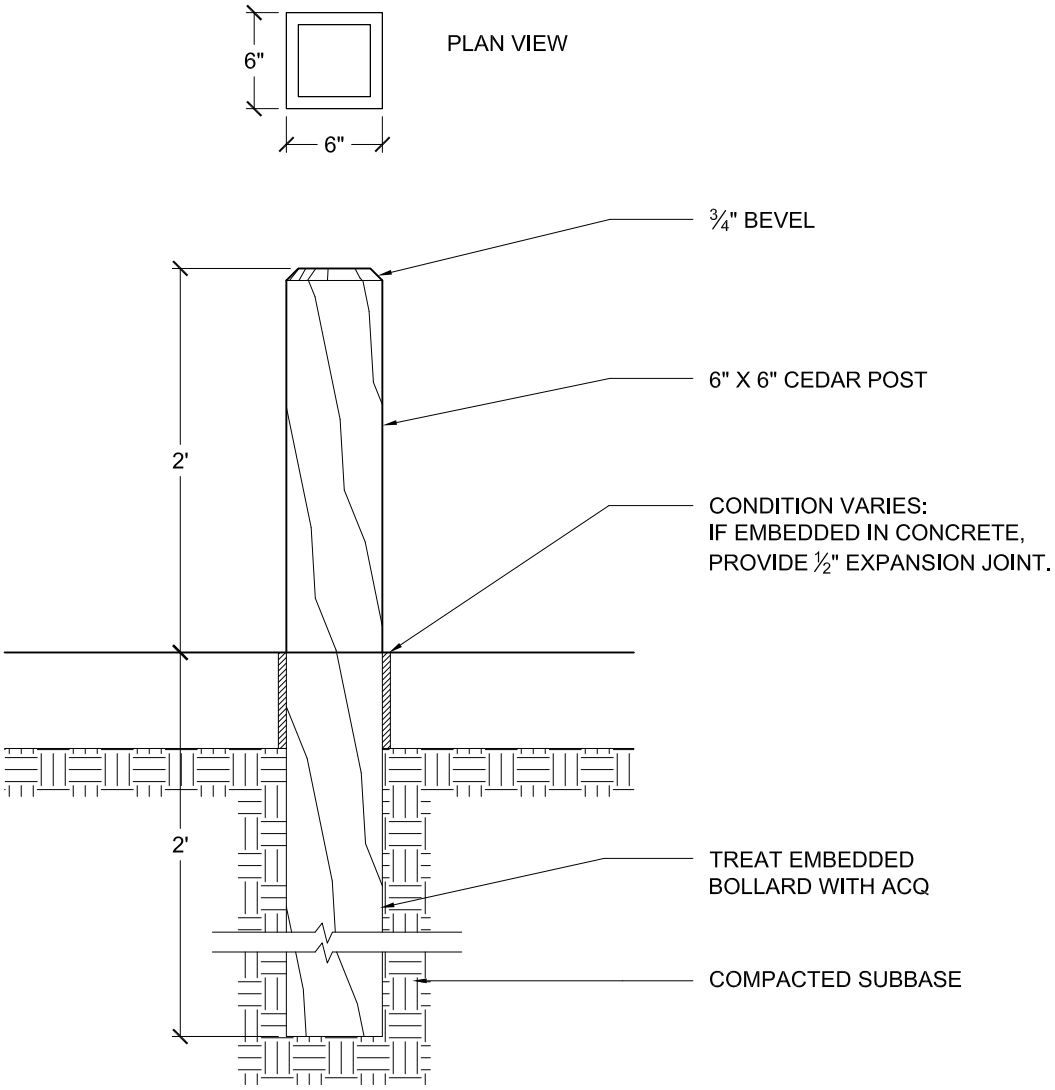
IBI GROUP

DRAWN:
CREW:
CHECKED:

△ 09/12/08: REVISIONS TO CITY TAP AND IRRIGATION CONNECTION

NORMA LLOYD PARK
BRADENTON, FLORIDA

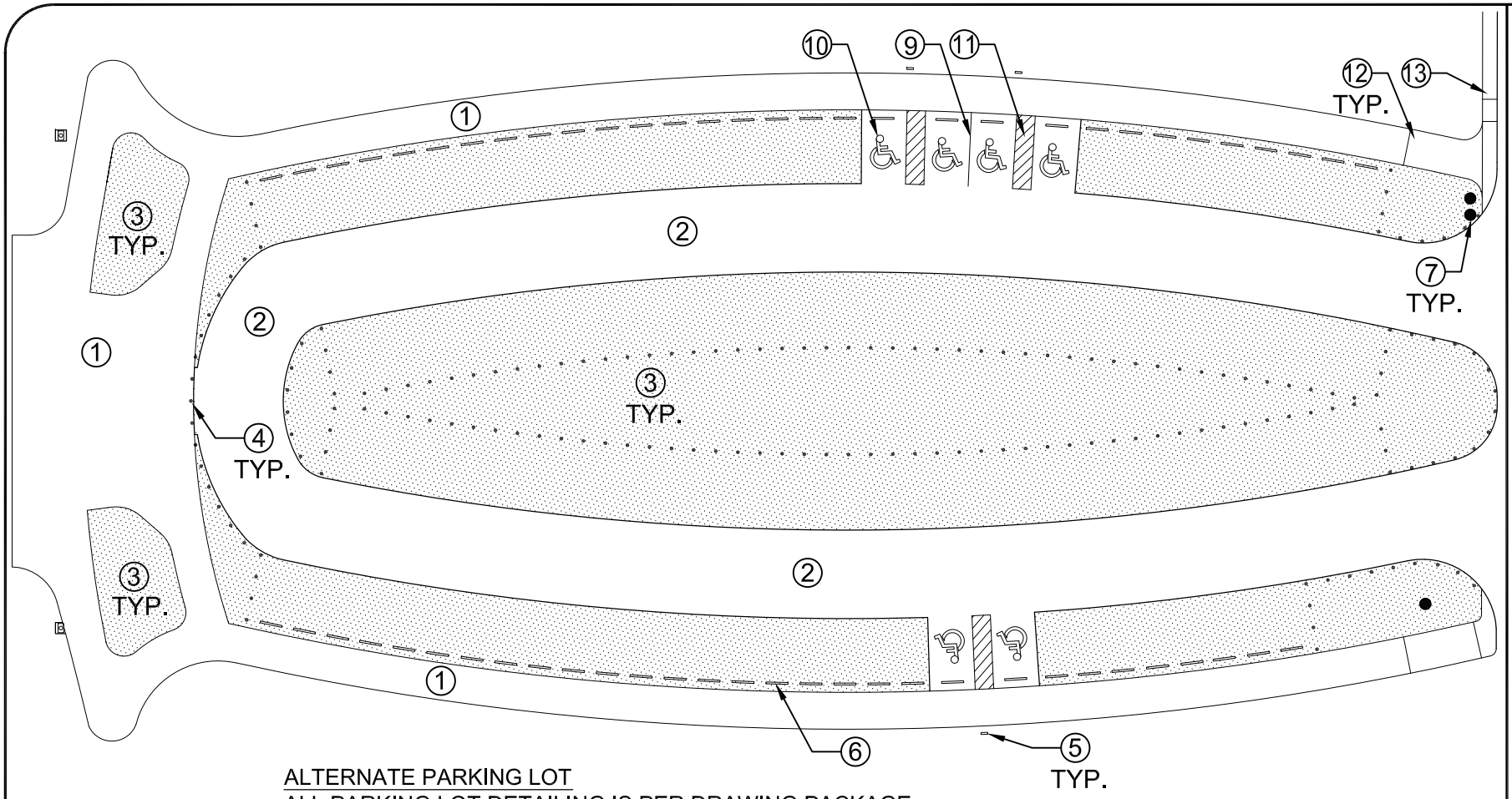
ASI #1 PLAN REVISIONS & ADDITIONAL DETAIL



1 SQUARE WOODEN BOLLARD - EMBEDDED

PLAN AND SECTION

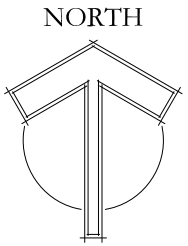
NORMA LLOYD PARK BRADENTON, FLORIDA	DRAWN: FW CHECKED: ST DATE: 10/03/08	IBI GROUP	**IBI GROUP, INC.** HTTP://WWW.IBIGROUP.COM ENGINEERS CERT OF AUTH #2966 SURVEYORS CA#LB5610 PLANNERS LANDSCAPE ARCHITECTS ENVIRONMENTAL CONSULTANTS 1519 MAIN STREET SARASOTA, FLORIDA 34236 (941) 954-1718 F: (941) 954-0231	SCALE: 1"=10'
ASI #2 PARKING REVISION & ADDITIONAL DETAIL				PROJECT NUMBER 20245
				SHEET 2 OF 2

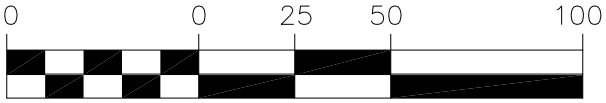


ALTERNATE PARKING LOT

ALL PARKING LOT DETAILING IS PER DRAWING PACKAGE EXCEPT WHERE NOTED ON THIS ASI.

1. CONCRETE WALKS
2. ASPHALT DRIVE AISLES AND HANDICAPPED PARKING SPACES.
3. BAHIA SOD PARKING AISLES (HATCHED AREA).
4. WOODEN BOLLARD (SEE ATTACHED DETAIL IN THIS ASI #2).
5. HANDICAPPED SIGNAGE.
6. PARKING BUMPER.
7. RELOCATED UTILITY POLES.
8. SOCCER FIELD LIGHT POLES.
9. PAVEMENT STRIPING.
10. HANDICAPPED SYMBOL.
11. HANDICAPPED AISLE.
12. HANDICAPPED RAMP.
13. NEW CONCRETE CURB AND SIDEWALK.





1 Inch = 50 Ft

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SARASOTA, FLORIDA 34236
(941) 954-1718 F: (941) 954-0231

IBI GROUP

PROJECT NUMBER 20245

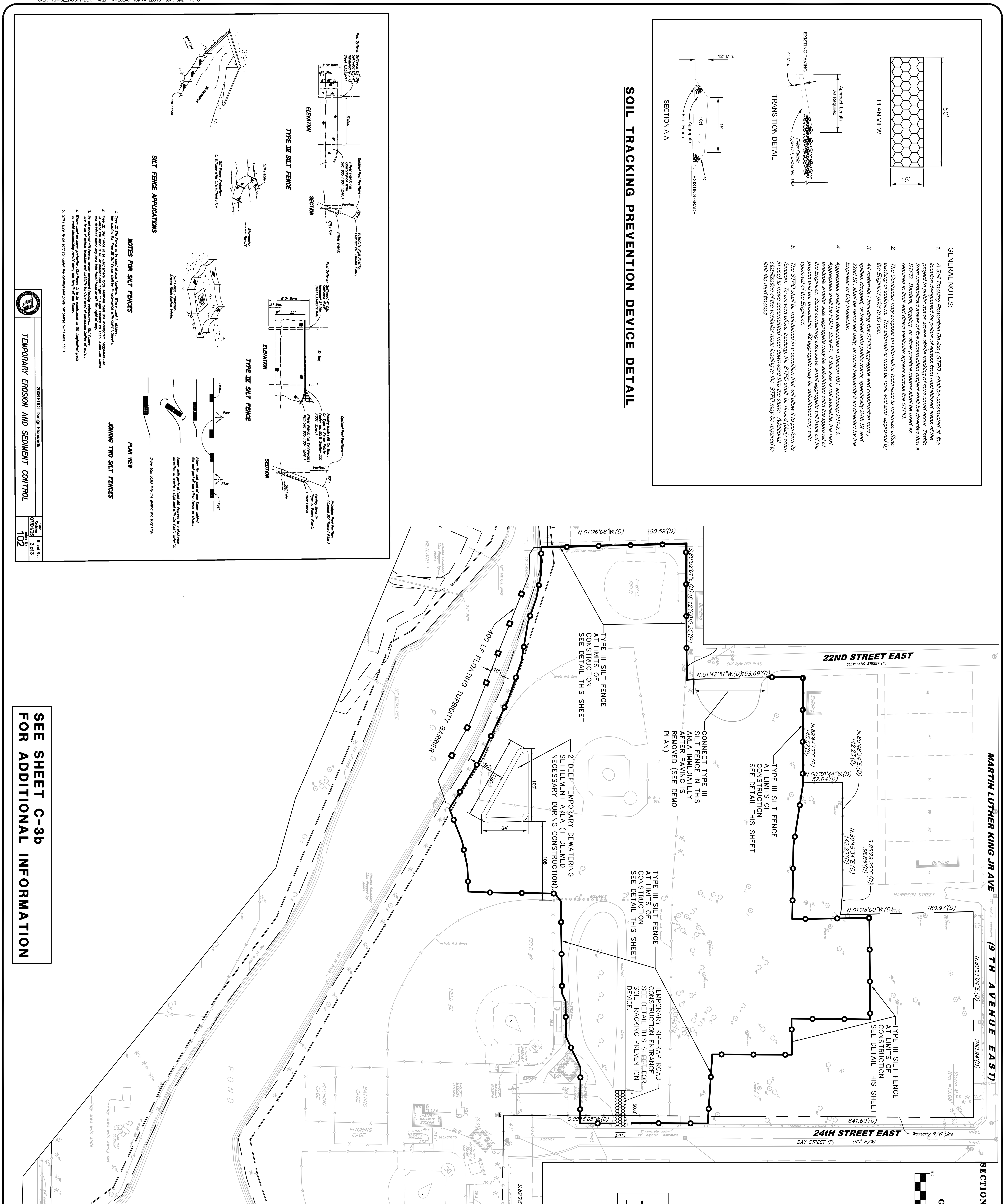
SHEET 1 OF 2

DRAWN: FW
CHECKED: ST
DATE: 10/03/08

NORMA LLOYD PARK
BRADENTON, FLORIDA

ASI #2 PARKING REVISION & ADDITIONAL DETAIL

Drawing: J:\20245_norma_loyd\5.9 Drawings\59civil\layouts\20245-C-3ab.dwg
Aug 26, 2008, 9:06pm Layout: STORMWATER-POLLUTION-PREVENTION-PLAN, Plotted By: wromero
XREF: TS-IBI_24x36TTBLK; XREF: X-20245 NORMA LLOYD PARK BNDY TOPO



Project No. 20245	SHEET NO. C-3a	Anita C. Wang P.E. Florida P.E. No. 57628

IBI GROUP
10921 N. 56th Street
Temple Terrace, FL 33617
Ph (813) 988-9102 FAX (813) 989-2242
EMAIL: engineeringIBItampa@ibigroup.com
Engineering Cert. of Auth. No. 2966

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
NORMA LLOYD PARK IMPROVEMENTS
City of Bradenton Parks and Recreation
MANATEE COUNTY, FLORIDA

Engineering	
Designer: EO/GC	Date: 06-20-08
Drawn By: W.R.	Scale: 1"= 60'
Checked By: S.A.	Project #: 20245

8/21/08 REVISED PER COUNTY AND CITY REVIEW
REVISIONS

SITE DESCRIPTION

This Stormwater Pollution Prevention Plan (SWPPP) is for Norma Lloyd Park Improvements. Construction activities to include clearing, grubbing, excavation, fill, construction of parking areas, buildings and stormwater ponds.

The NORMA LLOYD PARK is located on Martin Luther King Jr (9th Avenue East) in Section 31, Township 34 South, Range 18 East, Manatee County, Florida.

Owner: Client contact:
Jim Staples
Manatee County Property Management Director
P.O. Box 1000
Bradenton, Florida 34206
(941) 748-4501
(941) 749-3034 fax

Civil Engineer: IBI GROUP, INC.
10921 N. 56th STREET, SUITE 200
TEMPLE TERRACE, FL 33617
(813) 988-9102 phone
(813) 989-2242 fax

Construction Plans: C-3a and C-3b

SWFWMD Permit #: 44034262.000

Site Contractor: (TO BE DETERMINED)

Phone:
Fax:
Attn:

SEQUENCE OF CONSTRUCTION EVENTS:

1. Install silt fence, tree baricades and other erosion control features as indicated on construction plans.
2. Remove trees as noted in the construction plans.
3. Install proposed drainage swale / ditch as shown on construction plans.
4. Continue clearing & grubbing areas for drainage ponds and building.
5. Excavate ponds, stabilize pond banks with sod or seed and mulch per plans. Follow special pond excavation notes on plans.
6. Fill building site to grade & begin building construction.
7. Fill remainder of site & install stormwater piping system and storm piping system silt controls.
8. Construct underground utility system and parking lot base, curbing & paving.
9. Final grading and landscaping/sod installation.
10. Clean stormwater system and remove sediments from pond as required.
11. Once all site areas are stabilized, erosion protection devices may be removed.

NAME OF RECEIVING WATERS:

ON-SITE POND

EROSION AND SEDIMENT CONTROLS

STABILIZATION PRACTICES:

Denude only portions of the site expected to be graded or altered within 14 days. In no case denude more than one half the site area at a time.

Temporary Stabilization – Denuded areas, soil stockpiles and other areas of the site where construction activity temporarily ceases for at least 21 days will be stabilized with temporary seed and mulch no later than 14 days after the last construction activity in that area. Hydromulch using locally recommended application for quick germinating ground cover. As an alternative, manually apply rye grain at the rate of 150 pounds per acre (or other quick germinating ground cover at recommended rate for area) along with 10-10-10 fertilizer at rate recommended by manufacturer and apply 3,000 pounds per acre of straw (or other fibrous mulch) secured by crimping. Reapply as required until vegetative cover is established.

Wind Erosion Stabilization – Manage fugitive dust from bare areas and areas of active construction by applying water spray to saturate surface soils. Apply water spray on a daily basis or as needed to maintain minimal dust transport. Monitor fugitive dust on a continuous basis and use additional measures as required to control off-site transport of unacceptable levels of dust. Stabilize area to be paved by spreading base material.

Permanent Stabilization – Permanently stabilize all disturbed areas with pavement, landscaping & mulch, sod, seed & mulch, etc. per plans. Maintain as required.

STRUCTURAL PRACTICES:

Prior to disturbing the site, install staked silt fence barriers and other erosion control measures per plans. Excavate portions of ponds to use as sediment basins and construct diversion swales to route site runoff into sediment basins. Inspect all aspects of the system per the inspection plan and maintain as required. Install additional erosion control measures such as staked hay or straw bales, double row of silt fence, etc. at locations of excessive erosion. Install sediment traps such as geotextile fabric with clean rock cover at sediment pond outfall locations if turbid discharge is noted.

STORM WATER MANAGEMENT:

The permanent storm water system will include curbed and paved parking areas with storm inlets. An underground stormwater piping system will convey stormwater to the ponds. Sediments accumulated in the stormwater system and ponds during construction will be removed prior to completion of the project. All pervious areas of the site disturbed during construction will be revegetated with a permanent vegetative cover.

OTHER CONTROLS

WASTE MANAGEMENT:

Collect and contain all waste materials in a controlled area in accordance with applicable regulations. All trash and construction debris shall be removed from site and properly disposed. No construction debris to be buried on-site. The General Contractor for the site is responsible for assuring that all personnel are instructed regarding the correct procedures for waste disposal and will be responsible for implementing these procedures.

HAZARDOUS WASTE:

Local and state environmental agencies will be notified if any hazardous materials or waste are encountered on the site. Hazardous waste/materials will be identified, removed from the site and properly disposed per applicable regulations. Hazardous materials/waste generated and/or stored on-site will be handled, stored, transported and disposed per applicable regulations. The General Contractor for the site is responsible for assuring that all personnel are instructed regarding the correct procedures for hazardous waste/materials and will be responsible for implementing these procedures.

SANITARY WASTE:

Portable toilet units will be utilized to collect sanitary waste during construction. Waste from portable toilet units to be collected and disposed by licensed sanitary waste hauler in accordance with applicable regulations.

OFF-SITE VEHICLE TRACKING:

Stabilized construction entrances will be constructed to minimize off-site vehicle tracking. Paved streets used for haul routes will be cleaned as needed to remove excess mud, dirt and rock tracked from the site. Dump trucks hauling material from and to the site to be covered with a tarpaulin at all times.

TIMING OF CONTROLS/MEASURES:

The Sequence of Construction (see above) will be followed as practicable.

CERTFICATION OF COMPLIANCE

This Storm Water Pollution Prevention Plan reflects applicable Federal, State and local regulations for stormwater management and erosion and sediment control.

MAINTENANCE/INSPECTION PROCEDURES

EROSION & SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES

* Less than one half of the site will be denuded at one time.
* All control measures will be inspected at least once each week and following any storm event of 0.5 inches or greater.
* All measures will be maintained in good working order and; if repair is necessary, will be initiated within 24 hours of the report.
* Built up sediment will be removed from silt fences when it has reached one-third the height of the fence.
* Silt fence will be inspected for depth of sediment, tears, secure attachment to posts and firm embedment of posts in the ground.
* Sediment basin(s) will be inspected for depth of sediment and built up sediment will be removed when it reaches ten percent of the design capacity and at the end of the job.
* Other erosion control devices installed and diversion swales will be inspected and any needed repairs made within 24 hours of the report.
* Temporary and permanent seed & mulch/sod areas will be inspected for bare spots, washouts and healthy growth. Repairs and reseeding to be initiated within 24 hours of the report.
* A maintenance inspection report will be made after each inspection. A copy of the report to be completed by the inspector is attached. Reports to be kept in a bound notebook at the project site office.
* The General Contractor for the site will assign the Site Superintendent to be responsible for inspections, maintenance and repair activities. The Site Superintendent is authorized to assign responsibility for inspections and maintenance and repair activities to a designated representative(s). General Contractor to advise Owner and Engineer of the names of the Site Superintendent and designated representative(s) and provide 24 hour contact information for same. General Contractor to provide training for Site Superintendent and designated representative(s) to assure they are aware of the inspection and maintenance practices required by this SWPPP.

NON-STORM WATER DISCHARGES:

It is expected that the following non-stormwater discharges will occur from the site during the construction period:

* Water from water line flushing(s).
* Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred).
* Uncontaminated groundwater from dewatering operations.

INVENTORY FOR POLLUTION PREVENTION PLAN:

The following materials and substances may be present on the site during construction:

* Concrete
* Detergents
* Paints (enamel & latex)
* Metal Studs
* Tar
* Fertilizers
* Petroleum Based Products and Fuels
* Cleaning Solvents
* Wood (including pressure treated)
* Masonry Block
* Roofing Shingles
* Chlorine (for disinfection of water lines)
* Asphalt
* Glass
* Stone

GOOD HOUSEKEEPING:

The following good housekeeping practices will be followed at the site during the construction of the project:

* An effort will be made to store only enough product required to do the job
* All materials stored onsite will be stored in a neat, orderly manner in appropriate containers and, if possible, under a roof or other enclosure.
* Products will be kept in their original containers with the original manufacturer's labels.
* Substances will not be mixed with one another unless recommended by the manufacturer.
* Whenever possible, all of a product will be used up before disposing of the container.
* Manufacturer's recommendation for proper use and disposal will be followed.
* The Site Superintendent will inspect daily to endure proper use and disposal of materials onsite.

These practices are use to reduce the risks associated with hazardous materials:

* Products will be kept in their original containers unless they are not re-sealable.
* Original labels and material safety data will be retained since they contain important product information.
* If surplus product must be disposed, manufacturer's as well as local, State and Federal recommended methods for proper handling, transport and disposal will be followed.
* Prior to handling hazardous materials, personnel will receive all required training and wear appropriate personal protective equipment.

PRODUCT SPECIFIC PRACTICES:

Petroleum Products – All on-site vehicles and mobile equipment will be monitored for leaks and receive regular preventive maintenance to reduce the chance for leakage. Petroleum products will be stored in appropriately labeled approved containers. Any asphalt substances used on-site will be applied according to the manufacturer's recommendations.

Fertilizers – Fertilizers used will be applied only in the minimum amounts recommended by the manufacturer. Once applied, the fertilizer will be worked into the soil to limit exposure to storm water. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

Paints – All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged into the storm water system but will be properly disposed according to the manufacturer's recommendations.

Concrete Trucks – The Site Superintendent will designate an area for concrete trucks to wash out or discharge surplus concrete. A containment berm will be installed around this area to prevent runoff to the remainder of the site. Hard debris will be properly disposed off-site upon completion of the project.

SPILL CONTROL PRACTICES:

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup:

* Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
* Material and equipment necessary for spill cleanup will be kept in the material storage area on-site. Equipment and materials will include at a minimum; brooms, dust pans, mops, rags, cloves, goggles, kitty litter, sand sawdust and plastic and metal trash containers specifically designated for this purpose.
* All spills will be cleaned up immediately after discovery.
* The spill area will be kept well ventilated and personnel will wear appropriate protective clothing & equipment to prevent injury from contact with hazardous substances.
* Spills of toxic or hazardous material will be reported to the appropriate local and State government agency, regardless of the size of the spill.
* Should a spill occur, the spill prevention plan will be adjusted to include measures to prevent the same type of spill from re-occurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures implemented will also be included.
* The Site Superintendent will be the spill prevention and cleanup coordinator. The Site Superintendent may designate other site personnel who will receive spill prevention and cleanup training. These individuals may be assigned responsibility for a specific phase of prevention and cleanup. The names and 24 hour contact information for the spill personnel will be posted in the material storage area and in the office trailer on-site.

NOTICE OF TERMINATION:

A Notice of Termination will be submitted to the Florida Department of Environmental Protection after the construction has been completed and the site has undergone final stabilization.

POLLUTION PREVENTION PLAN CERTIFICATION BY OWNER:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

OWNER: MANATEE COUNTY
NAME: JIM STAPLES
TITLE: PROPERTY MANAGEMENT DIRECTOR
SIGNATURE: ______
DATE: ______

CONTRACTORS CERTIFICATION:

I certify under penalty of law that I understand the terms and conditions of the generic National Pollutant Discharge Elimination System (NPDES) permit issued pursuant to Section 403.0885, F.S. that authorizes storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Individual Responsible

NAME: ______
COMPANY: ______
RESPONSIBILITY: ______

General Contractor

NAME: ______
TITLE: ______
SIGNATURE: ______
DATE: ______

Site Contractor

NAME: ______
TITLE: ______
SIGNATURE: ______
DATE: ______
NAME: ______
TITLE: ______
SIGNATURE: ______
DATE: ______

SEE SHEET C-3a FOR ADDITIONAL INFORMATION

WARNING: PLAN SHEET MAY BE REDUCED IN SIZE, CHECK THE SCALE.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
NORMA LLOYD PARK IMPROVEMENTS
City of Bradenton Parks and Recreation
MANATEE COUNTY, FLORIDA

Engineering	
Designer: EO/GC	Date: 06-20-08
Drawn By: W.R.	Scale: NA
Checked By: S.A.	Project #: 20245

8/21/08	REVISED PER COUNTY AND CITY REVIEW
	REVISIONS

IBI GROUP
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Temple Terrace, FL 33617
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EMAIL: engineeringIBItampa@ibigroup.com
Engineering Cert. of Auth. No. 2966

Anita C. Wang P.E.
Florida P.E. No. 57628

SHEET NO. **C-3b** OF

Project No. **20245**

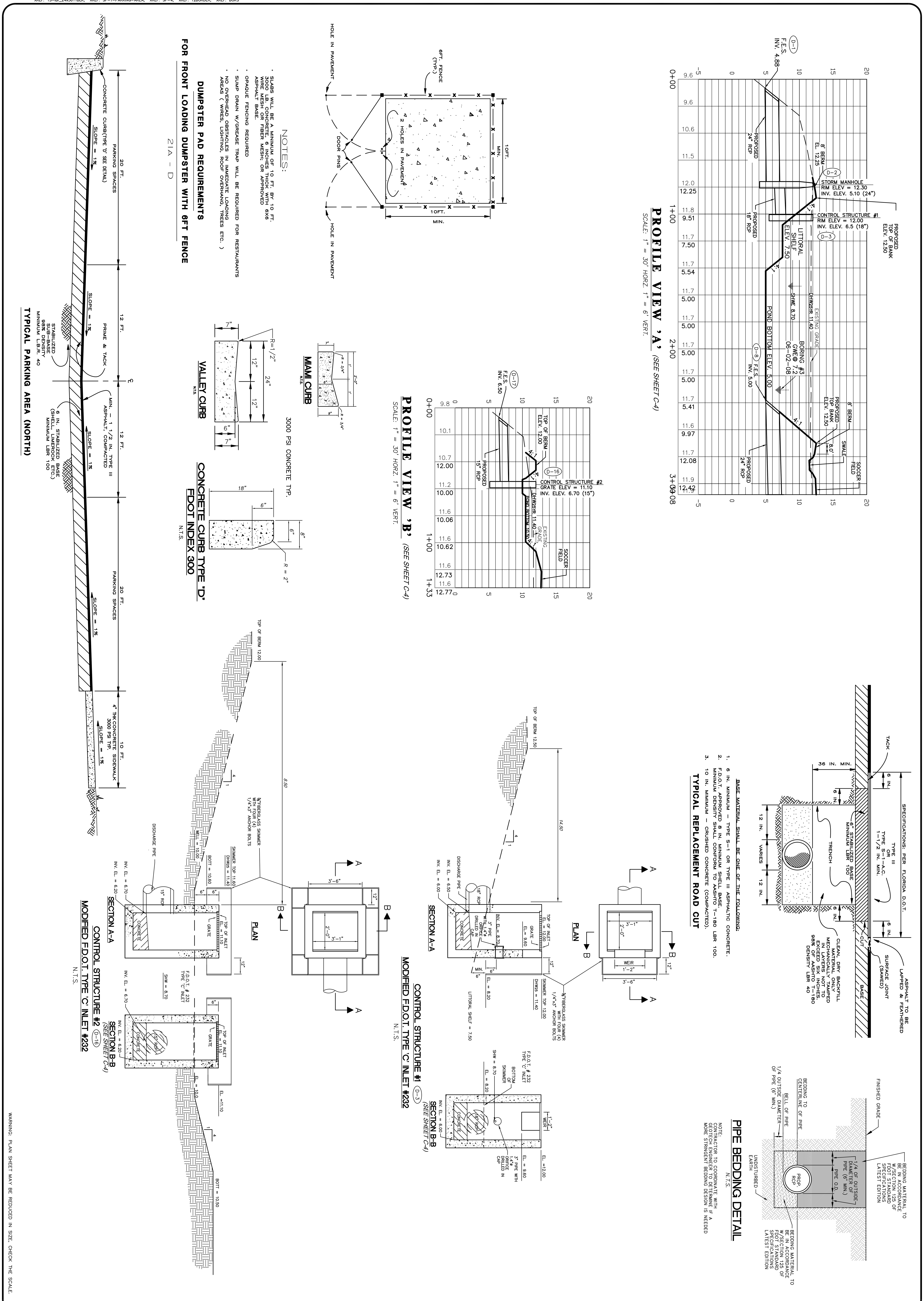
Drawing: J:\20245_norma_loyd\5.9 Drawings\59civil\layouts\20245-C-4a.dwg
Aug 26, 2008, 9:03pm Layout: C-4a--GRADING PLAN, Plotted By: wromero
XREF: TS-IBI_24x36TTBLK; XREF: C3D08contours06-10-08-2004FORMAT; XREF: 20245 NORMA LLOYD PARK BNDY TOPO-6-19; XREF: Phase2-base; XREF: Phase1-base; XREF: PROP-ELEV-FOR-C4; XREF: PAVT-CONC-HATCHES

NOTES:
1. THIS PARCEL IS LOCATED IN FLOOD ZONES "B & C" AS PER THE FLOOD INSURANCE RATE MAP FOR MANATEE COUNTY, FLORIDA COMMUNITY PANEL NUMBER 120155-0010 C, MAP REVISED NOVEMBER 16, 1983.
2. ELEVATIONS SHOWN HEREON ARE BASED ON THE CITY OF BRADENTON BENCHMARK NUMBER "8", LOCATED AT THE NORTHWEST CORNER OF 25TH STREET EAST AND 9TH AVENUE EAST, HAVING AN ELEVATION OF 10.74 FEET, REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929.
DRAINAGE LEGEND
PROPOSED GRATE INLET
PROPOSED MITERED END SECTION (MES)
PROPOSED FLARED END SECTION (FES)
PROPOSED STORM MANHOLE
PROPOSED STORM PIPE
PROPOSED DRAINAGE STRUCTURE NUMBER
EXIISTING SPOT ELEVATION
EXISTING CONTOUR
PROPOSED CONTOUR
PROPOSED TOE OF SLOPE
PROPOSED SPOT ELEVATION AT TOP OF SIDEWALK
PROPOSED SPOT ELEVATION AT EDGE OF PAVEMENT
PROPOSED SPOT ELEVATION AT EDGE OF PAVEMENT
PROPOSED DRAINAGE FLOW
F.F.E. = FINISHED FLOOR ELEVATION
SECTION LETTER
SECTION
SECTION LOCATION
EMBANKMENT
GRADE BREAK
LIGHT POLE
PROPOSED PARKING ASPHALT PAVEMENT
PROPOSED CONCRETE
SECTION 31, TOWNSHIP 34 SOUTH, RANGE 18 EAST
MANATEE COUNTY, FLORIDA
NORTH
GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft.
RETENTION POND A (WET)
RETENTION POND B (DRY)
LITTORAL SHELF
22ND STREET EAST
CLEVELAND STREET (P)
9TH AVENUE EAST
BAY STREET (P) 24th STREET EAST
15' BUFFER LINE
WETLAND 1
POND
CONTROL STRUCTURE #1
CONTROL STRUCTURE #2
CONSTRUCT 2' VALLEY CURB SEE DETAIL- SHEET C-5
NOTE:
ALL PROPOSED ELEVATIONS SHOWN ON CIVIL PLANS ARE REFERENCING EDGE OF PAVEMENT (E.O.P.). SEE LANDSCAPE PLANS FOR LOCATION OF PROPOSED CURBINGS.
Key Map
SHEET 4
SITE
MARTIN LUTHER KING JR AVE (9TH AVE E)
WARNING: PLAN SHEET MAY BE REDUCED IN SIZE. CHECK THE SCALE.

Project No. 20245	SHEET NO. C-4 OF	Anita C. Wang P.E. Florida P.E. No. 57628	IBI GROUP — 10921 N. 56th Street, Temple Terrace, FL 33617; Ph (813) 988-9102 FAX (813) 989-2242; EMAIL: engineeringIBItampa@ibigroup.com; Engineering Cert. of Auth. No. 2966	GRADING / DRAINAGE PLAN — NORMA LLOYD PARK IMPROVEMENTS — City of Bradenton Parks and Recreation — MANATEE COUNTY, FLORIDA

Engineering	
Designer: EO/GC	Date: 07-15-08
Drawn By: W.R.	Scale: 1"= 40'
Checked By: S.A.	Project # 20245

Date	REVISIONS
8/21/08	REVISED PER COUNTY AND CITY COMMENTS


PROFILE VIEW 'A' (SEE SHEET C-4)
SCALE: 1" = 30' HORZ. 1" = 6' VERT.
PROFILE VIEW 'B' (SEE SHEET C-4)
SCALE: 1" = 30' HORZ. 1" = 6' VERT.
STORM MANHOLE
RIM ELEV = 12.30
INV. ELEV. 5.10 (24")
CONTROL STRUCTURE #1
RIM ELEV = 12.00
INV. ELEV. 6.5 (18")
CONTROL STRUCTURE #2
GRATE ELEV = 11.10
INV. ELEV. 6.70 (15")
NOTES:
* SLABS WILL BE A MINIMUM OF 10 FT. BY 10 FT. 3000 LB. CONCRETE 6 INCHES THICK WITH 6X6 WIRE MESH OR FIBER MESH OR APPROVED ASPHALT BASE.
* OPAQUE FENCING REQUIRED
* SUMP DRAIN W/GREASE TRAP WILL BE REQUIRED FOR RESTAURANTS
* NO OVERHEAD OBSTACLES IN IMMEDIATE LOADING AREAS (WIRES, LIGHTING, ROOF OVERHANG, TREES ETC.)
DUMPSTER PAD REQUIREMENTS
FOR FRONT LOADING DUMPSTER WITH 6FT FENCE
21A - D
TYPICAL PARKING AREA (NORTH)
MIAMI CURB
VALLEY CURB
3000 PSI CONCRETE TYP.
CONCRETE CURB TYPE 'D'
FDOT INDEX 300
N.T.S.
CONTROL STRUCTURE #1
MODIFIED F.D.O.T. TYPE 'C' INLET #232
N.T.S.
CONTROL STRUCTURE #2
MODIFIED F.D.O.T. TYPE 'C' INLET #232
N.T.S.
SECTION A-A
SECTION B-B
PLAN
BASE MATERIAL SHALL BE ONE OF THE FOLLOWING:
1. 6 IN. MINIMUM - TYPE S-1 OR TYPE III ASPHALTIC CONCRETE.
2. F.D.O.T. APPROVED 8 IN. MINIMUM SHELL BASE. MINIMUM DENSITY SHALL CONFORM TO AASHTO T-180 LBR 100.
3. 10 IN. MINIMUM - CRUSHED CONCRETE (COMPACTED).
TYPICAL REPLACEMENT ROAD CUT
PIPE BEDDING DETAIL
N.T.S.
NOTE:
CONTRACTOR TO COORDINATE WITH GEOTECH ENGINEER TO DETERMINE IF A MORE STRINGENT BEDDING DESIGN IS NEEDED
WARNING: PLAN SHEET MAY BE REDUCED IN SIZE. CHECK THE SCALE.

Project No. 20245	SHEET NO. C-5 OF	Anita C. Wang P.E. Florida P.E. No. 57628

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EMAIL: engineeringIBItampa@ibigroup.com
Engineering Cert. of Auth. No. 2966

DRAINAGE DETAILS

NORMA LLOYD PARK IMPROVEMENTS

City of Bradenton Parks and Recreation

MANATEE COUNTY, FLORIDA

Engineering	
Designer: EO/GC	Date: 05-21-08
Drawn By: W.R.	Scale: AS NOTED
Checked By: S.A.	Project #: 20245

REVISIONS	
8/21/08	REVISED PER COUNTY AND CITY COMMENTS

Bradenton Fire Department

Hydrant Flow Test By Hydrant

Hydrant Number = "2-176 " and Date
Between {01/01/2004} And {05/22/2008}

2-176	2307 9TH AVE E				MUELLER		
Date	Static	Residual	Pitot	Pitot 2	GPM	20 PSI	10 PSI
04/15/2004	50	46	28.00	0.00	2633	3469	
	<No Staff Member Listed>						
06/22/2005	54	50	30.00	0.00	2918	3747	
	<No Staff Member Listed>						
06/06/2006	60	56	28.00	0.00	888	3079	
3684	Mantone, John J						
09/27/2007	54	48	38.00	0.00	1034	2638	
2944	Heiting, Steven W						
02/19/2008	56	50	44.00	0.00	1113	2929	
6324	Ghidoni, Michael J						
Subtotal Flow Tests:	5		Min:				
			Max:				
			Avg:				
Total Flow Tests:	5						

5 yr. avg. @ 20 psi = 3172 GPM

Bradenton Fire Department

Hydrant Flow Test By Hydrant

Hydrant Number = "2-348 " and Date
Between {01/01/2004} And {05/23/2008}

2-348	1024 24TH ST E				MUELLER		
Date	Static	Residual	Pitot	Pitot 2	GPM	20 PSI	10 PSI
06/23/2004	56	40	28.00	0.00	1374	1744	
	<No Staff Member Listed>						
08/30/2005	56	38	28.00	0.00	1289	1637	
	<No Staff Member Listed>						
06/06/2006	58	48	26.00	0.00	856	1760	
3684	Mantone, John J						
06/14/2007	54	40	36.00	0.00	1007	1626	
2944	Heiting, Steven W						
05/22/2008	60	41	32.00	0.00	769	1150	
2530	Williams, Eddie Dennis						
Subtotal Flow Tests:	5		Min:				
			Max:				
			Avg:				
Total Flow Tests:	5						

5 yr. avg. @ 20 psi = 1583 gpm

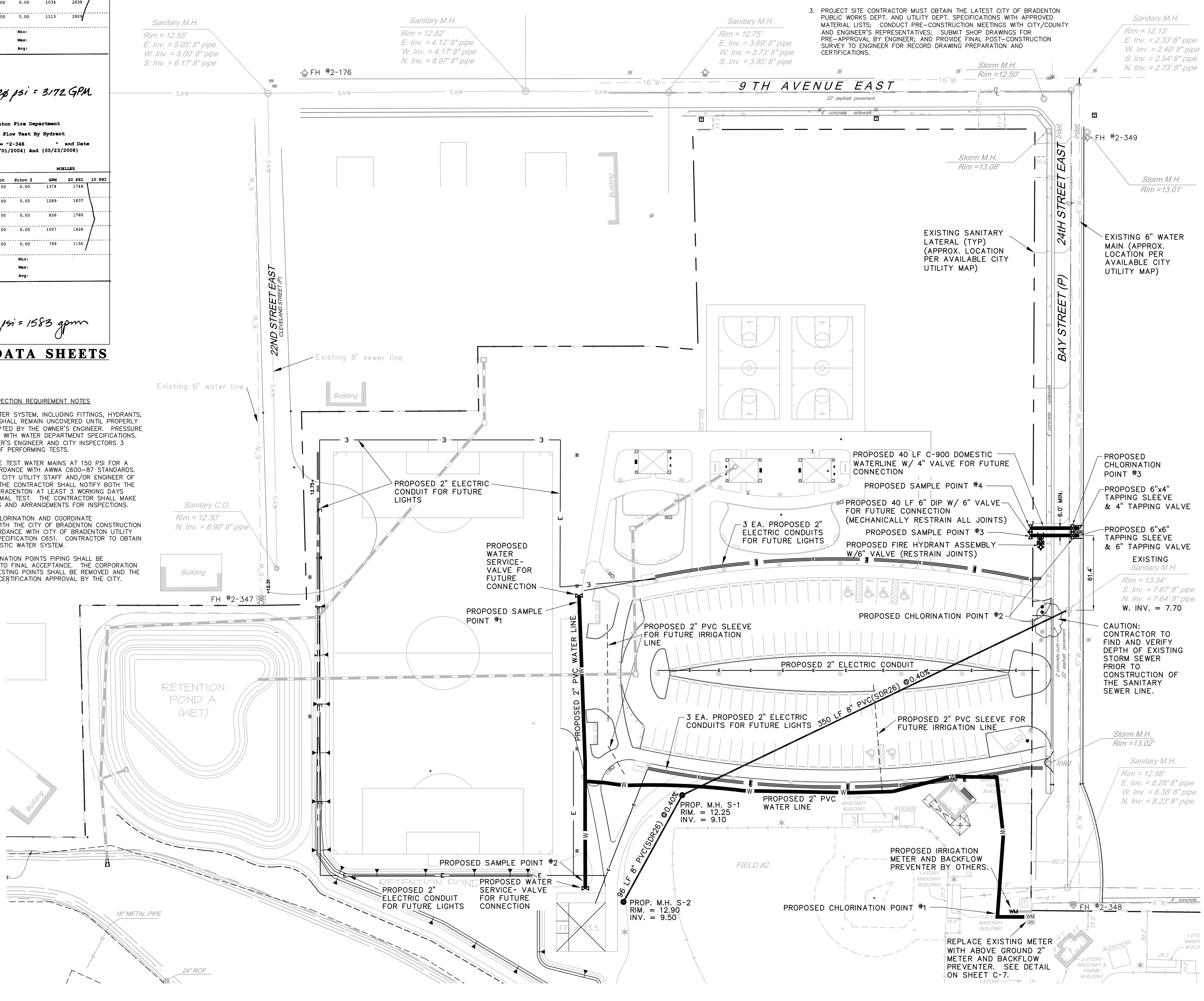
FIRE FLOW DATA SHEETS

WATER SYSTEM TESTING AND INSPECTION REQUIREMENT NOTES

1. ALL COMPONENTS OF THE WATER SYSTEM, INCLUDING FITTINGS, HYDRANTS, CONNECTIONS, AND VALVES SHALL REMAIN UNCOVERED UNTIL PROPERLY PRESSURE TESTED AND ACCEPTED BY THE OWNER'S ENGINEER. PRESSURE TESTS TO BE IN ACCORDANCE WITH WATER DEPARTMENT SPECIFICATIONS. CONTRACTOR TO NOTIFY OWNER'S ENGINEER AND CITY INSPECTORS 3 WORKING DAYS IN ADVANCE OF PERFORMING TESTS.
2. CONTRACTOR SHALL PRESSURE TEST WATER MAINS AT 150 PSI FOR A PERIOD OF 2 HOURS IN ACCORDANCE WITH AWWA C600-87 STANDARDS. TEST MUST BE WITNESSED BY CITY UTILITY STAFF AND/OR ENGINEER OF RECORD'S REPRESENTATIVE. THE CONTRACTOR SHALL NOTIFY BOTH THE ENGINEER AND THE CITY OF BRADENTON AT LEAST 3 WORKING DAYS PRIOR TO START OF ANY FORMAL TEST. THE CONTRACTOR SHALL MAKE ALL NECESSARY APPLICATIONS AND ARRANGEMENTS FOR INSPECTIONS.
3. CONTRACTOR TO PERFORM CHLORINATION AND COORDINATE BACTERIOLOGICAL SAMPLING WITH THE CITY OF BRADENTON CONSTRUCTION INSPECTION SECTION IN ACCORDANCE WITH CITY OF BRADENTON UTILITY SPECIFICATIONS AND AWWA SPECIFICATION C651. CONTRACTOR TO OBTAIN SAMPLE CLEARANCE ON DOMESTIC WATER SYSTEM.
4. ALL TEST POINTS AND CHLORINATION POINTS PIPING SHALL BE COMPLETELY REMOVED PRIOR TO FINAL ACCEPTANCE. THE CORPORATION STOP FOR THE TEMPORARY TESTING POINTS SHALL BE REMOVED AND THE WATER MAIN PLUGGED UPON CERTIFICATION APPROVAL BY THE CITY.

GENERAL UTILITY NOTES

1. THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER OF RECORD CERTIFIED UTILITY SYSTEM RECORD DRAWINGS, SIGNED AND SEALED BY A FLORIDA REGISTERED PROFESSIONAL LAND SURVEYOR. THE RECORD DRAWINGS SHALL CONTAIN SUFFICIENT INFORMATION AS REQUIRED FOR CERTIFICATION OF THE UTILITY SYSTEMS. THE CONTRACTOR SHALL PROVIDE TEN COPIES OF THE CERTIFIED RECORD DRAWINGS TO THE ENGINEER FOR THE AFOREMENTIONED PURPOSE(S).
2. ALL VALVES, FITTINGS AND BENDS IN THE RIGHT-OF-WAY AND ON-SITE SHALL HAVE RESTRAINED MECHANICAL JOINTS. RESTRAINING DEVICES SHALL BE MEGALUG OR APPROVED EQUAL.
3. PROJECT SITE CONTRACTOR MUST OBTAIN THE LATEST CITY OF BRADENTON PUBLIC WORKS DEPT. AND UTILITY DEPT. SPECIFICATIONS WITH APPROVED MATERIAL LISTS; CONDUCT PRE-CONSTRUCTION MEETINGS WITH CITY/COUNTY AND ENGINEER'S REPRESENTATIVES; SUBMIT SHOP DRAWINGS FOR PRE-APPROVAL BY ENGINEER; AND PROVIDE FINAL POST-CONSTRUCTION SURVEY TO ENGINEER FOR RECORD DRAWING PREPARATION AND CERTIFICATIONS.

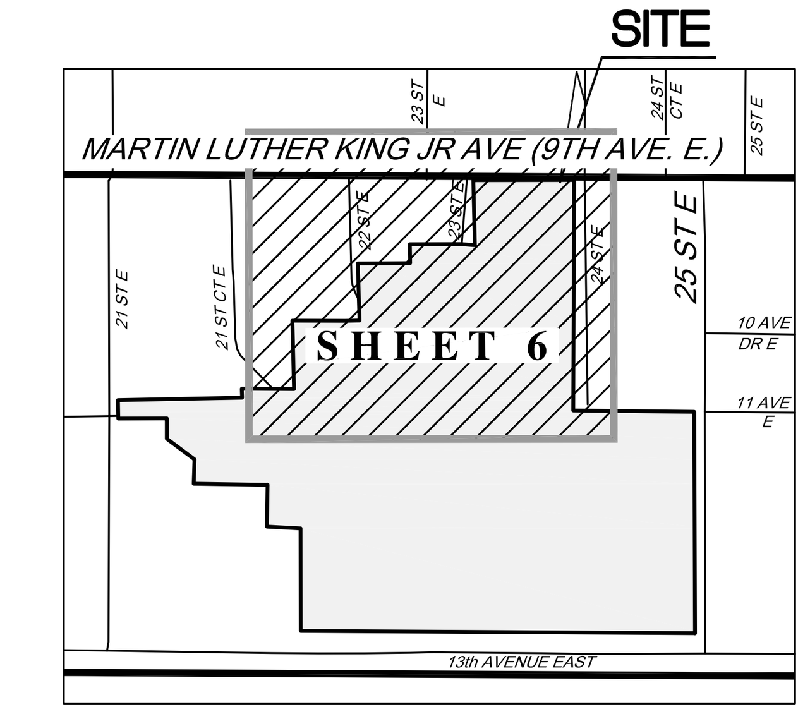


SECTION 31, TOWNSHIP 34 SOUTH, RANGE 18 EAST
MANATEE COUNTY, FLORIDA

GRAPHIC SCALE

(IN FEET)
1 inch = 40 ft.

NORTH



Key Map

NOTES:

1. LOCATIONS, ELEVATIONS AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF THE PREPARATION OF THESE PLANS BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES AFFECTING HIS WORK PRIOR TO CONSTRUCTION.
2. THE EXISTING 6" WATER LINE SIZE TO BE FIELD VERIFIED AND IF FOUND DIFFERENT THE CONTRACTOR IS TO NOTIFY THE ENGINEER.
3. CONTRACTOR TO COORDINATE TAPPING SLEEVE AND FIRE HYDRANT LOCATION WITH THE CITY OF BRADENTON UTILITIES DEPARTMENT.

LOCATION OF PUBLIC WATER SYSTEM MAINS

FOR THE PURPOSE OF THIS SECTION, THE PHRASE "WATER MAINS" SHALL MEAN MAINS, INCLUDING TREATMENT PLANT PROCESS PIPING, CONVEYING EITHER RAW, PARTIALLY TREATED, OR FINISHED DRINKING WATER; FIRE HYDRANT LEADS; AND SERVICE LINES THAT ARE UNDER THE CONTROL OF A PUBLIC WATER SYSTEM AND THAT HAVE AN INSIDE DIAMETER OF THREE INCHES OR GREATER.

(1) HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

(B) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER.

(C) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.

(D) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM".

(2) VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, AND RECLAIMED WATER PIPELINES.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

(B) NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

(C) AT THE UTILITY CROSSINGS DESCRIBED IN PARAGRAPHS (A) AND (B) ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY- OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

(3) SEPARATION BETWEEN WATER MAINS AND SANITARY OR STORM SEWER MANHOLES.

(A) NO WATER MAIN SHALL PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A SANITARY SEWER MANHOLE.

(B) WATER MAINS SHALL NOT BE CONSTRUCTED OR ALTERED TO PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A STORM SEWER MANHOLE OR INLET STRUCTURE. WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SENSIBLE TO COMPLY WITH THIS REQUIREMENT.

WARNING: PLAN SHEET MAY BE REDUCED IN SIZE, CHECK THE SCALE.

UTILITY PLAN
NORMA LLOYD PARK IMPROVEMENTS
City of Bradenton Parks and Recreation
MANATEE COUNTY, FLORIDA

IBI GROUP
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EMAIL: engineeringIBItampa@ibigroup.com
Engineering Cert. of Auth. No. 2966
Anita C. Wong P.E.
Florida P.E. No. 57628

Engineering	
Designer: EO/GC	Date: 05-21-08
Drawn By: W.R.	Scale: 1"= 40'
Checked By: S.A.	Project # 20245

8/21/08 REVISED PER COUNTY AND CITY COMMENTS

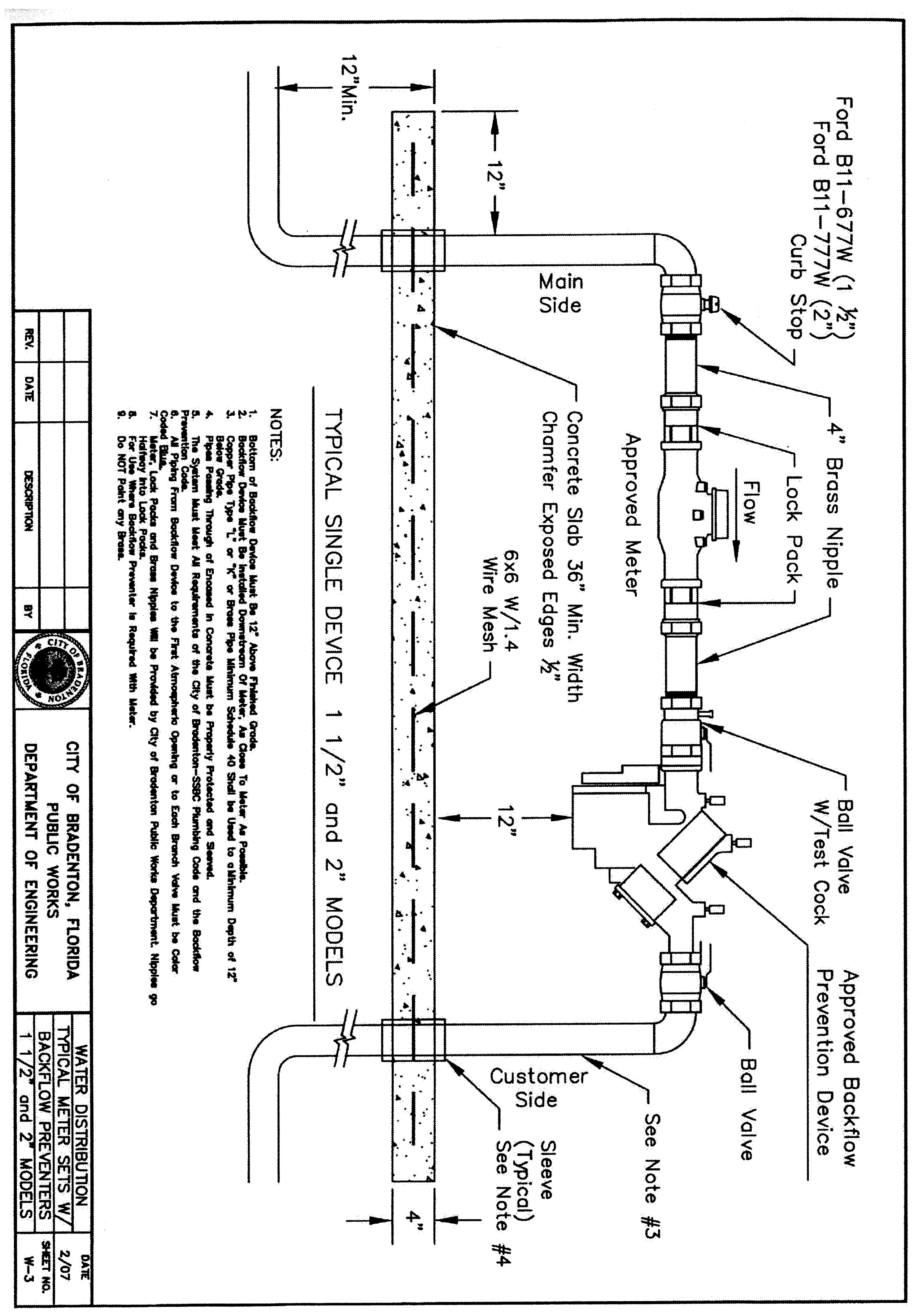
REVISIONS

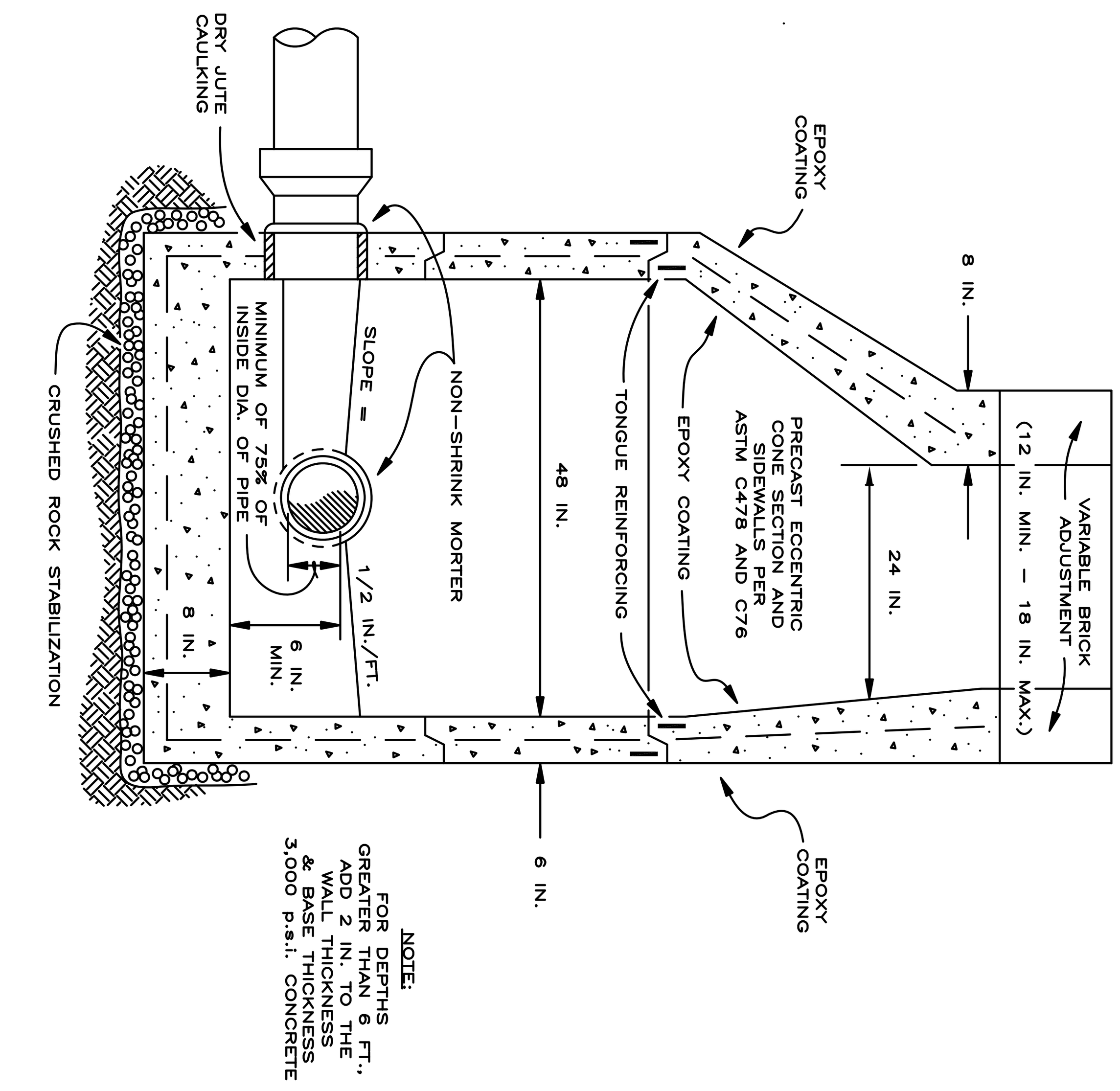
SHEET NO. C-6 OF

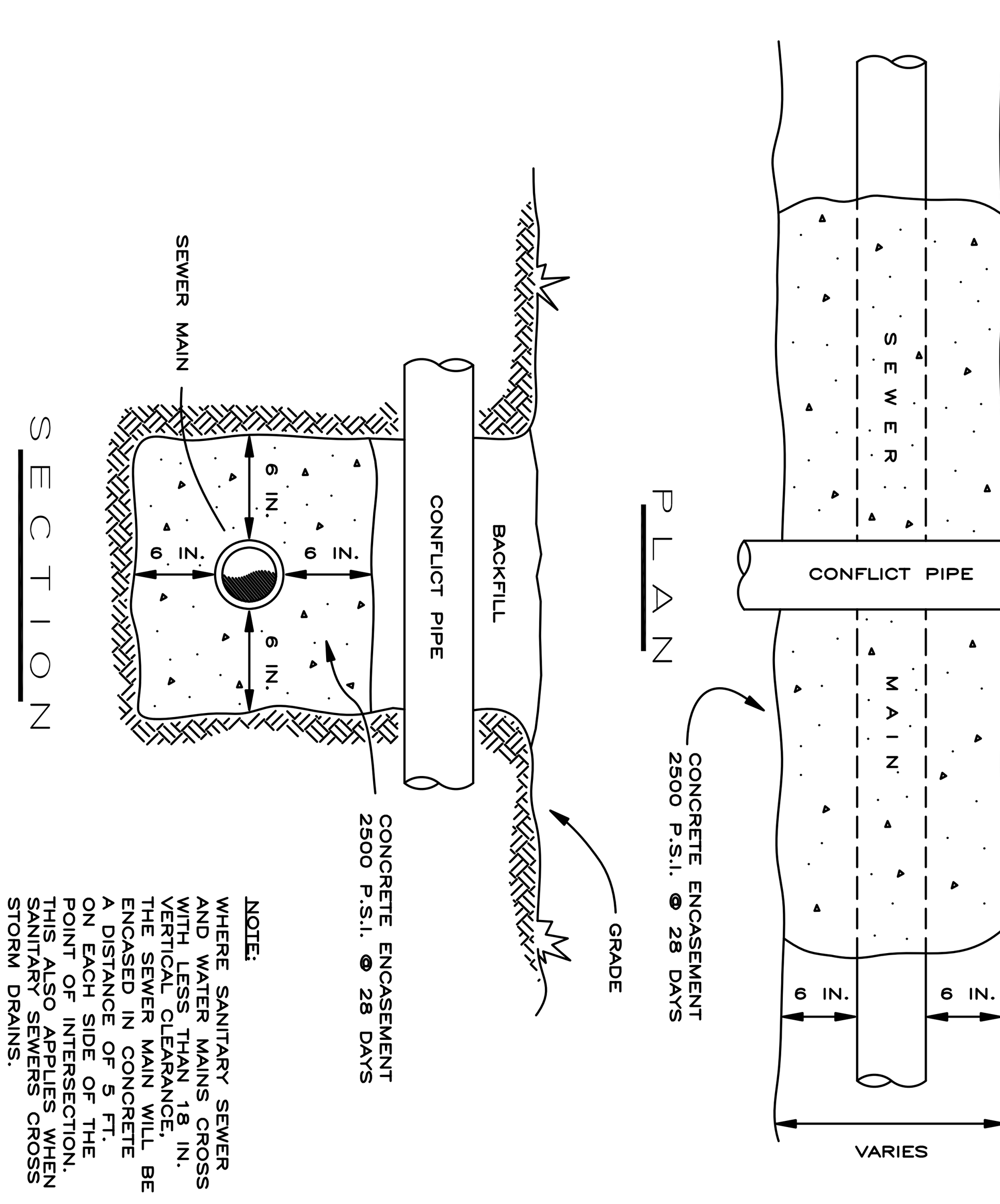
Project No. 20245

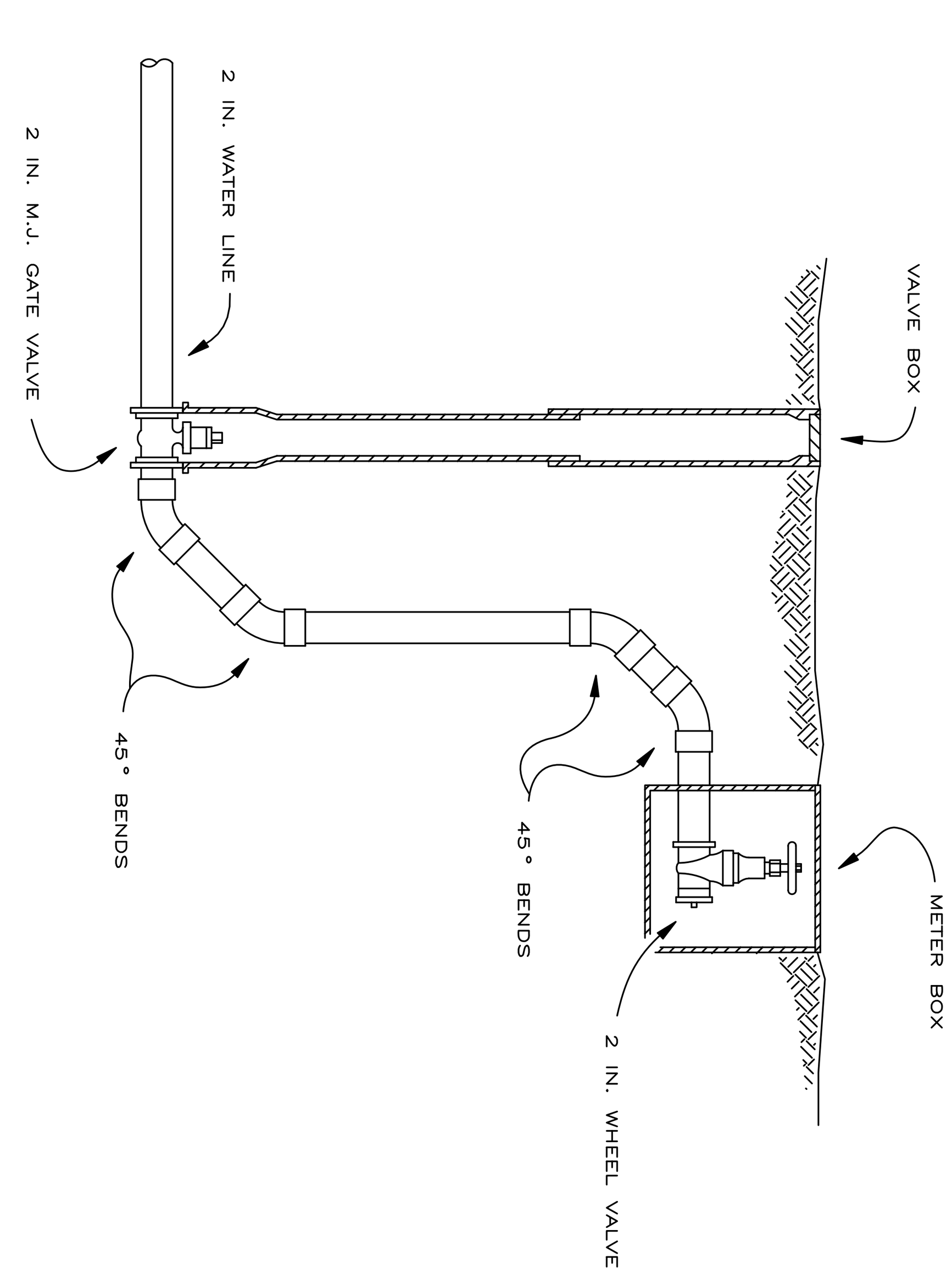
Drawing: J:\20245_norma_loyd\5.9 Drawings\59civil\layouts\20245-C-6.dwg
Aug 26, 2008, 9:12pm Layout: C-6-UTILITY-PLAN, Plotted By: wromero
XREF: TS-IBI_24x36TTBLK; XREF: Phase2-base; XREF: Phase1-base; XREF: 20245 NORMA LLOYD PARK BNDY TOPO-6-19

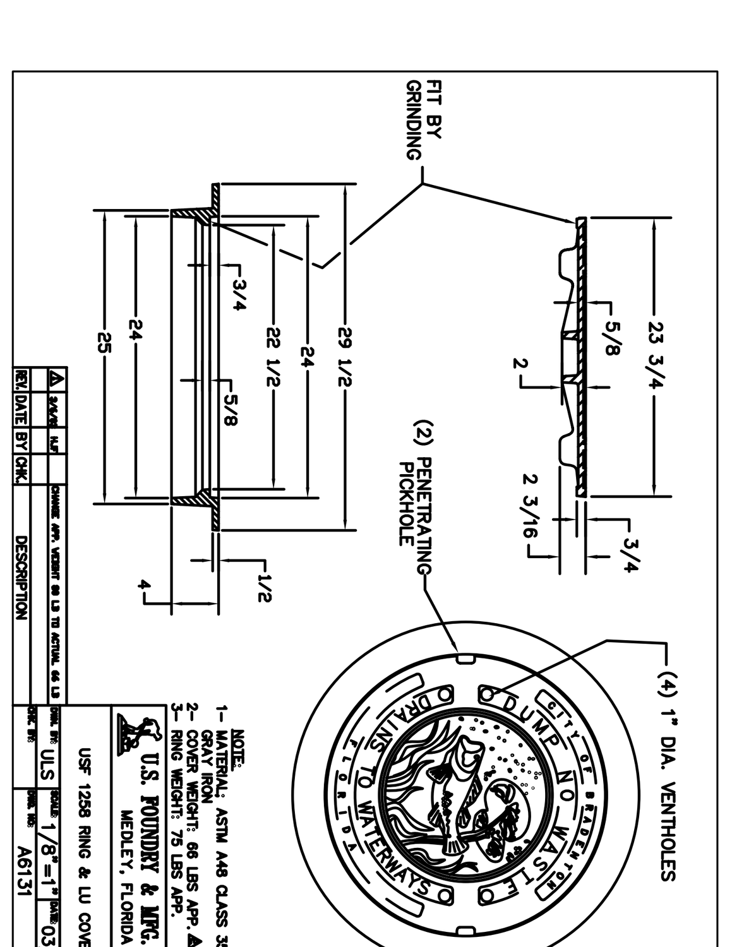
Drawing: J:\20245_norma_loyd\5.9 Drawings\59civil\layouts\20245-C-7.dwg
Aug 26, 2008, 9:14pm Layout: C-7, Plotted By: wromero
XREF: TS-IBI_24x36TTBLK; XREF: SP-7; XREF: SP-12; XREF: SP-18


Ford B11-677W (1 ½")
Ford B11-777W (2")
Curb Stop
12"Min.
12"
Main Side
4" Brass Nipple
Lock Pack
Flow
Approved Meter
Concrete Slab 36" Min. Width
Chamfer Exposed Edges ½"
6x6 W/1.4 Wire Mesh
12"
Ball Valve W/Test Cock
Approved Backflow Prevention Device
Ball Valve
See Note #3
Customer Side
Sleeve (Typical) See Note #4
4"
TYPICAL SINGLE DEVICE 1 1/2" and 2" MODELS
NOTES:
CITY OF BRADENTON, FLORIDA
PUBLIC WORKS
DEPARTMENT OF ENGINEERING
WATER DISTRIBUTION
TYPICAL METER SETS W/ BACKFLOW PREVENTERS
1 1/2" and 2" MODELS
DATE 2/07
SHEET NO. W-3
REV. DATE DESCRIPTION BY


VARIABLE BRICK ADJUSTMENT (12 IN. MIN. - 18 IN. MAX.)
8 IN.
EPOXY COATING
PRECAST ECCENTRIC CONE SECTION AND SIDEWALLS PER ASTM C478 AND C76
24 IN.
TONGUE REINFORCING
EPOXY COATING
48 IN.
NON-SHRINK MORTER
DRY JUTE CAULKING
SLOPE
MINIMUM OF 75% OF INSIDE DIA. OF PIPE
1/2 IN./FT.
6 IN. MIN.
8 IN.
6 IN.
CRUSHED ROCK STABILIZATION
NOTE:
FOR DEPTHS GREATER THAN 6 FT., ADD 2 IN. TO THE WALL THICKNESS & BASE THICKNESS 3,000 p.s.i. CONCRETE.
TYPICAL PRECAST MANHOLE
0 - 6 FT. DEPTH


VARIES
6 IN.
6 IN.
5 FT.
5 FT.
SEWER MAIN
CONFLICT PIPE
CONCRETE ENCASEMENT 2500 P.S.I. @ 28 DAYS
PLAN
GRADE
BACKFILL
CONFLICT PIPE
SEWER MAIN
6 IN.
CONCRETE ENCASEMENT 2500 P.S.I. @ 28 DAYS
SECTION
NOTE:
WHERE SANITARY SEWER AND WATER MAINS CROSS WITH LESS THAN 18 IN. VERTICAL CLEARANCE, THE SEWER MAIN WILL BE ENCASED IN CONCRETE A DISTANCE OF 5 FT. ON EACH SIDE OF THE POINT OF INTERSECTION. THIS ALSO APPLIES WHEN SANITARY SEWERS CROSS STORM DRAINS.
TYPICAL CONCRETE ENCASEMENT





Project No. 20245 | SHEET NO. C-7 OF

Anita C. Wang P.E.
Florida P.E. No. 57628

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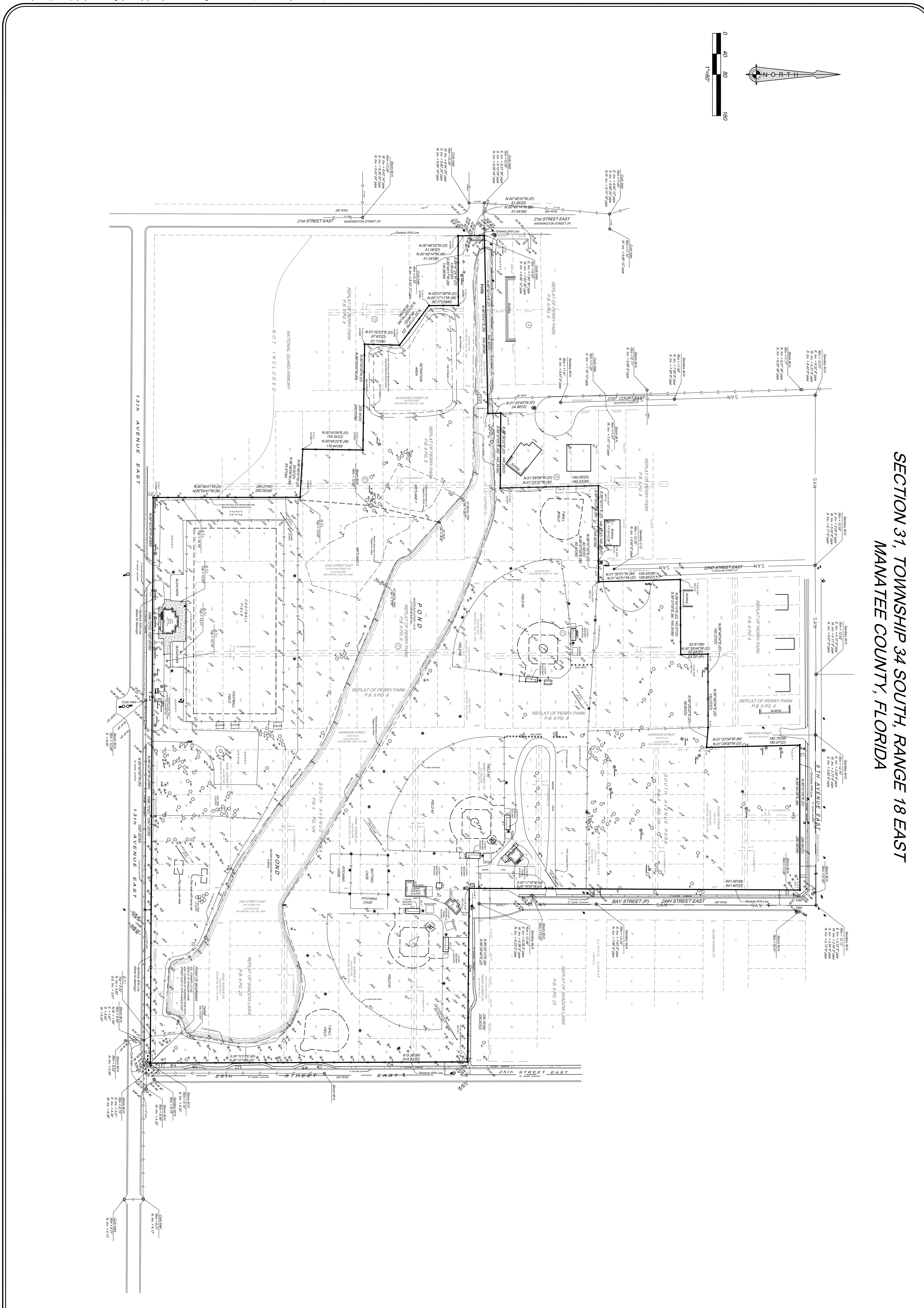
Engineering Cert. of Auth. No. 2966

UTILITY DETAILS
NORMA LLOYD PARK IMPROVEMENTS
City of Bradenton Parks and Recreation
MANATEE COUNTY, FLORIDA

Engineering	
Designer: E0/GC	Date: 05-21-08
Drawn By: W.R.	Scale: AS NOTED
Checked By: S.A.	Project # 20245

8/21/08	REVISED PER COUNTY AND CITY REVIEW
REVISIONS	

J:\20245_norma_lloyd\5.9 Drawings\59civil\layouts\20245-EX-1.dwg SHEET 1 Jun 27, 2008-12;28pm wromero;



SCALE:	EXISTING CONDITIONS	DRAWN: TAC	CHECKED: B.F.
1" = 80'		CREW: KY	FIELD DATE: 4-10-08
PROJECT NUMBER 20245	NORMA LLOYD PARK MANATEE COUNTY, FLORIDA	FIELD BOOK: 2008-B	PAGES: 1-21
SHEET EX-1			

IBI GROUP

IBI GROUP, INC.

HTTP://WWW.IBIGROUP.COM

ENGINEERS CERT OF AUTH #2966 SURVEYORS CA#LB5610

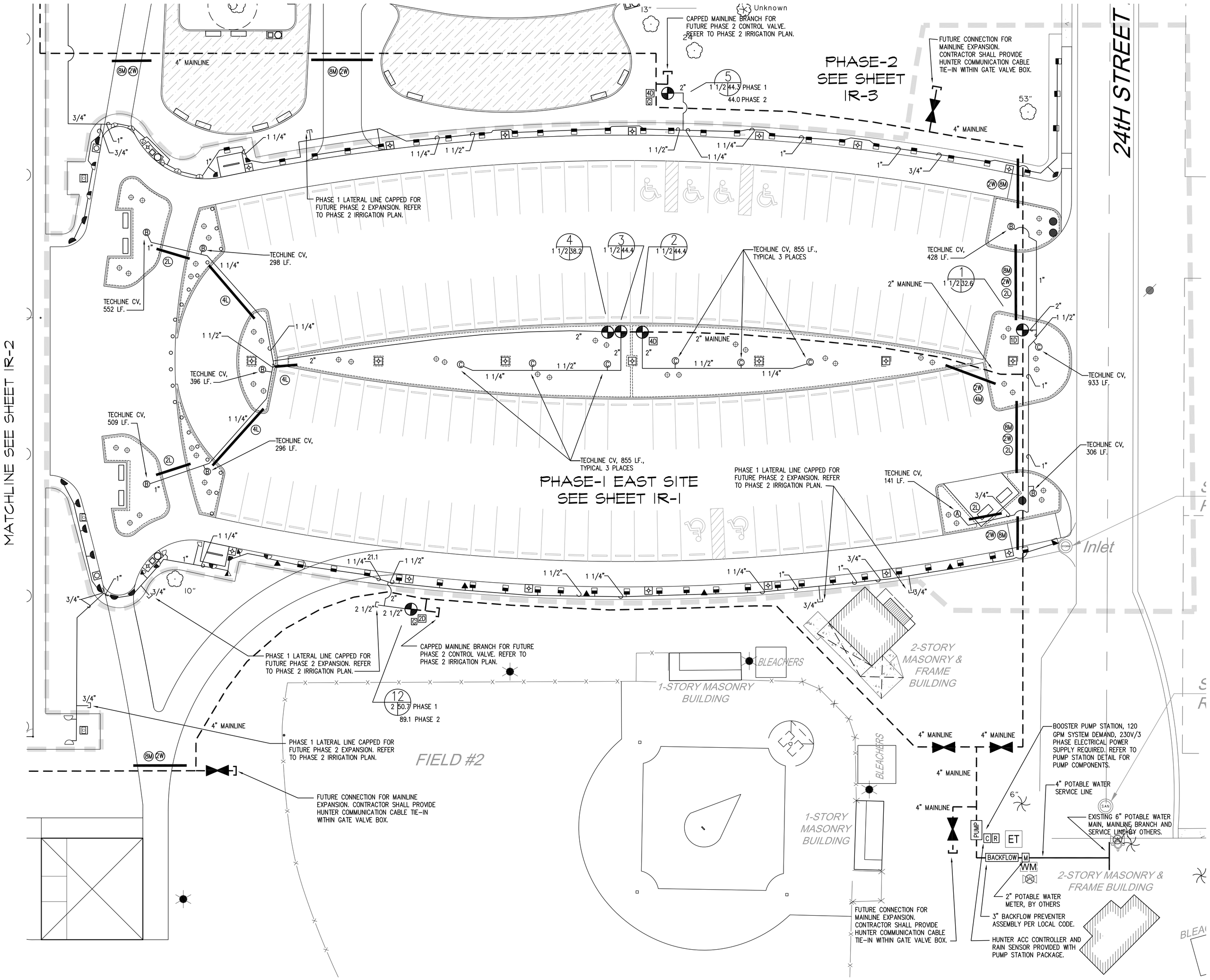
PLANNERS LANDSCAPE ARCHITECTS ENVIRONMENTAL CONSULTANTS

10921 N. 56th STREET, TEMPLE TERRACE, FLORIDA, 33617, (813) 988-9102

2200 PARK CENTRAL BLVD. N., SUITE 100, POMPANO BEACH, FLORIDA, 33064, (954) 974-2200

2603 MAITLAND CENTER PARKWAY, SUITE C, MAITLAND, FLORIDA, 32751, (407) 660-2120

REV.	DATE	DESCRIPTION	BY
10			
9			
8			
7			
6			
5			
4			
3			
2			
1			



IRRIGATION MATERIAL LIST

DESCRIPTION / REMARKS	UNIT	PHASE 1 QUANITY	PHASE 2 QUANITY
NAPLES ELECTRIC BOOSTER PUMP STATION WITH CONCRETE PAD AND 230V ELECTRICAL SUPPLY	EA	1	
HUNTER ACC-99D DECODER CONTROLLER, SUPPLIED WITH PUMP STATION PACKAGE	EA	1	
HUNTER MINI-CLIK RAIN SENSOR	EA	1	
230V/3 PHASE ELECTRICAL POWER DROP W/SUPPLY WIRES AND ELECTRICAL PANEL PER CODE	EA	1	
4" CL 200 PVC GASKETTED MAINLINE, W/FITTINGS & THRUST BLOCKS	LF	2,000	
2" CL 200 PVC SOLVENT WELD MAINLINE, W/FITTINGS & THRUST BLOCKS	LF	165	
3" BACKFLOW PREVENTER ASSEMBLY, PER CODE	EA	1	
8" SCHEDULE 40 SLEEVE	LF	170	
6" SCHEDULE 40 SLEEVE	LF		30
4" SCHEDULE 40 SLEEVE	LF	110	80
2" SCHEDULE 40 SLEEVE	LF	295	70
HUNTER I-40 SERIES ROTOR W/1" SWING JOINT	EA	28	
HUNTER I-20 SERIES ROTOR W/3/4" FUNNY PIPE AT 18" LONG	EA	41	17
RAIN BIRD 1800 SERIES SPRINKLER W/1/2" FUNNY PIPE AT 18" LONG	EA	86	168
RAIN BIRD 1401 BUBBLER W/1/2" FUNNY PIPE AT 18" LONG	EA	17	12
RAIN BIRD 1402 BUBBLER W/1/2" FUNNY PIPE AT 18" LONG	EA	5	7
HUNTER ICV 101G CONTROL VALVE AND VALVE BOX	EA		1
HUNTER ICV 151G CONTROL VALVE AND VALVE BOX	EA	5	
HUNTER ICV 201G CONTROL VALVE AND VALVE BOX	EA	7	2
HUNTER ACCU-SET PRESSURE REGULATOR	EA	4	2
4" GATE VALVE & VALVE BOX	EA	6	
BERMAD AIR RELEASE VALVE WITH VALVE BOX	EA	1	
HUNTER ICD-100 SINGLE ADDRESS DECODER	EA	2	
HUNTER ICD-200 TWO ADDRESS DECODER	EA	2	
HUNTER ICD-400 FOUR ADDRESS DECODER	EA	3	
5/8" X 8' COPPER GROUNDING ROD	EA	3	
NETAFIM TECHLINE CV, TLCV9-1210 WITH FITTINGS AND STAKES	LF	8,989	4,177
RAIN BIRD PC-12 (12 GPH) PRESSURE COMPENSATING MODULE WITH PC DIFFUSER CAP.	EA	48	33
HUNTER ID1BLU 14 AWG COMMUNICATION WIRE	LF	2,200	

NORTH

20 0 10 20 40

1 Inch = 20 Ft

COLBORN DESIGN GROUP, INC.
IRRIGATION DESIGN / WATER MANAGEMENT
803 87th Street Court NW - Bradenton, FL 34209 - (941) 795-7458 - email: design@colborndg.com

IBI GROUP, INC.
HTTP://WWW.IBIGROUP.COM
ENGINEERS CERT OF AUTH #2366 SURVEYORS AC#LB5610
PLANNERS LANDSCAPE ARCHITECTS ENVIRONMENTAL CONSULTANTS
1519 MAIN STREET
SARASOTA, FL 34236
PHONE: (941) 954-1718
FAX: (941) 954-0233

IBI GROUP

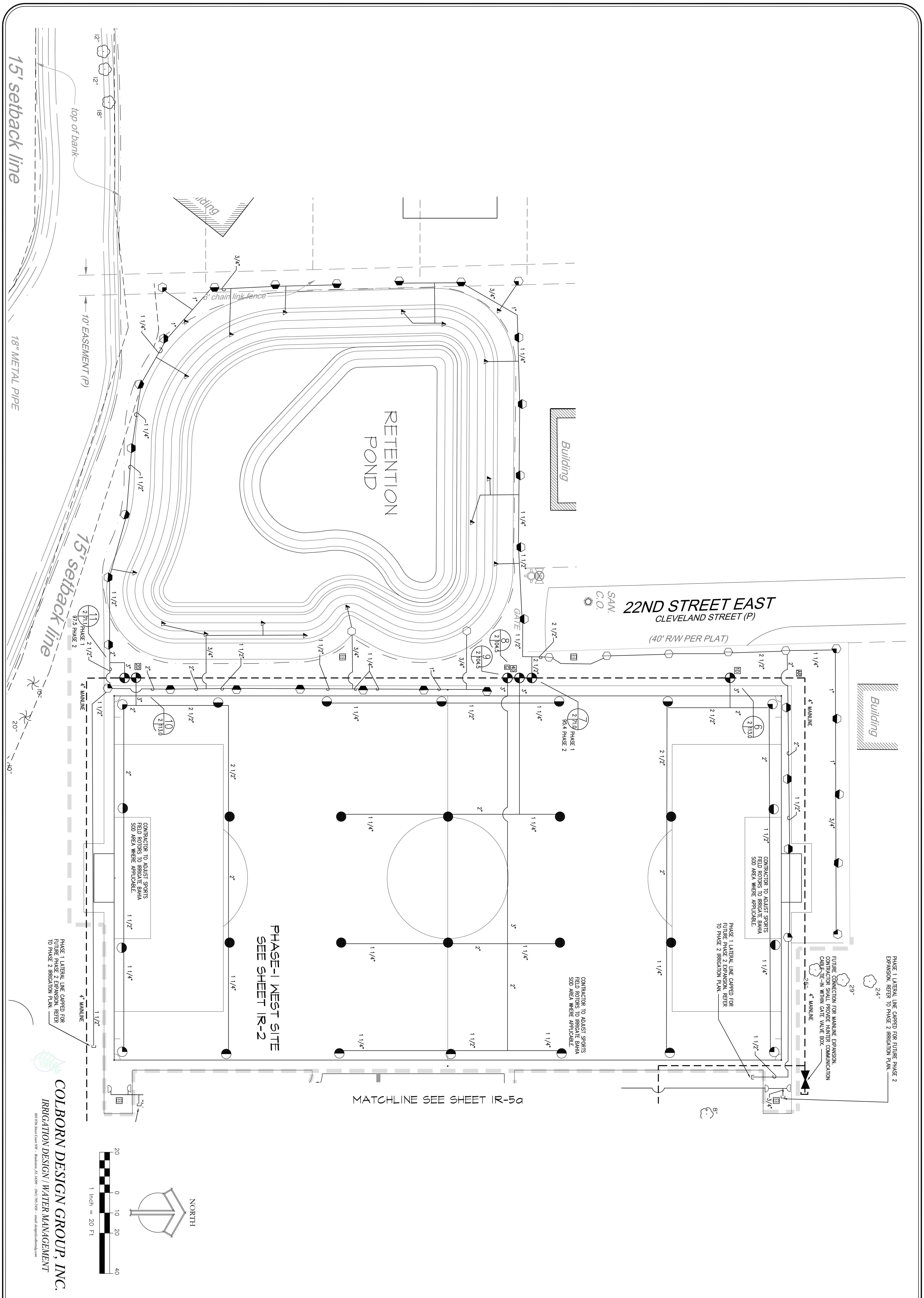
REV.	DATE	DESCRIPTION	BY

DRAWN: SC
DESIGNED: SC
CHECKED: SC
DATE: 09/02/08

NORMA LLOYD PARK
BRADENTON, FLORIDA
PHASE-1 IRRIGATION PLAN
EAST SITE

20245

SHEET
IR-1


15' setback line
top of bank
18" METAL PIPE
10' EASEMENT (P)
6' chain link fence
RETENTION POND
Building
GATE
SAN. C.O.
22ND STREET EAST
CLEVELAND STREET (P)
(40' R/W PER PLAT)
4" MAINLINE
CONTRACTOR TO ADJUST SPORTS FIELD ROTORS TO IRRIGATE BAHIA SOD AREA WHERE APPLICABLE.
PHASE-I WEST SITE SEE SHEET IR-2
PHASE 1 LATERAL LINE CAPPED FOR FUTURE PHASE 2 EXPANSION. REFER TO PHASE 2 IRRIGATION PLAN.
FUTURE CONNECTION FOR MAINLINE EXPANSION. CONTRACTOR SHALL PROVIDE HUNTER COMMUNICATION CABLE TIE-IN WITHIN GATE VALVE BOX.
MATCHLINE SEE SHEET IR-5a
COLBORN DESIGN GROUP, INC.
IRRIGATION DESIGN / WATER MANAGEMENT
1 Inch = 20 Ft.
NORTH

SHEET IR-2	20245	NORMA LLOYD PARK BRADENTON, FLORIDA PHASE-1 IRRIGATION PLAN WEST SITE	DRAWN: SC DESIGNED: SC CHECKED: SC DATE: 09/02/08

IBI GROUP

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PLANNERS LANDSCAPE ARCHITECTS ENVIRONMENTAL CONSULTANTS
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SARASOTA, FL 34236
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FAX: (941) 954-0231

REV.	DATE	DESCRIPTION	BY

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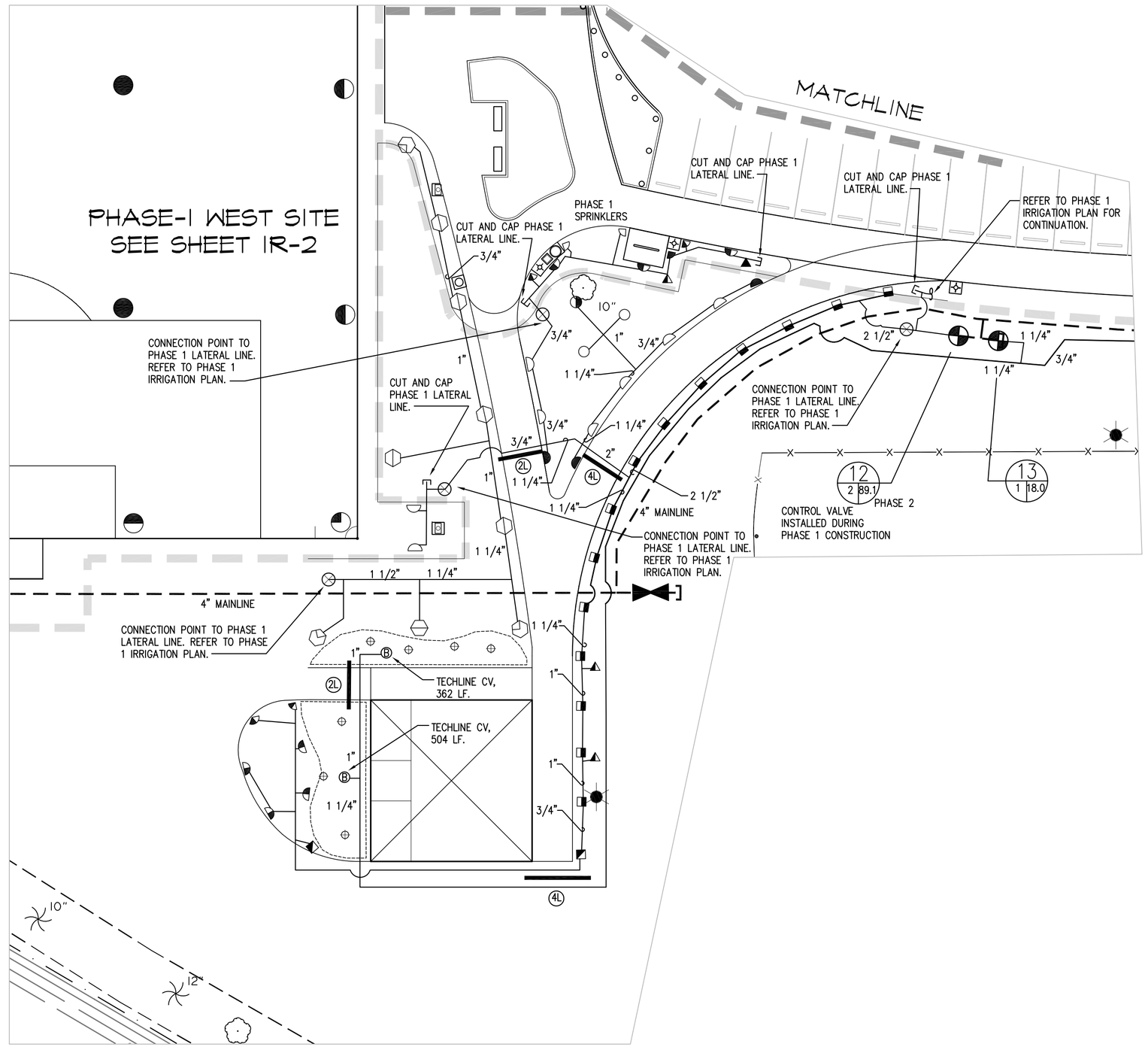
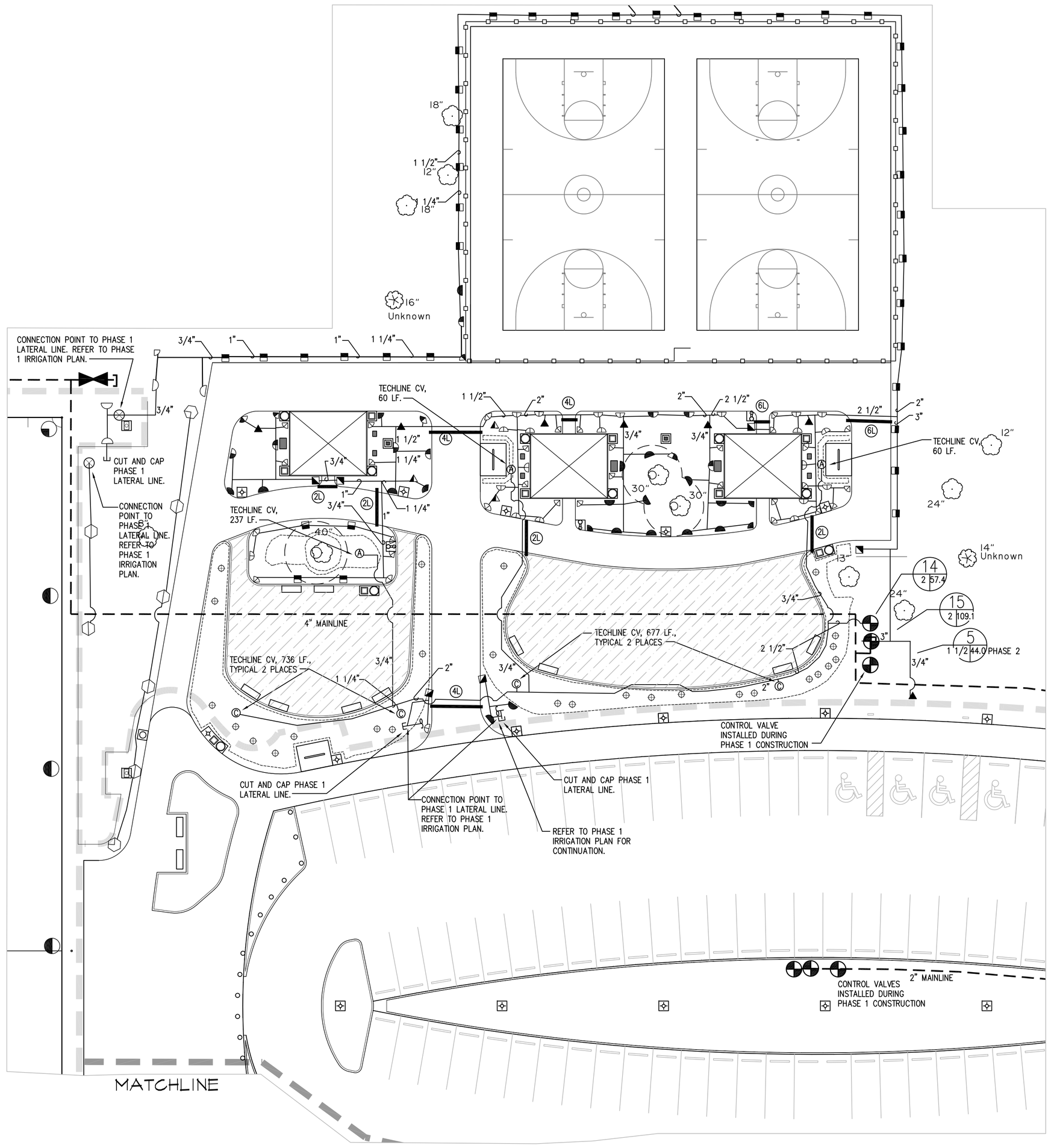
IRRIGATION DESIGN | WATER MANAGEMENT
803 87th Street Court NW - Bradenton, FL. 34209 - (941) 795-7458 - email: design@colbornedg.com

NORTH

20 0 10 20 40

1 Inch = 20 Ft





REV.	DATE	DESCRIPTION	BY

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ENGINEERS CERT OF AUTH #2966 SURVEYORS AC#LB5610
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IBI GROUP

DRAWN: SC
DESIGNED: SC
CHECKED: SC
DATE: 09/02/08

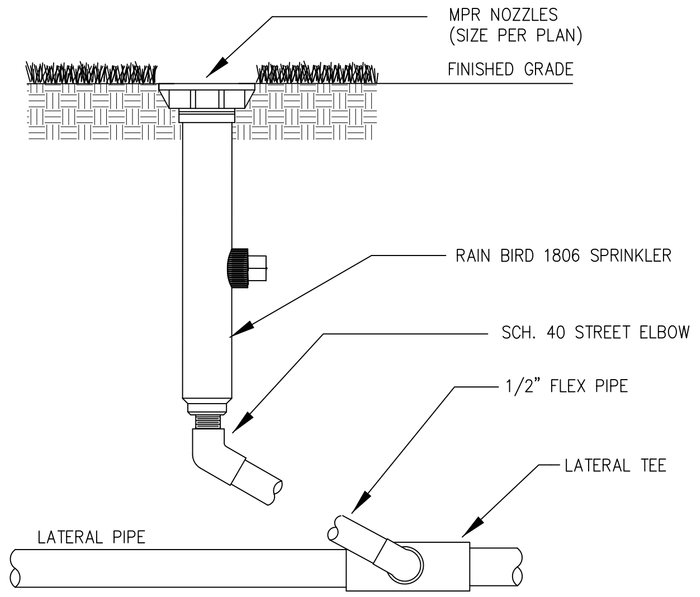
NORMA LLOYD PARK
BRADENTON, FLORIDA

PHASE-2 IRRIGATION PLAN

20245

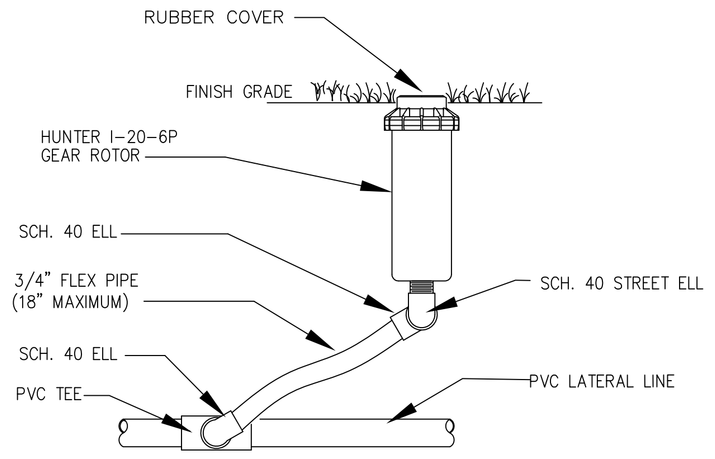
SHEET
IR-3

NOTE: RAIN BIRD 1806 SPRINKLERS TO BE INSTALLED UNLESS NOTED OTHERWISE.



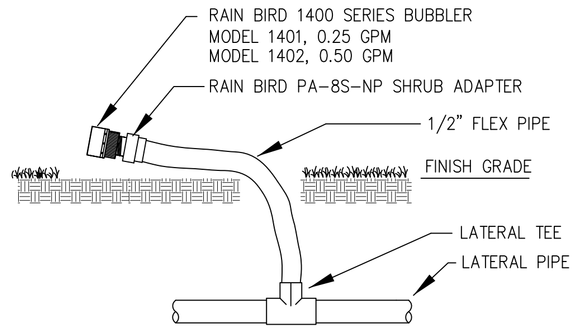
RAIN BIRD 1806 SPRINKLER

NTS



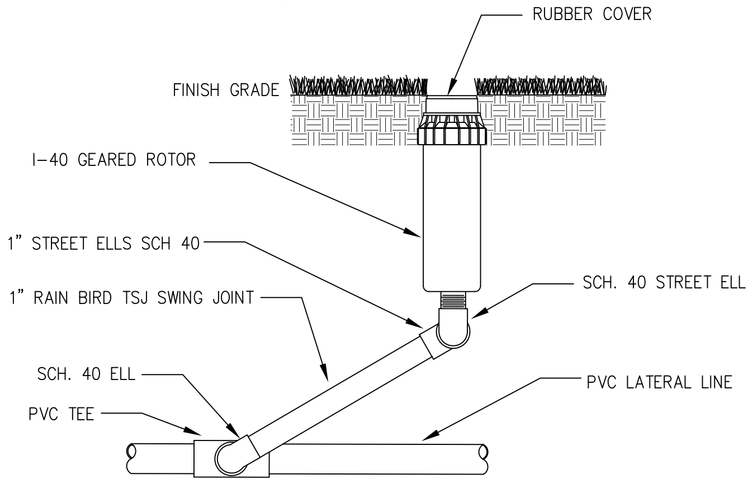
HUNTER I-20 GEAR ROTOR

NTS



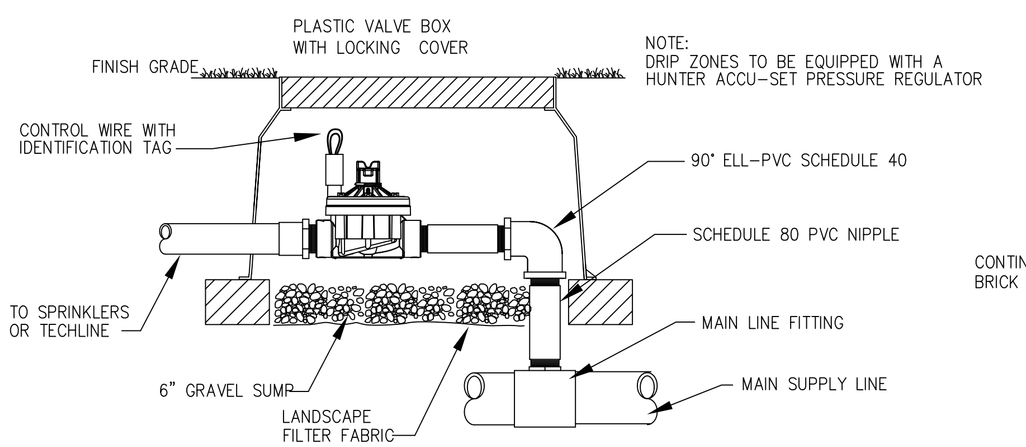
RAIN BIRD 1400 SERIES BUBBLER

NTS



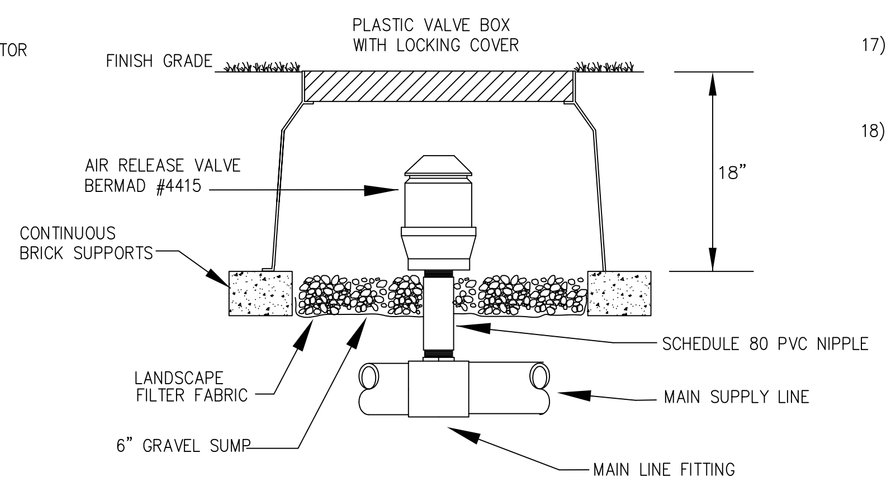
HUNTER I-40 GEAR ROTOR

NTS



HUNTER ICV SERIES CONTROL VALVE

NTS



AIR RELEASE VALVE

NTS

IRRIGATION NOTES

1) THE HEAD LAYOUT HAS BEEN DESIGNED TO PROVIDE 100% COVERAGE. ANY CHANGES MADE IN THE HEAD LAYOUT DUE TO FIELD CONDITIONS SHALL BE IN ACCORDANCE WITH THESE STANDARDS.

2) SET SPRAY HEADS 3" AND ROTORS 12" IN FROM BACK OF CURB OR 24" IF PAVEMENT HAS NO CURB.

3) VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF IRRIGATION SYSTEM. MAINLINE SHALL NOT BE LOCATED WITHOUT PRIOR APPROVAL OF THE PROJECT MANAGER AND THE LANDSCAPE ARCHITECT. ALL UTILITIES AND STRUCTURES MAY NOT BE SHOWN ON THESE PLANS–CONTRACTOR SHALL VERIFY.

4) ALL PRESSURE MAINLINES UNDER ASPHALT PAVEMENT SHALL BE WITHIN SLEEVES AS NOTED. IRRIGATION COMMUNICATION CABLE SHALL HAVE ITS OWN SEPARATE SLEEVE. LATERAL LINES THEY SHALL BE CONTAINED WITHIN THEIR OWN SLEEVE WHERE SHOWN ON THE PLAN.

5) ALL SLEEVES UTILIZED BY THE IRRIGATION CONTRACTOR, WHETHER INSTALLED BY HIM OR NOT, SHALL BE LOCATED ON THE "AS-BUILT" DRAWINGS. THE DEPTH BELOW FINISH GRADE, TO THE NEAREST FOOT OF EACH END OF EACH SLEEVE SHALL BE NOTED AT EACH SLEEVE LOCATION ON THE "AS-BUILT" DRAWINGS.

6) MAINLINE AND VALVES ARE SHOWN IN SCHEMATIC FORM. LOCATE AS NOTED ON PLANS.

7) LOCATE ALL VALVES A MINIMUM OF 24" FROM BACK OF CURB OR EDGE OF PAVEMENT, UNLESS NOTED OTHERWISE.

8) ALL UNSIZED PIPE SHALL BE 3/4" UNLESS OTHERWISE NOTED.

9) ALL VALVES SHALL BE INSTALLED IN AN AMETEK PLASTIC VALVE BOX WITH LOCKING LID.

10) IRRIGATION CONTRACTOR SHALL SECURE ANY AND ALL NECESSARY PERMITS FOR THE WORK PRIOR TO COMMENCEMENT OF HIS OPERATIONS ON-SITE. COPIES OF THE PERMITS SHALL BE SENT TO THE OWNER/GENERAL CONTRACTOR. WORK IN THE R.O.W. SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF LOCAL AND/OR STATE HIGHWAY JURISDICTION.

11) VERIFY MAINLINE POINT OF CONNECTION, PUMP STATION AND ELECTRICAL POWER LOCATIONS AT PROJECT SITE WITH OWNER.

12) ELECTRIC SERVICE TO THE PUMP STATION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. ALL WORK SHALL BE PERFORMED BY A LICENSEN ELECTRICAL CONTRACTOR.

13) IRRIGATION CONTRACTOR SHALL SECURE ANY AND ALL NECESSARY PERMITS FOR THE WORK PRIOR TO COMMENCEMENT OF HIS OPERATIONS ON-SITE. COPIES OF THE PERMITS SHALL BE SENT TO THE OWNER/GENERAL CONTRACTOR. WORK IN THE R.O.W. SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF LOCAL AND/OR STATE HIGHWAY JURISDICTION.

14) HUNTER ID1BLU 14 AWG COMMUNICATION CABLE TO BE LAID ALONG SIDE OF IRRIGATION MAINLINE WHERE APPLICABLE.

15) ALL 24 VAC WIRING FROM DECODER TO CONTROL VALVE SHALL BE DIRECT BURIAL COPPER AS FOLLOWS:
PULSE WIRES– 14 GAUGE RED COLOR
COMMON WIRES– 14 GAUGE WHITE COLOR

16) DURING INSTALLATION AND UPON COMPLETION OF THE IRRIGATION SYSTEM, VALVES SHALL BE WIRED TO THE CONTROLLER STATION AS PER THE IRRIGATION ZONE NUMBERS.

17) INSTALLATION OF WORK SHALL BE COORDINATED WITH OTHER CONTRACTORS IN SUCH A MANNER AS TO ALLOW FOR A SPEEDY AND ORDERLY COMPLETION OF ALL WORK ON THE SITE.

18) PRODUCTS SHALL BE AS SPECIFIED.

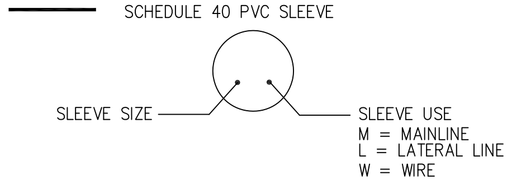
CONTROLLER SCHEDULE

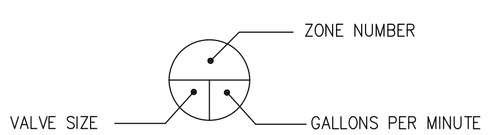
ZONE		GPM	VALVE SIZE	TYPE
1		32.6	1 1/2"	DRIP
2		44.4	1 1/2"	DRIP
3		44.4	1 1/2"	DRIP
4		38.2	1 1/2"	DRIP
5	PH 1	44.3	1 1/2"	SPRAY
	PH 2	44.0		
6		113.0	2"	SPORT ROTOR
7	PH 1	71.0	2"	ROTOR
	PH 2	95.4		
8		104.5	2"	SPORT ROTOR
9		104.5	2"	SPORT ROTOR
10		113.0	2"	SPORT ROTOR
11	PH 1	71.1	2"	ROTOR
	PH 2	97.5		
12	PH 1	50.7	2"	SPRAY
	PH 2	89.1		
13		18.0	1"	DRIP
14		57.2	2"	DRIP
15		109.1	2"	SPRAY

IRRIGATION LEGEND

RAIN BIRD 1806 SERIES SPRINKLERS WITH RAIN BIRD MPR SPRAY NOZZLES UNLESS NOTED OTHERWISE.

	15–Q 30° TRAJECTORY
	15–T 30° TRAJECTORY
	15–H 30° TRAJECTORY
	15–TQ 30° TRAJECTORY
	15–F 30° TRAJECTORY
	12–Q 30° TRAJECTORY
	12–T 30° TRAJECTORY
	12–H 30° TRAJECTORY
	12–TQ 30° TRAJECTORY
	12–F 30° TRAJECTORY
	10–Q 15° TRAJECTORY
	10–T 15° TRAJECTORY
	10–H 15° TRAJECTORY
	10–TQ 15° TRAJECTORY
	10–F 15° TRAJECTORY
	8–Q 10° TRAJECTORY
	8–H 10° TRAJECTORY
	15EST
	15SST
	15CST
	RAIN BIRD 1401 PC BUBBLER
	RAIN BIRD 1402 PC BUBBLER
	RAIN BIRD PC–12 (12 GPH) PRESSURE COMPENSATING MODULE WITH PC DIFFUSER CAP.
	HUNTER I–20–ADS–2.0, 90° ADJUSTABLE, 30' RADIUS
	HUNTER I–20–ADS–3.5, 180° ADJUSTABLE, 30' RADIUS
	HUNTER I–20–ADS–4.5, 270° ADJUSTABLE, 30' RADIUS
	HUNTER I–20–36V–6.0, 360° FULL CIRCLE, 30' RADIUS
	HUNTER I–20–ADS–2.0, 90° ADJUSTABLE
	HUNTER I–20–ADS–3.5, 180° ADJUSTABLE
	HUNTER I–20–ADS–6.0, 270° ADJUSTABLE
	HUNTER I–20–36V–8.0, 360° FULL CIRCLE
	HUNTER I–40–ADS–40, 90° ADJUSTABLE
	HUNTER I–40–ADS–42, 180° ADJUSTABLE
	HUNTER I–20–36S–44, 360° FULL CIRCLE
Ⓐ	NETAFIM TECHLINE CV SUPPLY POINT OF CONNECTION "A"
Ⓑ	NETAFIM TECHLINE CV SUPPLY POINT OF CONNECTION "B"
Ⓒ	NETAFIM TECHLINE CV SUPPLY POINT OF CONNECTION "C"
	HUNTER ICV SERIES ELECTRIC CONTROL VALVE
	CAST IRON GATE VALVE PER LINE SIZE, INSTALLED IN 12" VALVE BOX
C	HUNTER ACC–99D DECODER CONTROLLER, SUPPLIED WITH PUMP STATION. PROVIDE CONNECTION & MATERIALS NECESSARY FOR CONTROLLER INSTALLATION AND OPERATION. GENERAL CONTRACTOR TO PROVIDE 120V POWER TO CONTROLLERS.
R	HUNTER MINI–CLIK RAIN SENSOR
1D	SINGLE STATION DECODER MODEL ICD–100
2D	TWO STATION DECODER MODEL ICD–200
4D	FOUR STATION DECODER MODEL ICD–400
G	GROUND ROD AT DECODER
AR	BERMAD MODEL 4415 AIR RELEASE VALVE
M	2" POTABLE WATER IRRIGATION METER PER CODE IRRIGATION DESIGN BASE: 120 GPM AT 50 PSI
	CLASS 200 PVC GASKETTED MAINLINE WITH DUCTILE IRON FITTINGS
	CL 200 PVC LATERAL LINE, SOLVENT WELD
	NETAFIM TECHLINE CV, TLCV9–1210
	SCHEDULE 40 PVC SLEEVE





COLBORN DESIGN GROUP, INC.
IRRIGATION DESIGN / WATER MANAGEMENT
803 87th Street Court NW - Bradenton, FL 34209 - (941) 795-7458 - email: design@colborndg.com

BY	DESCRIPTION	DATE	REV.

IBI GROUP, INC.
HTTP://WWW.IBIGROUP.COM
ENGINEERS CERT OF AUTH #2366 SURVEYORS AC#LB5610
PLANNERS LANDSCAPE ARCHITECTS ENVIRONMENTAL CONSULTANTS
1519 MAIN STREET
SARASOTA, FL 34236
PHONE: (941) 954-1718
FAX: (941) 954-0231

IBI GROUP

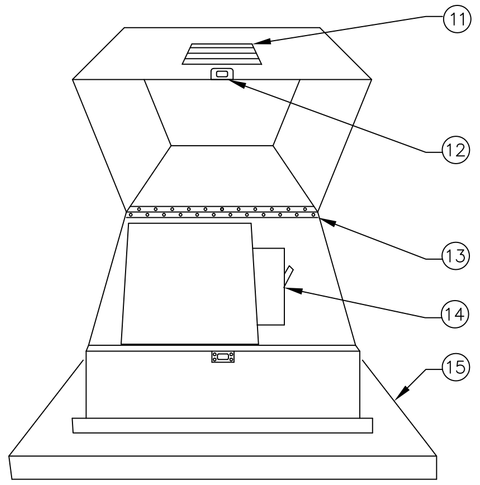
DRAWN: SC
DESIGNED: SC
CHECKED: SC
DATE: 09/02/08

NORMA LLOYD PARK
BRADENTON, FLORIDA

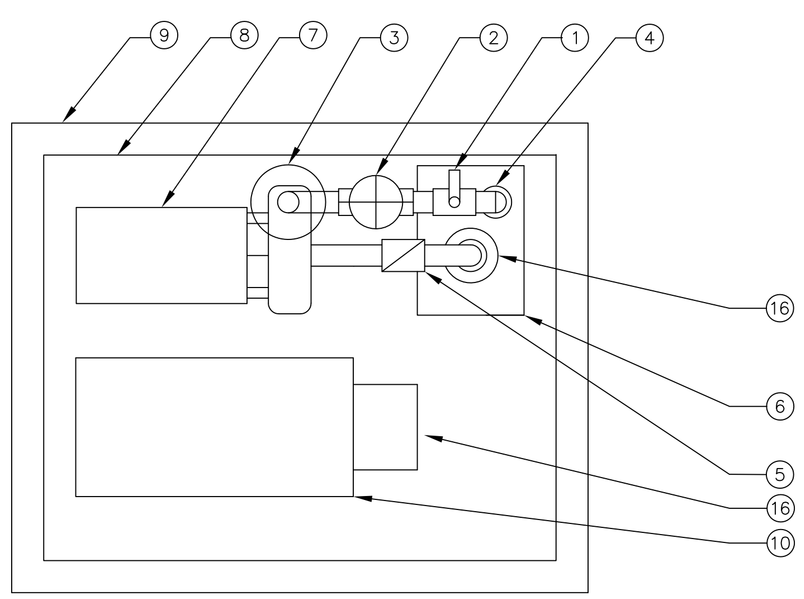
IRRIGATION
DETAILS & NOTES

20245

SHEET
IR–4



1) DISCHARGE ISOLATION VALVE
2) FLOW METER W/ PULSE OUTPUT
3) 2 GALLON PRESSURE TANK
4) ROLL GROOVE MANIFOLD
5) CHECK VALVE
6) OPENING FOR PIPING IN & OUT
7) 10 HP CENTRIFUGAL PUMP WITH OVERHEAT PROTECTION
8) 50"W X 58"L X 48"H FOREST GREEN FIBERGLASS FLIP TOP COVER
9) 53"W X 62"L WELDED ALUMINUM FRAME
10) UL LISITED CONTROL PANEL W/ VFD CONTROLS IN A 3R FIBERGLASS ENCLOSURE, LOSS OF PRIME, LOW & HIGH PRESSURE AND TRANSIENT SURGE PROTECTION
11) 8" X 16" VENT (FRONT AND REAR)
12) STAINLESS STEEL LOCKABLE HASP
13) STAINLESS STEEL HINGE AND HARDWARE
14) 3R DISCONNECT SWITCH
15) 5'5"W X 6'2"L X 4"T CONCRETE SLAB
16) HUNTER ACC-99D DECODER CONTROLLER

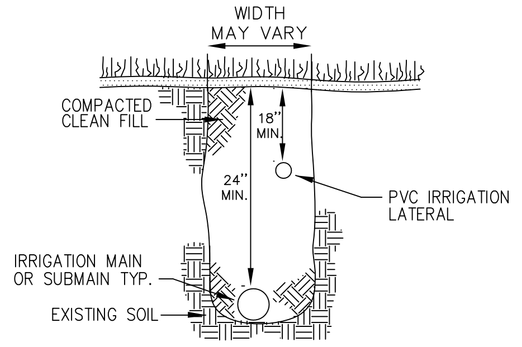


MODEL: VFD-LP-CENT-10-230-3

PUMP PERFORMANCE
120 GPM @ 90 PSI

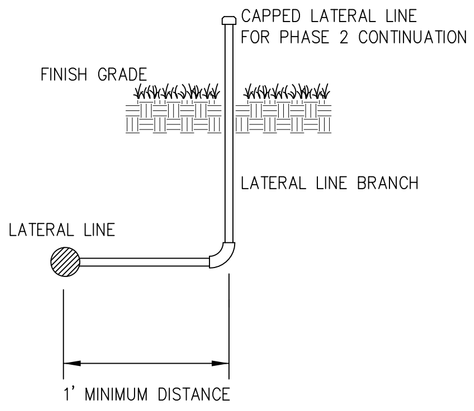
PUMP PERFORMANCE IS BASED ON 50 PSI STATIC PRESSURE AT THE POTABLE WATER SERVICE CONNECTION.

NAPLES ELECTRIC MOTOR WORKS, INC.
2088 J&C BLVD.
NAPLES, FL 34109



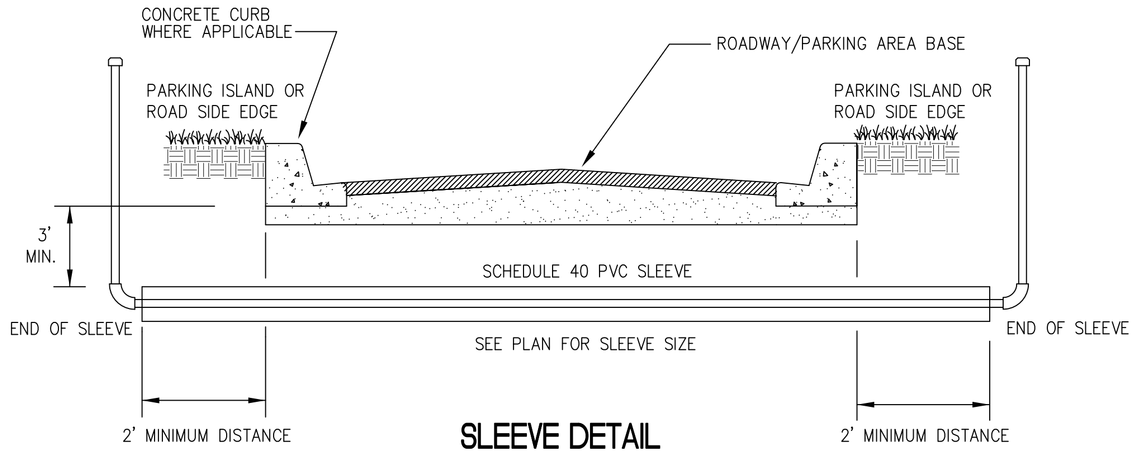
TRENCHING DETAIL

NTS



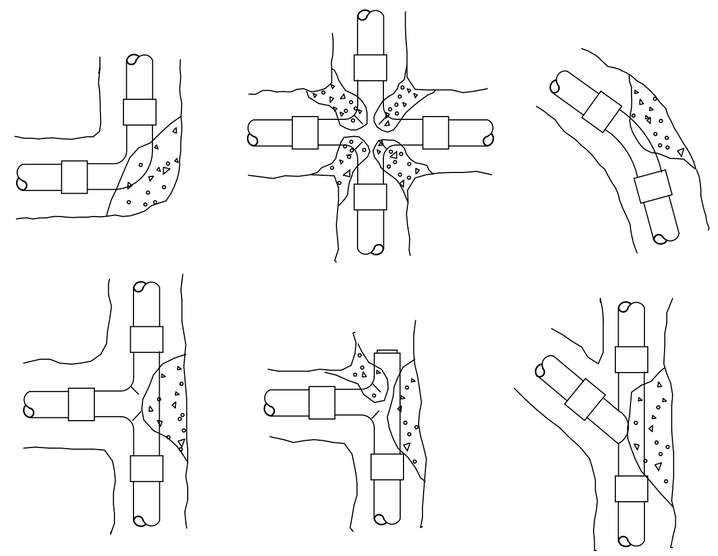
LATERAL LINE INSTALLATION FOR FUTURE PHASE 2 CONNECTION

NTS



SLEEVE DETAIL

NTS



INSTALLATION NOTES

1. 3000 PSI CONCRETE OR BETTER IS TO BE USED FOR THRUST BLOCKS.
2. FOR 45°/90° FITTINGS, MINIMUM OF 2 CUBIC FEET OF CONCRETE TO BE USED.
3. FOR 22-1/2° FITTINGS, MINIMUM OF 0.5 CUBIC FEET OF CONCRETE TO BE USED.
4. FOR TEES, MINIMUM OF 2 CUBIC FEET OF CONCRETE TO BE USED.

THRUST BLOCKS REQUIRED FOR IRRIGATION MAINLINE 2 1/2" AND LARGER.

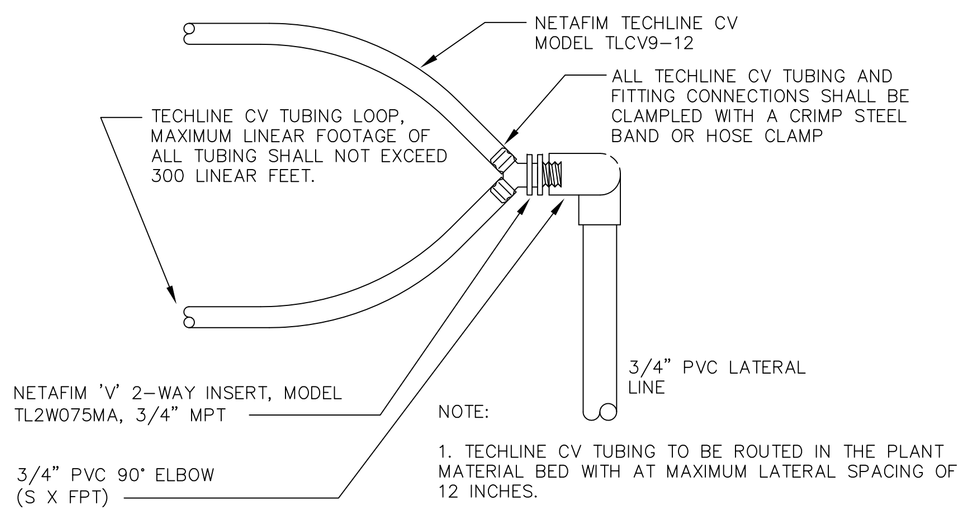
THRUST BLOCK REINFORCEMENT

NTS

NOTE:

1. TECHLINE CV TUBING TO BE ROUTED IN THE PLANT MATERIAL BED WITH AT MAXIMUM LATERAL SPACING OF 12 INCHES.

2. TECHLINE CV TUBING TO BE INSTALLED IN A GRID PATTERN. TECHLINE CV TUBING SHALL NOT BE INSTALLED IN A LONG CONTINUOUS RUN.



* NOT TO EXCEED 5 GPM OR (300 LF DRIPLINE) FOR EACH SUPPLY POINT

NOTE:

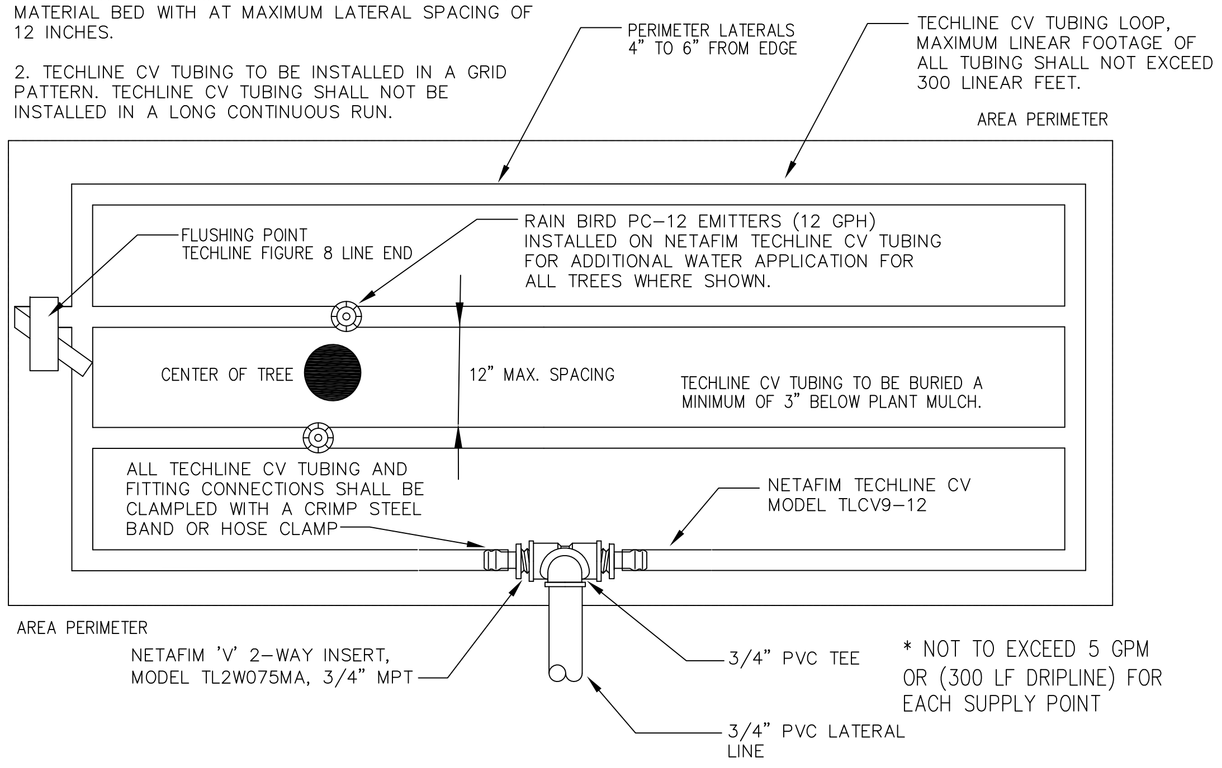
1. TECHLINE CV TUBING TO BE ROUTED IN THE PLANT MATERIAL BED WITH AT MAXIMUM LATERAL SPACING OF 12 INCHES.

2. TECHLINE CV TUBING TO BE ROUTED ALONG EACH SIDE OF PLANT MATERIAL WHERE APPLICABLE FOR HEDGE ROW PLANTING.

3. TECHLINE CV TUBING TO BE INSTALLED IN A GRID PATTERN. DRIPLINE TUBING SHALL NOT BE INSTALLED IN A LONG CONTINUOUS RUN.

NETAFIM TECHLINE CV CONNECTION POINT "A" END FEED

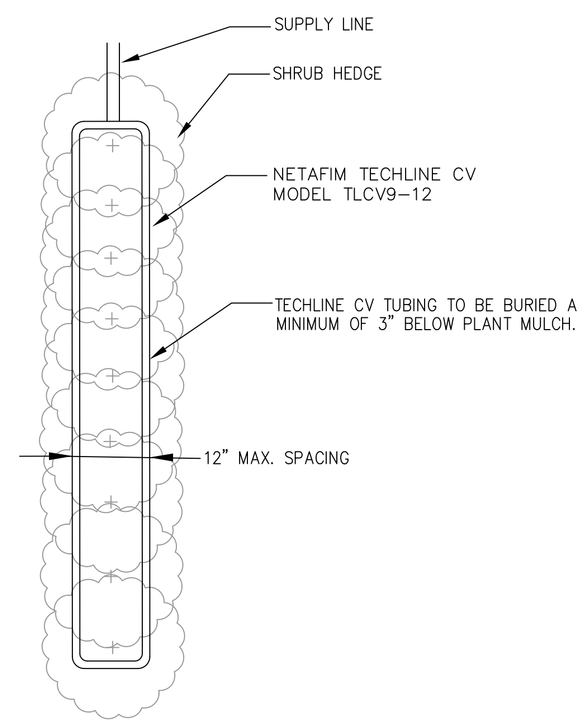
NTS



* NOT TO EXCEED 5 GPM OR (300 LF DRIPLINE) FOR EACH SUPPLY POINT

NETAFIM TECHLINE CV CONNECTION POINT "A"

NTS



SHRUB HEDGE LAYOUT

NTS

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SARASOTA, FL 34236
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FAX: (941) 954-4033

IBI GROUP

REV.	DATE	DESCRIPTION	BY

DRAWN: SC
DESIGNED: SC
CHECKED: SC
DATE: 09/02/08

NORMA LLOYD PARK
BRADENTON, FLORIDA

IRRIGATION
DETAILS & NOTES

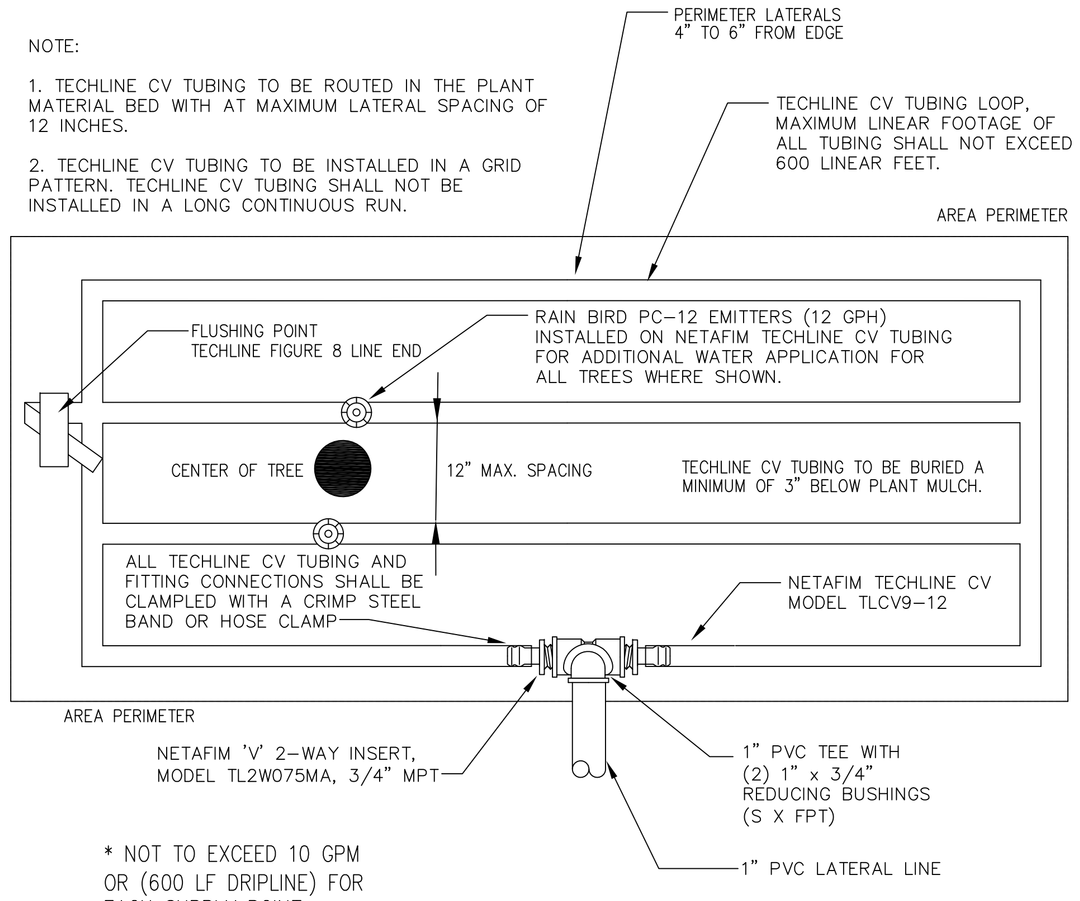
20245

SHEET
IR-5

NOTE:

1. TECHLINE CV TUBING TO BE ROUTED IN THE PLANT MATERIAL BED WITH AT MAXIMUM LATERAL SPACING OF 12 INCHES.

2. TECHLINE CV TUBING TO BE INSTALLED IN A GRID PATTERN. TECHLINE CV TUBING SHALL NOT BE INSTALLED IN A LONG CONTINUOUS RUN.



* NOT TO EXCEED 10 GPM OR (600 LF DRIPLINE) FOR EACH SUPPLY POINT

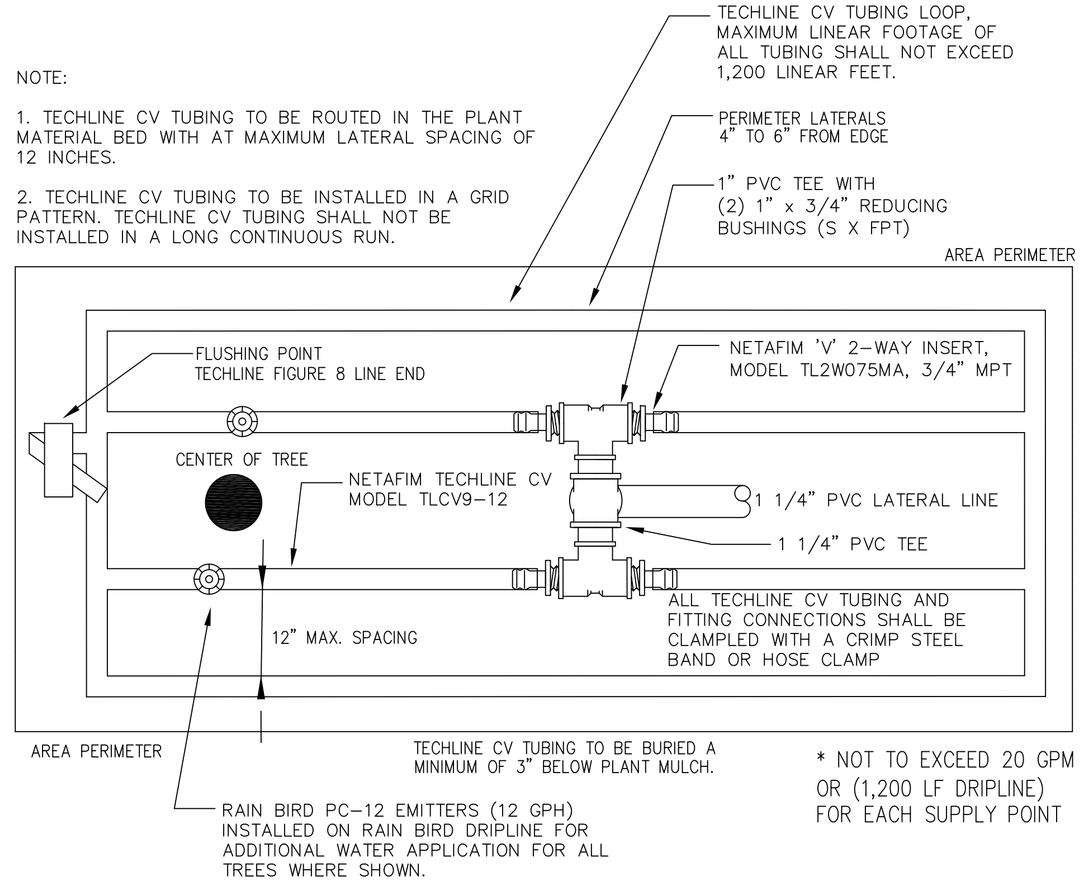
NETAFIM TECHLINE CV CONNECTION POINT "B"

NTS

NOTE:

1. TECHLINE CV TUBING TO BE ROUTED IN THE PLANT MATERIAL BED WITH AT MAXIMUM LATERAL SPACING OF 12 INCHES.

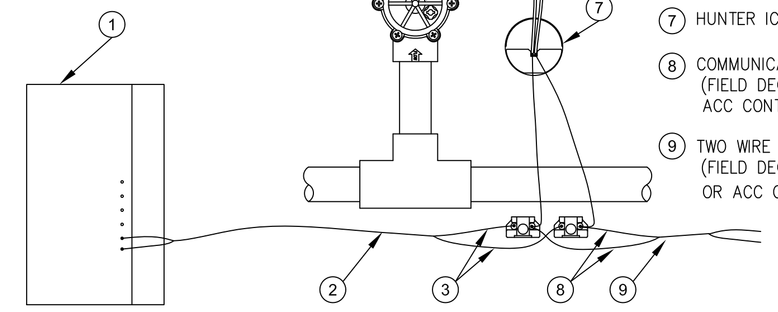
2. TECHLINE CV TUBING TO BE INSTALLED IN A GRID PATTERN. TECHLINE CV TUBING SHALL NOT BE INSTALLED IN A LONG CONTINUOUS RUN.



* NOT TO EXCEED 20 GPM OR (1,200 LF DRIPLINE) FOR EACH SUPPLY POINT

NETAFIM TECHLINE CV CONNECTION POINT "C"

NTS

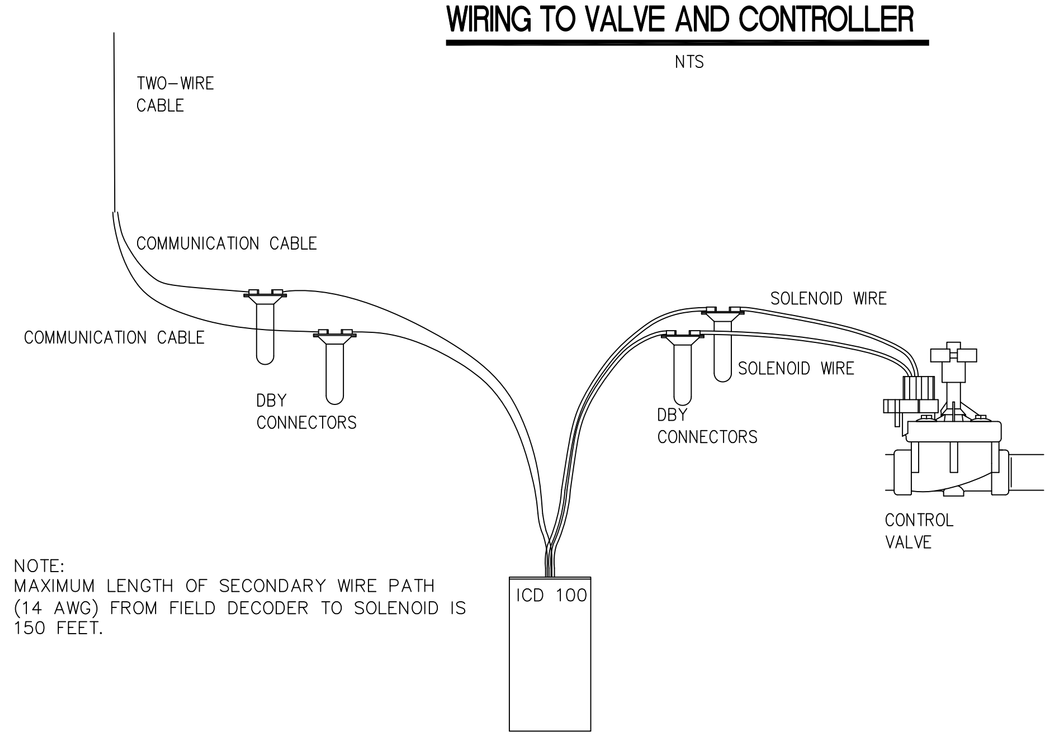


1. HUNTER ACC CONTROLLER
2. TWO-WIRE TO ACC CONTROLLER
3. COMMUNICATION WIRE TO ACC CONTROLLER
4. REMOTE CONTROL VALVE
5. SOLENOID WIRE
6. DBY CONNECTORS
7. HUNTER ICD 100 SINGLE DECODER
8. COMMUNICATION WIRE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, ACC CONTROLLER)
9. TWO WIRE CABLE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, OR ACC CONTROLLER)

NOTE:
MAXIMUM LENGTH OF SECONDARY WIRE PATH (14 AWG) FROM FIELD DECODER TO SOLENOID IS 150 FEET.

ICD 100 DECODER WIRING TO VALVE AND CONTROLLER

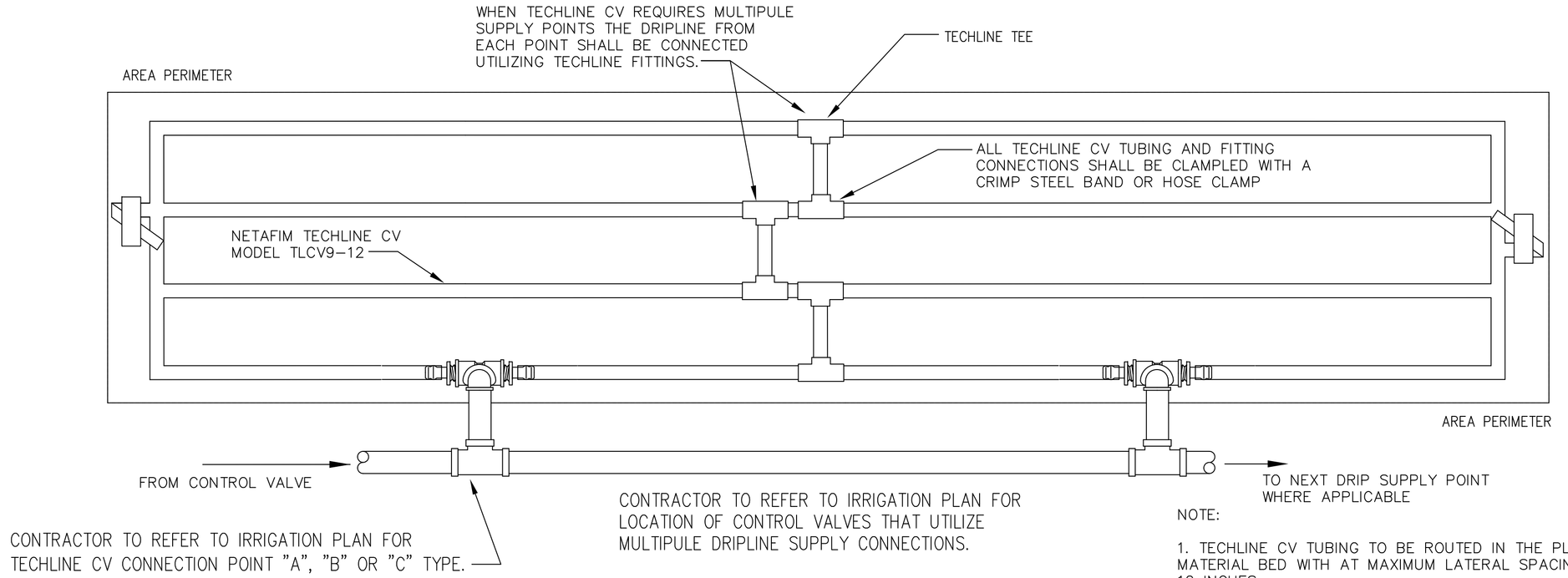
NTS



NOTE:
MAXIMUM LENGTH OF SECONDARY WIRE PATH (14 AWG) FROM FIELD DECODER TO SOLENOID IS 150 FEET.

ICD 100 DECODER WIRING DIAGRAM

NTS



MULTIPULE TECHLINE CV CONNECTION SUPPLIES FROM SINGLE CONTROL VALVE

NTS

NOTE:

1. TECHLINE CV TUBING TO BE ROUTED IN THE PLANT MATERIAL BED WITH AT MAXIMUM LATERAL SPACING OF 12 INCHES.

2. TECHLINE CV TUBING TO BE INSTALLED IN A GRID PATTERN. TECHLINE CV TUBING SHALL NOT BE INSTALLED IN A LONG CONTINUOUS RUN.

COLBORN DESIGN GROUP, INC.
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PLANNERS LANDSCAPE ARCHITECTS ENVIRONMENTAL CONSULTANTS
1519 MAIN STREET
SARASOTA, FL 34236
PHONE: (941) 954-1718
FAX: (941) 954-0203

IBI GROUP

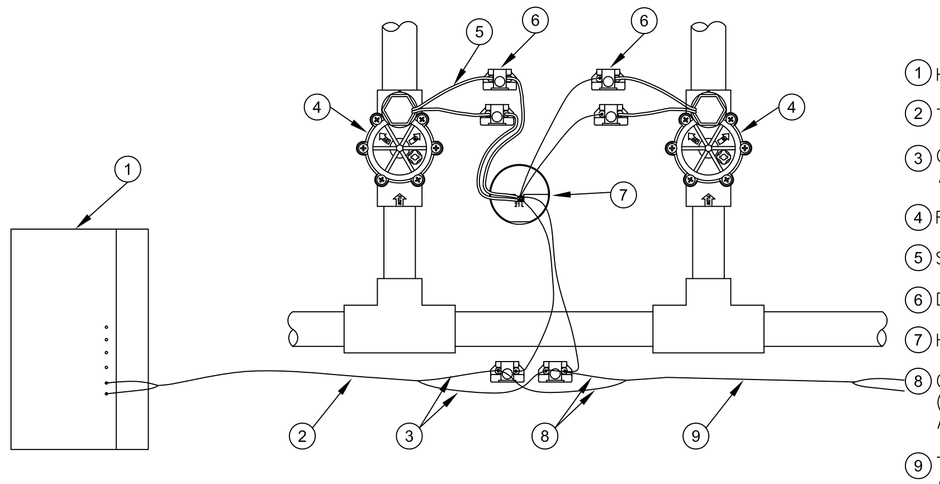
DRAWN: SC
DESIGNED: SC
CHECKED: SC
DATE: 09/02/08

NORMA LLOYD PARK
BRADENTON, FLORIDA

IRRIGATION
DETAILS & NOTES

20245

SHEET
IR-6

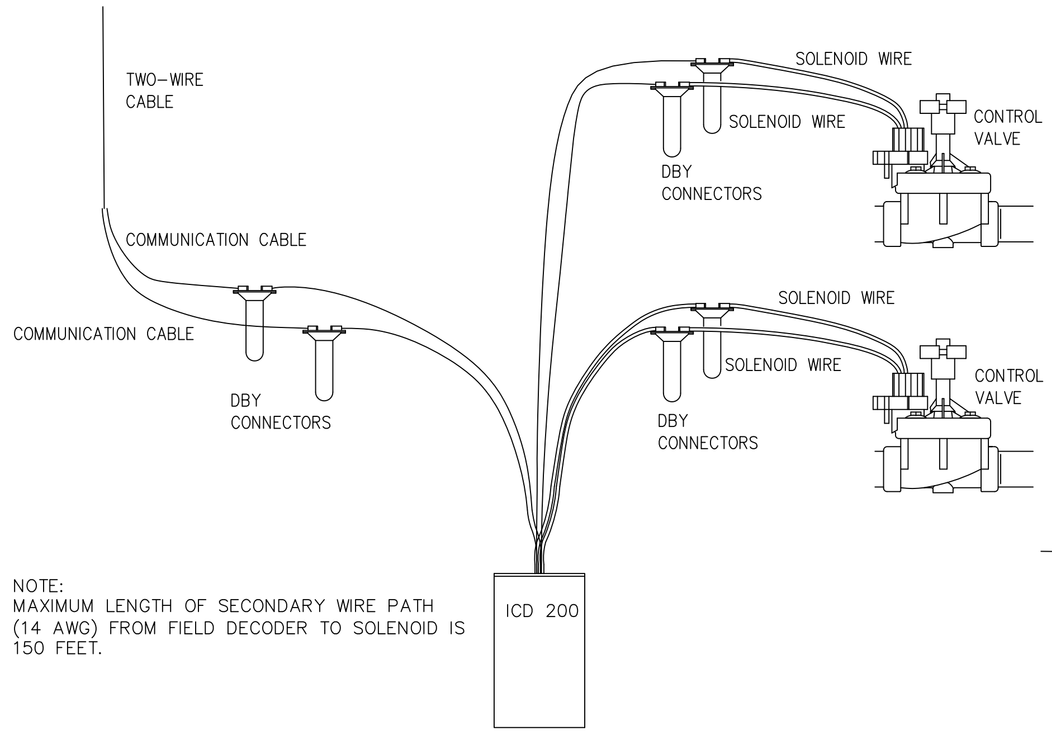


1. HUNTER ACC CONTROLLER
2. TWO–WIRE CABLE TO MDC CONTROLLER
3. COMMUNICATION WIRE TO ACC CONTROLLER
4. REMOTE CONTROL VALVE
5. SOLENOID WIRE
6. DBY CONNECTORS (1 OF 6)
7. HUNTER ICD 200 DECODER
8. COMMUNICATION WIRE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, ACC CONTROLLER)
9. TWO WIRE CABLE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, OR ACC CONTROLLER)

NOTE:
MAXIMUM LENGTH OF SECONDARY WIRE PATH
(14 AWG) FROM DECODER TO SOLENOID IS 150 FEET.

ICD 200 DECODER
WIRING TO VALVES AND CONTROLLER

NTS



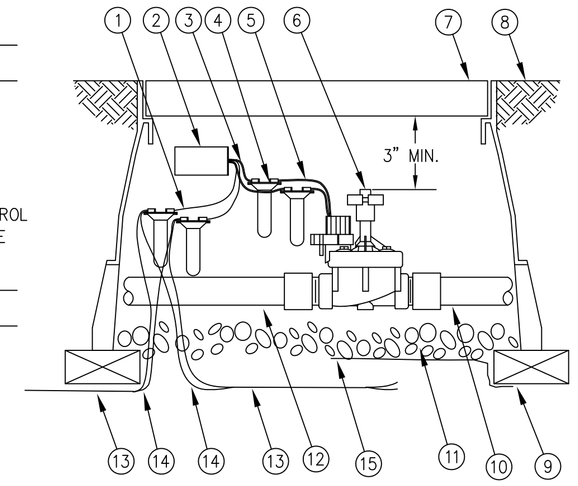
NOTE:
MAXIMUM LENGTH OF SECONDARY WIRE PATH
(14 AWG) FROM FIELD DECODER TO SOLENOID IS
150 FEET.

ICD 200 DECODER
WIRING DIAGRAM

NTS

NOTES:

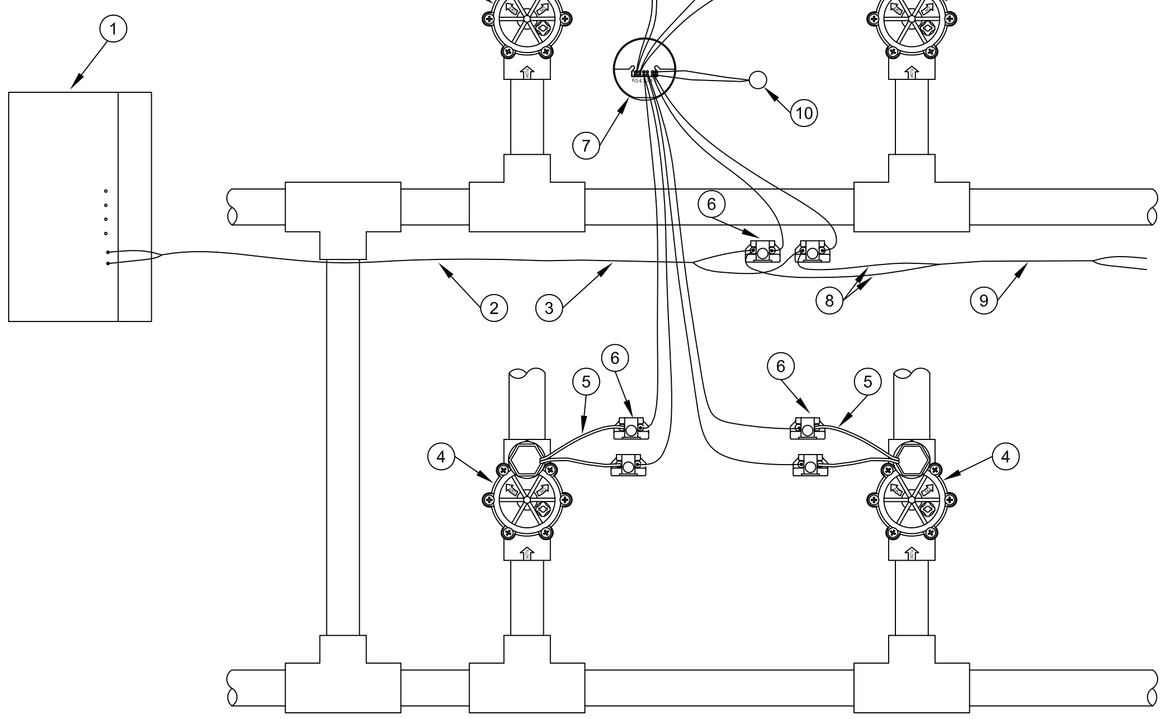
1. SECONDARY WIRE RUN – DISTANCE BETWEEN SOLENOID AND FIELD DECODER – NOT TO EXCEED 150 FEET WITH 14 GAUGE WIRE.
2. PLACE 3 FEET OF EXTRA WIRE IN EVERY VALVE BOX FOR EASIER SERVICING.



1. WIRE FROM ICD 100/200/400 DECODER (1 OF 2)
2. ICD 100 DECODER
   ICD 200 DECODER
   ICD 400 DECODER
3. WIRE FROM ICD 100 DECODER (1 OF 2)
   WIRE FROM ICD 200 DECODER (1 OF 4)
   WIRE FROM ICD 400 DECODER (1 OF 8)
4. DBY WATER PROOF CONNECTION
5. SOLENOID WIRE
6. REMOTE CONTROL VALVE
7. VALVE BOX WITH COVER: 10–INCH SIZE
8. FINISH GRADE / TOP OF MULCH
9. BRICK (1 OF 4)
10. PVC MAINLINE PIPE
11. 6" GRAVEL SUMP
12. PVC LATERAL PIPE
13. TWO–WIRE CABLE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, ACC CONTROLLER)
14. COMMUNICATION WIRE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, OR ACC CONTROLLER)
15. LANDSCAPE FABIC LINING BOTTOM OF VALVE BOX

ICD 100/200/400 DECODER
CONNECTION TO VALVE

NTS

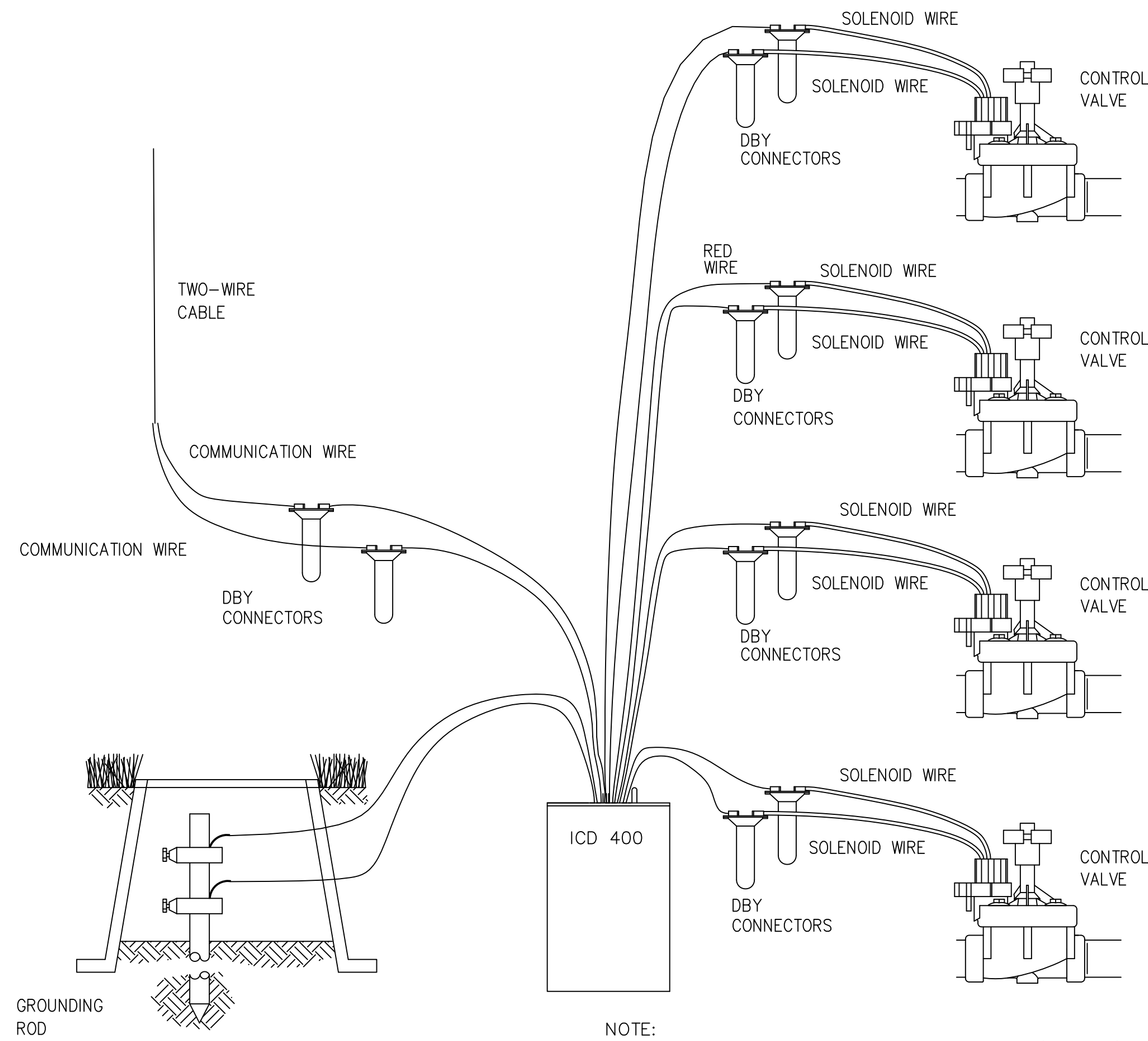


1. HUNTER ACC CONTROLLER
2. TWO–WIRE CABLE TO MDC CONTROLLER
3. COMMUNICATION WIRE TO ACC CONTROLLER
4. REMOTE CONTROL VALVE
5. SOLENOID WIRE
6. DBY CONNECTORS (1 OF 10)
7. HUNTER ICD 400 DECODER
8. COMMUNICATION WIRE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, ACC CONTROLLER)
9. TWO WIRE CABLE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, OR ACC CONTROLLER)
10. GROUNDING ROD WHERE NOTED ON PLAN

NOTE:
MAXIMUM LENGTH OF SECONDARY WIRE PATH (14 AWG)
FROM FIELD DECODER TO SOLENOID IS 150 FEET.

ICD 400 DECODER
WIRING TO VALVES AND CONTROLLER

NTS



NOTE:
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FROM FIELD DECODER TO SOLENOID IS 150 FEET.

ICD 400 DECODER
WIRING DIAGRAM

NTS

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REV.	DATE	DESCRIPTION	BY

IBI GROUP

DRAWN: SC
DESIGNED: SC
CHECKED: SC
DATE: 09/02/08

NORMA LLOYD PARK
BRADENTON, FLORIDA

IRRIGATION
DETAILS & NOTES

20245

SHEET
IR–7

NORMA LLOYD PARK IMPROVEMENTS

PREPARED FOR THE:

CITY OF BRADENTON, FLORIDA

SITE IMPROVEMENT PERMIT DOCUMENTS
AUGUST 22, 2008

SUBMITTED TO:
CITY OF BRADENTON
DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT
101 OLD MAIN STREET
BRADENTON, FLORIDA 34205
PHONE: (941) 932-9423 FAX: (941) 932-9534

INDEX OF SHEETS

LANDSCAPE ARCHITECT AND CIVIL ENGINEER

IBI GROUP

RUSSELL G. MOORE, RLA
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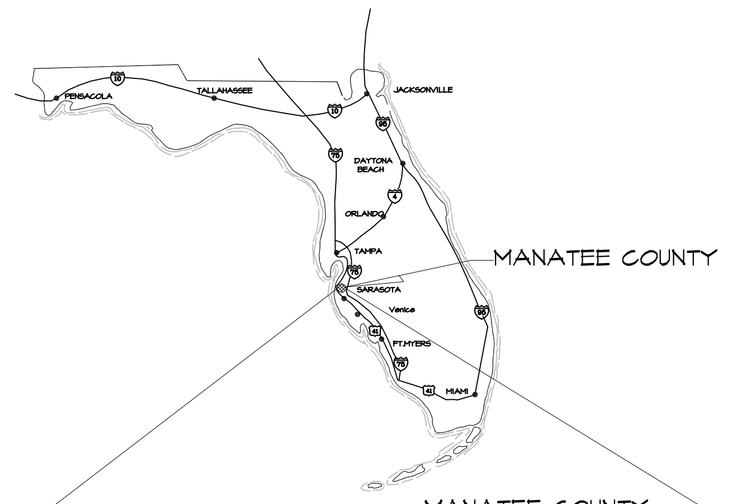
1519 MAIN STREET SARASOTA,
FLORIDA 34236
P 941.954.1718
F 941.954.0231

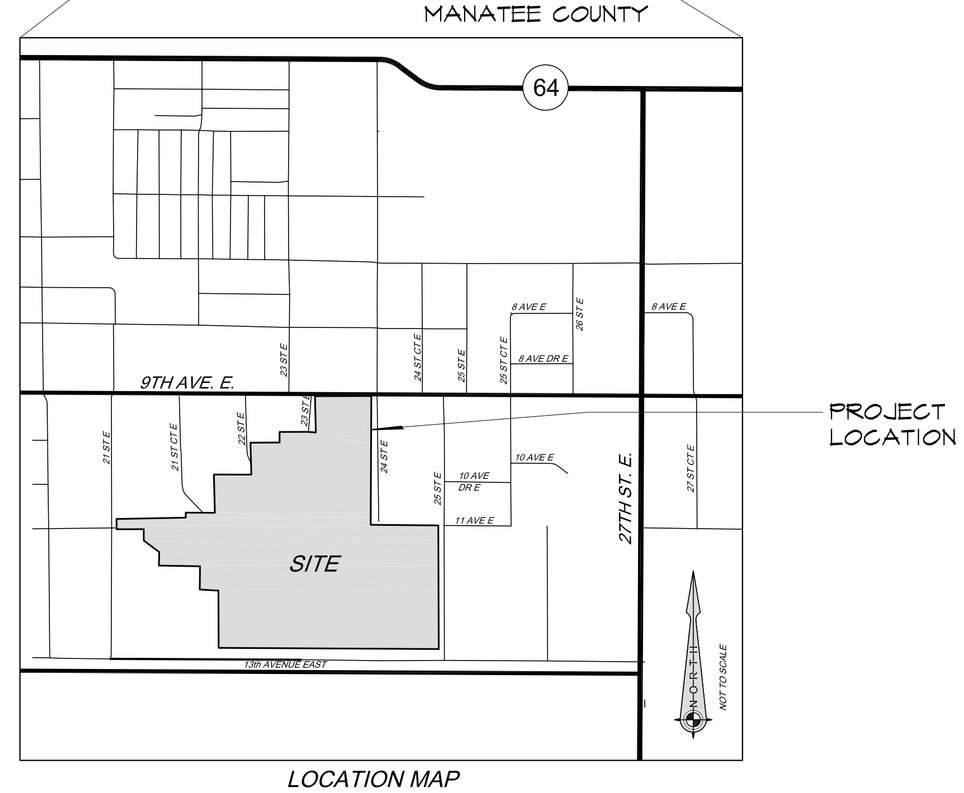
ANITA C. WANG P.E.
FLORIDA PE No.57628

GENERAL CONSTRUCTION NOTES:

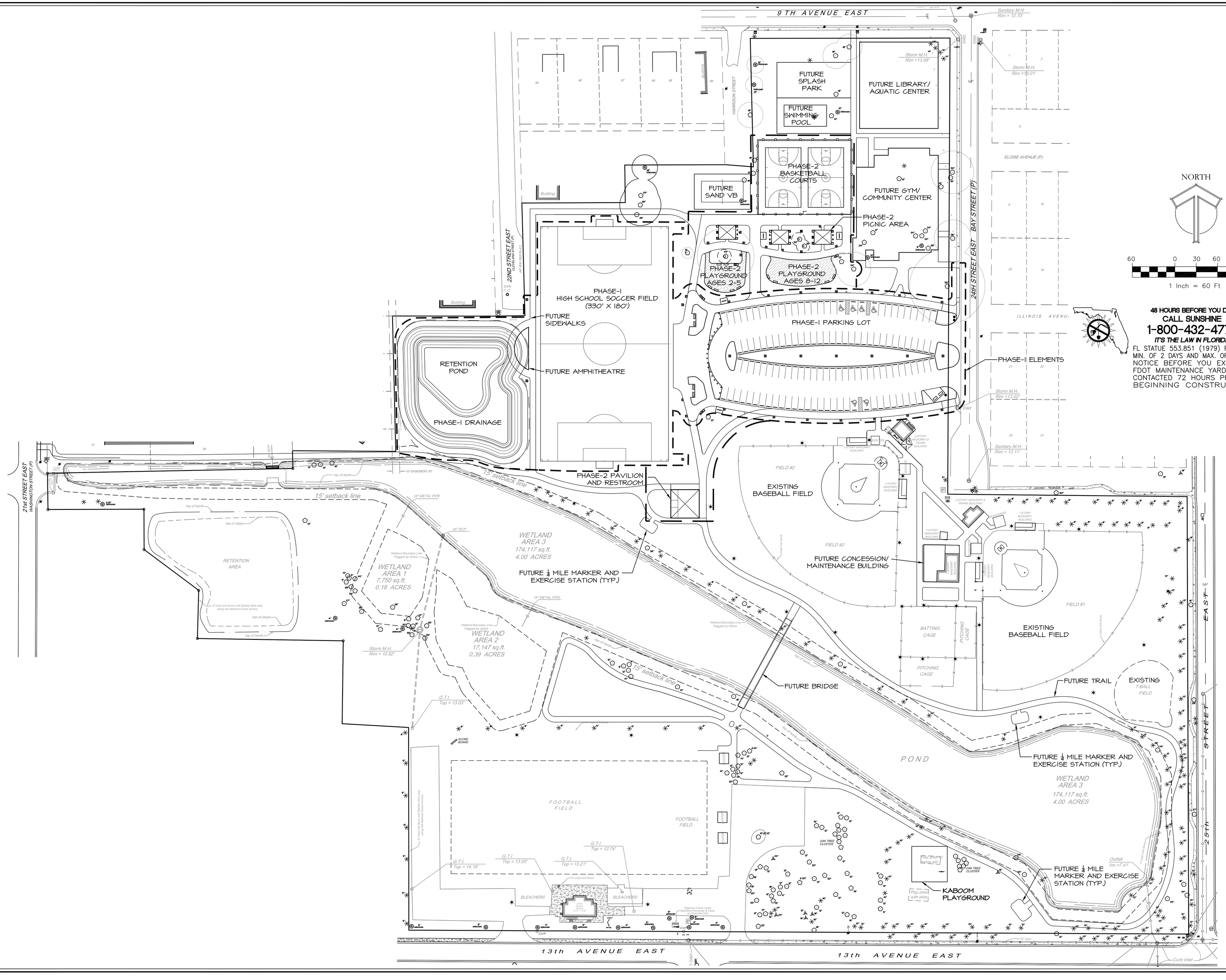
1. IT IS UNDERSTOOD THAT MANATEE COUNTY MAY BE ACTING AS THE GENERAL CONTRACTOR FOR THIS PROJECT AND WILL BE UTILIZING THESE SITE IMPROVEMENT DOCUMENTS TO CONSTRUCT PHASE-1 AND PHASE-2 OF THIS PROJECT. THE CLIENT AND HIS STAFF WILL BE UTILIZING A VARIETY OF SUBCONTRACTORS TO CONSTRUCT THE WORK CONTAINED IN PHASE-1 AND PHASE-2.
2. THESE PLANS REFLECT CONDITIONS KNOWN DURING DESIGN PHASE OF THIS PROJECT. ACTUAL PHYSICAL CONDITIONS MAY VARY.
3. ALL WORK PERFORMED THROUGHOUT THE PROJECT SHALL CONFORM TO EXISTING LINES AND GRADES UNLESS OTHERWISE NOTED.
4. THE CONTRACTOR SHALL PROTECT ALL EXISTING STRUCTURES, STORM DRAINS, UTILITIES, AND OTHER FACILITIES TO REMAIN.
5. THE CONTRACTOR SHALL CONSTRUCT SILT SCREENS, HAY BALES OR OTHER APPROVED DEVICES PRIOR TO CONSTRUCTION TO PREVENT ADVERSE OFF-SITE IMPACT OF STORMWATER QUALITY AND QUANTITY.
6. ALL EXISTING STORM DRAINAGE STRUCTURES SHALL REMAIN UNLESS OTHERWISE NOTED.
7. NOTIFY SUNSHINE STATE OR CALL (1-800-432-4770), AND ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND CONNECTION TO EXISTING UTILITIES. PROTECT EXISTING UTILITIES FROM DAMAGE.
8. LAY SOD AROUND ALL INLETS, MITERED ENDWALLS, HEADWALLS, SWALES LAKE SLOPES, AND 2' MIN. WIDE STRIP ADJACENT TO ALL CURBING. ALL PROPOSED GROUND ELEVATIONS ARE FINISHED SOD ELEVATIONS. FINISHED EARTHWORK GRADING WILL BE 0.2 FEET BELOW ELEVATIONS SHOWN TO ALLOW FOR SOD THICKNESS.

LOCATION MAP





LOCATION MAP



REV.	DATE	DESCRIPTION	BY
	08/22/08	REVISE PER CITY COMMENTS	FW

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IBI GROUP

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DATE: 06/27/08

NORMA LLOYD PARK
BRADENTON, FLORIDA
OVERALL SITE LAYOUT PLAN

20245

SHEET
L-1

PLAYGROUND SAFETY SURFACE
(BY OTHERS)

(7) AGES 8-12 3,300 SF

(8) AGES 2-5 2,200 SF

PHASE-2 SITE LAYOUT PLAN NOTES (AS DEPICTED ON PLAN):

(1) TWO BASKETBALL COURTS (BY CONVERSE).

(2) CHAINLINK FENCE (BY OTHERS).

(3) CONCRETE SIDEWALK (SEE ENGINEER'S DETAIL SHEET C-15 AND SHEET L-16).

(4) PLANTING AREA.

(5) PICNIC AREA.

(6) EXISTING OAK TREES TO REMAIN.

(7) PLAYGROUND EQUIPMENT FOR AGES 8-12 (BY OTHERS).

(8) PLAYGROUND EQUIPMENT FOR AGES 2-5 (BY OTHERS).

(9) PLAYGROUND SAFETY SURFACE (BY OTHERS).

(10) TRASH RECEPTACLE AND RECYCLE BIN (SEE DETAIL SHEET L-14) ON CONCRETE PAD. (SEE CONCRETE DETAIL SHEET L-15).

(11) BENCH (SEE DETAIL SHEET L-14).

(12) BIKE RACK (SEE DETAIL SHEET L-14) ON CONCRETE PAD (SEE CONCRETE DETAIL SHEET L-15).

(13) LIGHT POLE LOCATION. (SEE UTILITY PLAN SHEET C-6).

(14) CONCRETE CURB (SEE DETAIL SHEET L-15).

(15) PICNIC SHELTER (SEE DETAIL SHEET L-15), WITH 4 PICNIC TABLES AND 2 ADA TABLES PER SHELTER (SEE DETAIL SHEET L-14).

(16) DRINKING FOUNTAIN (SEE DETAIL SHEET L-14).

(17) FAMILY GRILL (SEE DETAIL SHEET L-14).

(18) GROUP GRILL (SEE DETAIL SHEET L-14).

(19) TRASH RECEPTACLE (SEE DETAIL SHEET L-14) ON CONCRETE PAD. (SEE CONCRETE DETAIL SHEET L-15).

(20) RECYCLE BIN (SEE DETAIL SHEET L-14) ON CONCRETE PAD. (SEE CONCRETE DETAIL SHEET L-15).

(21) 40' X 40' PAVILION AND RESTROOM (BY OTHERS).

(22) HOT COAL BIN (SEE DETAIL SHEET L-15).

SITE GENERAL NOTES:

A) CONTRACTOR TO COORDINATE WITH ADJACENT WORK BY OTHERS.

B) SEE PHASE-2 DEMOLITION PLAN FOR ALL REMOVALS AND PROTECTION OF EXISTING FEATURES.

C) CONTRACTOR SHALL VERIFY LOCATION, SIZE AND ELEVATION OF EXISTING UTILITIES, STRUCTURES, PIPES, PAVEMENTS, ETC. AS RELATED TO HIS WORK. NOTIFY LANDSCAPE ARCHITECT OR ENGINEER OF ANY CONFLICT AND/OR DISCREPANCIES IN THE CONSTRUCTION DOCUMENTS PRIOR TO THE START OF CONSTRUCTION.

D) IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACQUAINT HIMSELF/HERSELF WITH SUBSOIL CONDITIONS.

E) THE PLANS SHOW THE LOCATION OF SOME OF THE UTILITIES LOCATED WITHIN THE LIMITS OF THE CONTRACT ACCORDING TO INFORMATION PROVIDED BY THE SURVEY. NOTE THAT THE LANDSCAPE ARCHITECT SHALL NOT BE LIABLE FOR ITS RELIABILITY AND ACCURACY. THIS SURVEY INFORMATION IS NOT GUARANTEED.

F) ALL PAVEMENT PATCHING DUE TO UTILITIES INSTALLATION, CONSTRUCTION OF CURBS, ETC., OR DAMAGE TO EXISTING PAVEMENT TO REMAIN DURING CONSTRUCTION, SHALL BE PATCHED WITH A PAVEMENT SECTION WHICH MEETS OR EXCEEDS THE EXISTING SECTION BY THE CONTRACTOR PERFORMING THE WORK.

G) LANDSCAPE ARCHITECT TO PROVIDE CAD DRAWING FOR CONTRACTOR'S USE IN LAYING OUT THE PROJECT.

H) ALL RADII SHALL BE FORMED AS SMOOTH CIRCULAR ARCS WITH NO KINKS, FACETS OR TANGENTS.

I) SEE GRADING PLAN (SHEET C-4) FOR ALL GRADING INFORMATION.

J) SEE PHASE-1 ENGINEERING PLANS AND DETAILS FOR ALL DRAINAGE INFORMATION (SEE C SERIES DRAWINGS).

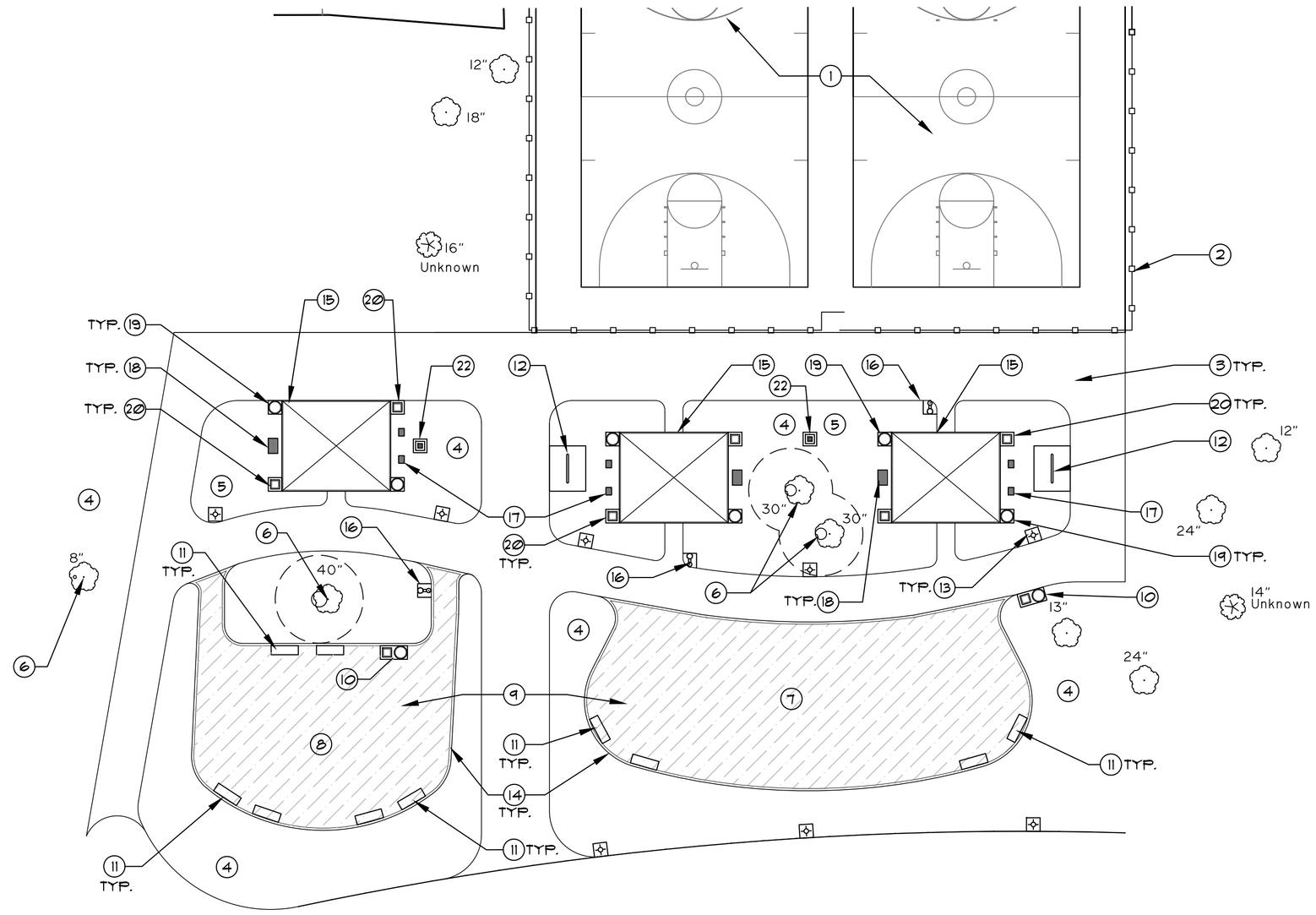
K) THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL TRAFFIC CONTROL DEVICES REQUIRED BY FEDERAL, STATE, CITY, OR LOCAL AGENCIES. THE AMOUNT, LOCATION AND SIZE SHALL BE PER THE DIRECTION OF THE GOVERNING AGENCY.

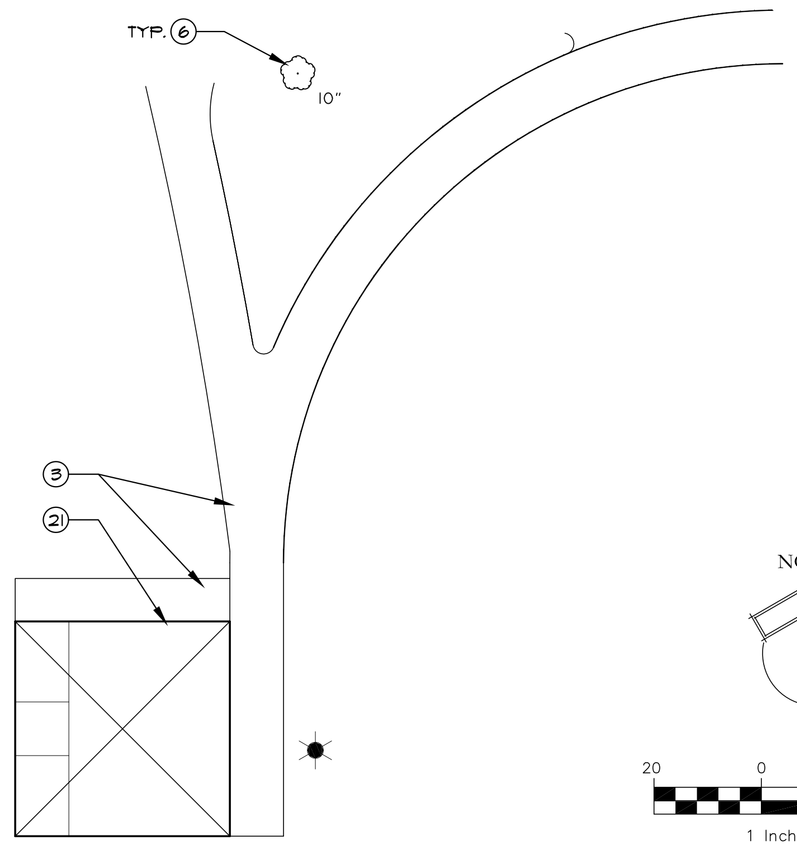
L) IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE ALL MUD, DIRT, GRAVEL AND OTHER MATERIALS TRACKED ONTO ANY PRIVATE OR PUBLIC STREETS OR SIDEWALKS. THE CONTRACTOR MUST CLEAN THESE DAILY, IF NECESSARY. THE CONTRACTOR MUST USE WATER OR OTHER EXCEPTABLE METHODS TO KEEP AIRBORNE DUST TO A REQUIRED MINIMUM.

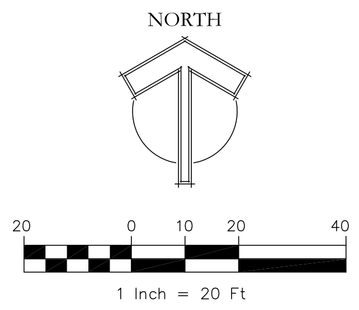
M) CONTRACTOR TO SUBMIT WALK LAYOUT AND JOINTING PLAN FOR APPROVAL TO OWNER PRIOR TO FORMING CONCRETE WALKS.

N) CONTRACTOR TO FIELD STAKE LOCATIONS OF WALKS, PICNIC AREA, AND PLAYGROUND AREAS FOR APPROVAL BY OWNER PRIOR TO START OF CONSTRUCTION.

O) THE CONTRACTOR SHALL IMMEDIATELY REPORT TO THE OWNER ANY UNFORESEEN OR ADVERSE CONDITIONS DISCOVERED DURING DEMOLITION OR CONSTRUCTION OPERATIONS.







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IBI GROUP

REV.	DATE	DESCRIPTION	BY

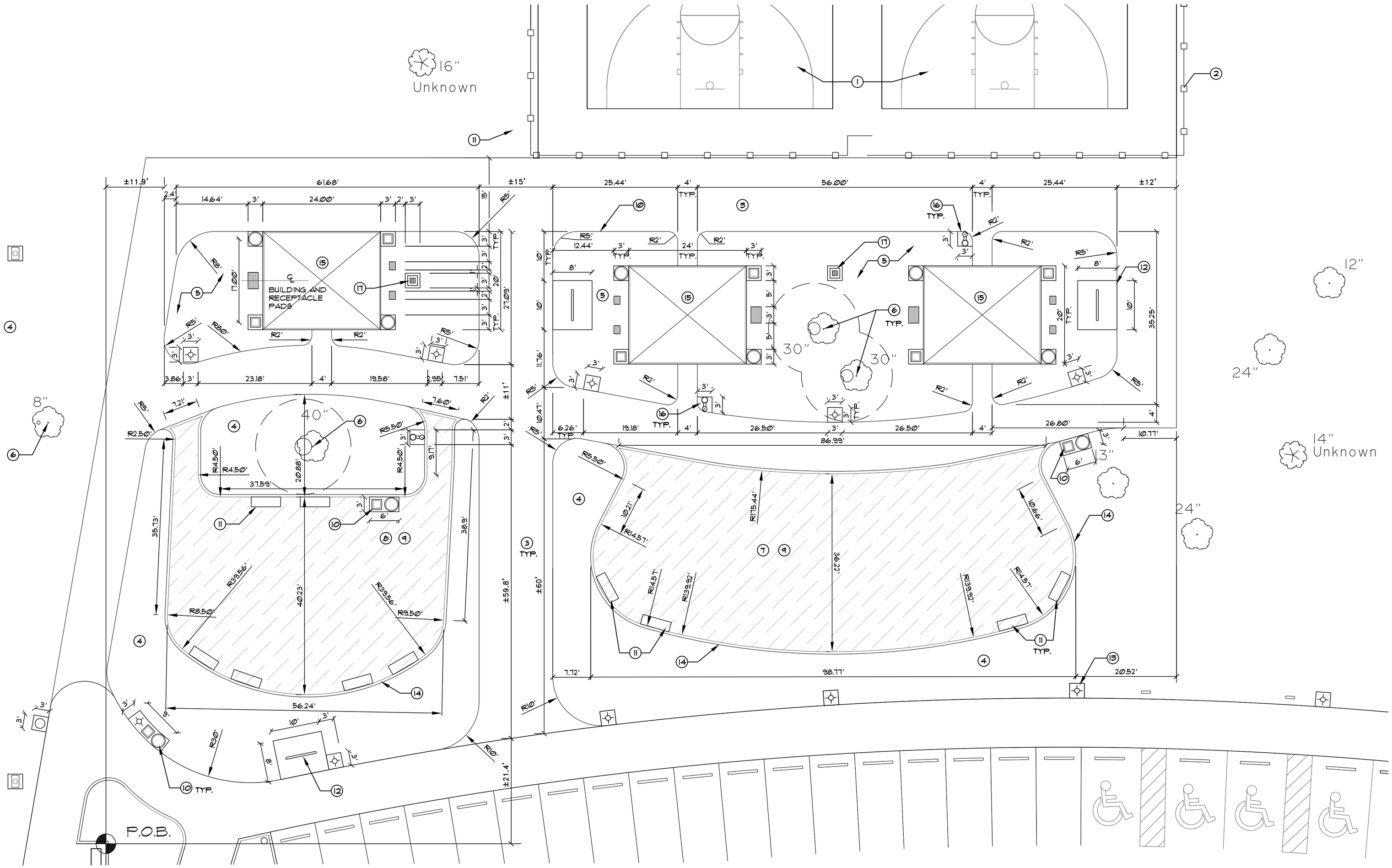
DRAWN: FW
DESIGNED: ST
CHECKED: ST
DATE: 08/22/08

NORMA LLOYD PARK
BRADENTON, FLORIDA

PHASE-2 SITE LAYOUT PLAN

20245

SHEET
L-10a



PLAYGROUND SAFETY SURFACE (BY OTHERS)

(A) AGES 8-12 3,300 SF

(B) AGES 2-5 2,200 SF

PHASE-2 SITE LAYOUT PLAN NOTES (AS DEPICTED ON PLAN):

1. TWO BASKETBALL COURTS (BY CONVERSE).
2. CHAINLINK FENCE (BY OTHERS).
3. CONCRETE SIDEWALK (SEE ENGINEER'S DETAIL SHEET C-5 AND SHEET L-15).
4. PLANTING AREA (SEE PHASE-2 LANDSCAPE PLAN).
5. PICNIC AREA WITH TABLES AND BENCHES.
6. EXISTING OAK TREES TO REMAIN.
7. PLAYGROUND EQUIPMENT FOR AGES 8-12 (BY OTHERS).
8. PLAYGROUND EQUIPMENT FOR AGES 2-5 (BY OTHERS).
9. PLAYGROUND SAFETY SURFACE (BY OTHERS).
10. TRASH RECEPTACLE AND RECYCLE BIN CONCRETE PAD. (SEE CONCRETE DETAIL SHEET L-15).
11. BENCH LOCATION (SEE DETAIL SHEET L-14).
12. BIKE RACK PAD (SEE CONCRETE DETAIL SHEET L-15).
13. LIGHT POLE LOCATION. (SEE UTILITY PLAN SHEET C-6).
14. CONCRETE CURB. (SEE DETAIL SHEET L-15).
15. PICNIC SHELTER. (SEE DETAIL SHEET L-15).
16. DRINKING FOUNTAIN (SEE DETAIL SHEET L-14).
17. HOT COAL BIN (SEE DETAIL SHEET L-15).

NORTH

10 0 5 10 20

1 Inch = 10 Ft

REV.	DATE	DESCRIPTION	BY

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NORMA LLOYD PARK
BRADENTON, FLORIDA

PHASE-2 PLAYGROUND AND PICNIC AREA LAYOUT PLAN

20245

SHEET
L-10b

TREE LEGEND

- LIVE OAK
- WINGED ELM
- LITTLE GEM MAGNOLIA
- CRAPE MYRTLE
- FRINGE TREE
- SABAL PALM

MULCH

PLAYGROUND SAFETY SURFACE (BY OTHERS)

BAHIA SOD

PLANT LEGEND

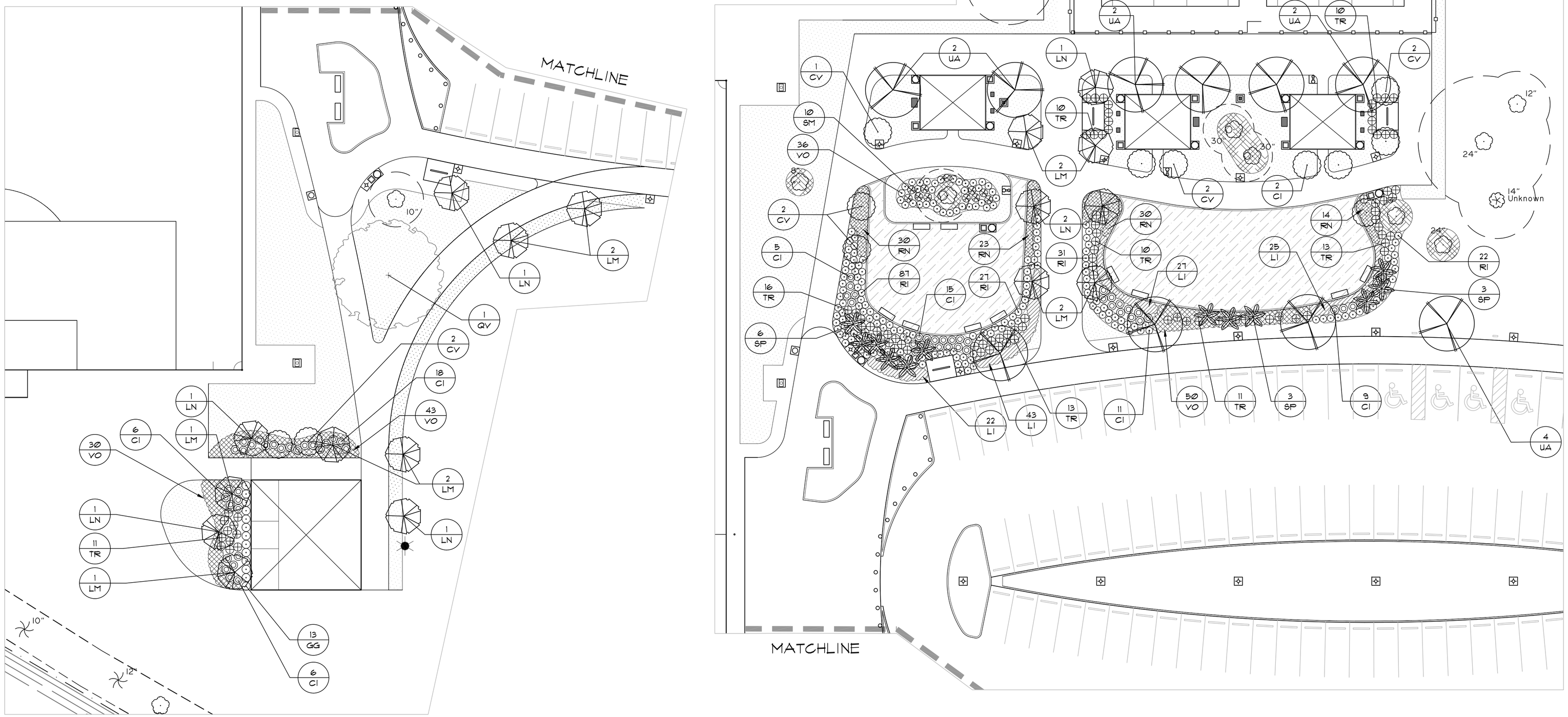
- SAW PALMETTO - SR
- DWARF PALMETTO - SM
- FIREBUSH - HP
- COCOPLUM - CI
- THRYALLIS - GG
- VIBURNUM DENSA - VO
- SANDCORD GRASS - SB
- MUHLY GRASS - MC
- DWARF FAKAHATCHEE GRASS - TR
- LIRIOPE - LM
- DWARF INDIAN HAWTHORN - RD
- OYSTER PLANT - RN
- SUNSHINE MIMOSA - MS

NOTE:
FOR PLANT MATERIAL QUANTITIES SEE PLAN L-4 OVERALL PLANTING PLAN.

NORTH

20 0 10 20 40

1 Inch = 20 Ft



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NORMA LLOYD PARK
BRADENTON, FLORIDA

PHASE-2 PLANTING PLAN

20245

SHEET
L-11

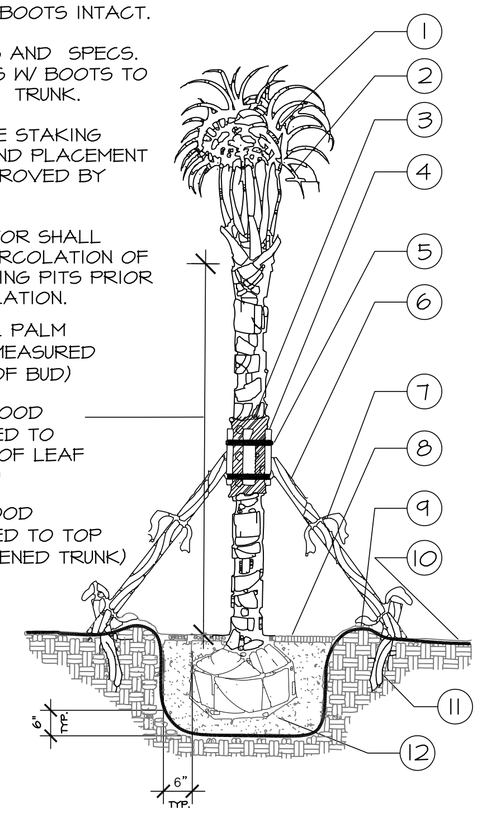
NOTES:

A. WASHINGTONIA PALMS SIMILAR W/BOOTS INTACT.

B. SEE PLANS AND SPECS. FOR PALMS W/ BOOTS TO REMAIN ON TRUNK.

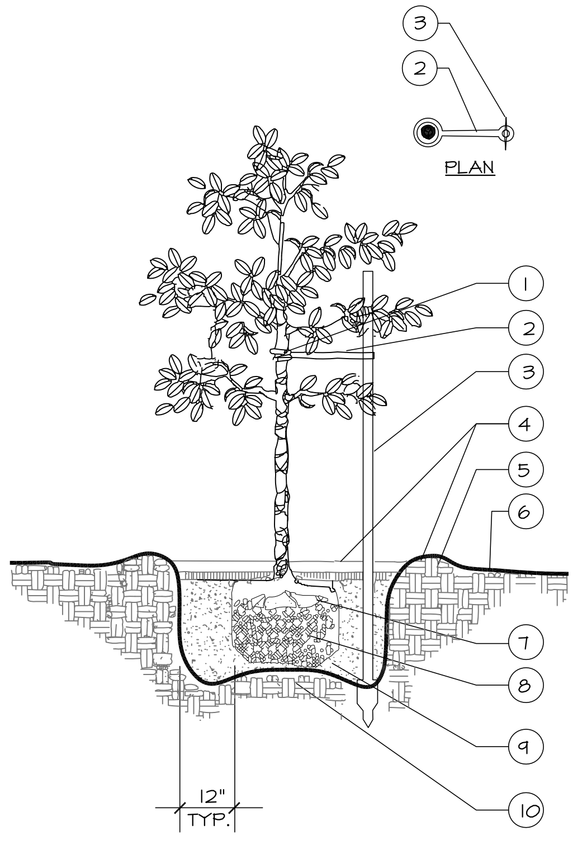
C. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

D. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.



1. MINIMUM OF NINE (9) GOOD PALM FRONDS
2. PRUNE AND TIE FRONDS WITH HEMP TWINE. CABBAGE PALMS TO BE "HURRICANE CUT"
3. 5 LAYERS OF BURLAP TO PROTECT TRUNK.
4. FIVE 2" X 4" X 18" WOOD BATTENS.
5. SECURE BATTENS WITH 2- 3/4" CARBON STEEL BANDS TO HOLD BATTENS IN PLACE. NO NAILS SHALL BE DRIVEN INTO PALM. HEIGHT OF BATTENS SHALL BE LOCATED IN RELATION TO THE HEIGHT OF THE PALM FOR ADEQUATE BRACING.
6. 3-2" X 4" x 8' NAIL (DRILL AND NAIL IF NECESSARY) TO BATTENS AND 2" X 4" STAKES. FLAG AT MIDPOINT AND AT BASE.
7. PROVIDE FLAGGING
8. 3" SPECIFIED MULCH
9. BERM SOIL TO HOLD WATER
10. FINISH GRADE
11. 2" X 4" X 24" (MIN.) P.T. WOOD STAKES (TYP.) NAIL TO SUPPORT POLES
12. PREPARED PLANTING SOIL AS SPECIFIED

1 PALM PLANTING DETAIL
NO SCALE



1. PROTECT TREE TRUNK WITH BLACK RUBBER HOSE.
2. "TREE MATE" TREE SUPPORT (S.C.S. NURSERY, NASHVILLE, GA.)-INSTALL PER MFG. SPECS TO T-POST
3. STEEL STAKE
4. 3" LAYER OF SPECIFIED MULCH.
5. SOIL BERM TO HOLD WATER.
6. FINISHED GRADE
7. TOP OF ROOTBALL MIN. 1" ABOVE FINISHED GRADE
8. B & B OR CONTAINERIZED (SEE SPECIFICATIONS FOR ROOT BALL REQUIREMENTS).
9. PREPARED PLANTING SOIL AS SPECIFIED.
10. ROOTBALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING ROOTBALLS SMALLER THAN 24" IN DIAMETER MAY SIT ON COMPACTED EARTH.

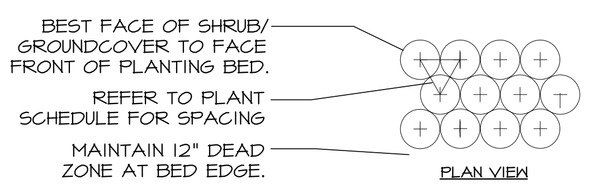
NOTES:

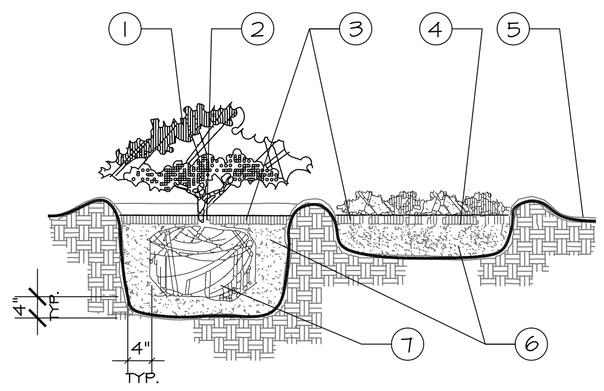
A. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

B. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

C. 'TREE-MATE-O' TO BE USED FOR ALL TREES UP TO 2-½" CAL.

2 SMALL TREE PLANTING DETAIL (LESS THAN 14')
NO SCALE NTS





NOTES:

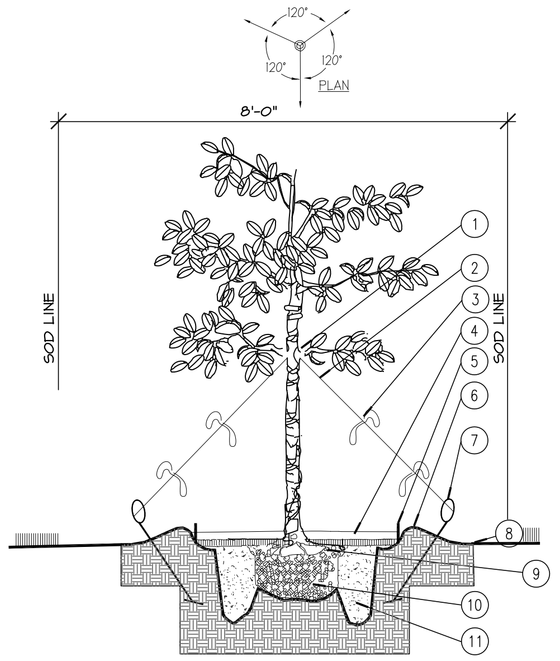
1. TOP OF SHRUB ROOTBALLS TO BE PLANTED 1" - 2" HIGH WITH SOIL MOUNDING UP TO THE TOP OF ROOTBALL.
2. PRUNE ALL SHRUBS TO ACHIEVE A UNIFORM MASS/HEIGHT.
3. 3" MINIMUM OF SPECIFIED MULCH.
4. EXCAVATE ENTIRE BED SPECIFIED FOR GROUDCOVER BED.
5. FINISHED GRADE.
6. PREPARED PLANTING SOIL AS SPECIFIED. NOTE: WHEN GROUND- COVERS AND SHRUBS USED IN MASSES ENTIRE BED TO BE AMENDED WITH PLANTING SOIL MIX AS SPECIFIED.
7. SCARIFY ROOTBALL SIDES AND BOTTOM.

3 SHRUB/GROUNDCOVER PLANTING DETAIL
NO SCALE

NOTES:

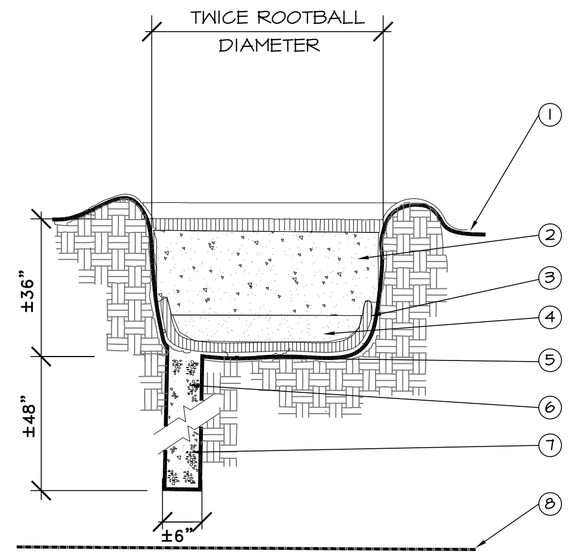
A. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

B. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.



1. PROTECTED TREE TRUNK BLACK RUBBER HOSING
2. 12" GA. WIRE GUY, EACH WITH A 6-1/2" STEEL TURNBUCKLE. ALL WIRE GALVANIZED STEEL.
3. 8" LONG WHITE SURVEYOR'S FLAGGING TAPE 2 PER GUY WIRE
4. 3" LAYER OF SPECIFIED MULCH
5. BLACK PLASTIC EDGING
6. 8" DEEP X 6' DIA. SAUCER. SOIL BERM TO HOLD WATER.
7. DUCKBILL ANCHOR PER MANUFACTURER'S SPECIFICATIONS
8. FINISHED GRADE - TOP OF ROOTBALL TO BE 1" MIN. ABOVE FINISHED GRADE
9. B&B OR CONTAINERIZED (SEE SPECIFICATIONS FOR ROOT BALL REQUIREMENTS).
10. ROOTBALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING.
11. PREPARED PLANTING SOIL AS SPECIFIED.

4 LARGE TREE PLANTING DETAIL
NO SCALE



1. FINISH GRADE
2. BACKFILL WITH PREPARED PLANTING SOIL MIX AS SPECIFIED.
3. FILTER CLOTH
4. 12"± CLEAN SAND, COMPACTED. ADJUST LAYER THICKNESS SO TOP OF ROOTBALL IS AT LEAST 1" ABOVE FINISHED GRADE.
5. SLOPE BOTTOM TO DRAIN
6. 18"± DEPTH AUGERED HOLE PENETRATE THROUGH OCCLUDING LAYER TO WATER TABLE OR TO A DEPTH OF 7' TO ASSURE PROPER PERCOLATION.
7. BACKFILL WITH 1/2" - 3/4" GRAVEL.
8. WATER TABLE. (DEPTH VARIES)

NOTE:
FOR A ROADSIDE PLANTING SITUATION, CONTRACTOR TO BACKFILL ENTIRE LENGTH OF PLANTING AREA TO WITHIN 12" OF BACK OF CURB OR EDGE OF PAVEMENT.

REFER TO WRITTEN SPECIFICATIONS FOR ADDITIONAL INFORMATION.

5 POOR DRAINAGE CONDITION DETAIL
NO SCALE

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IBI GROUP

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NORMA LLOYD PARK
BRADENTON, FLORIDA

PHASE-2 LANDSCAPE DETAILS

AS SHOWN

20245

SHEET
L-12

GENERAL LANDSCAPE SPECIFICATIONS AND NOTES

A. SCOPE OF WORK

1. THE WORK CONSISTS OF FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, AND ANY OTHER APPURTENANCES NECESSARY FOR THE COMPLETION OF THIS PROJECT AS SHOWN ON THE DRAWINGS, AS INCLUDED IN THE PLANT LIST, AND AS HEREIN SPECIFIED.

2. WORK SHALL INCLUDE MAINTENANCE AND WATERING OF ALL PLANTING AREAS OF THIS CONTRACT (INCLUDING SOD) UNTIL CERTIFICATION OF ACCEPTABILITY BY THE OWNER.

B. PROTECTION OF EXISTING STRUCTURES

ALL EXISTING BUILDINGS, WALKS, WALLS, PAVING, PIPING, AND OTHER ITEMS OF CONSTRUCTION AND PLANTING ALREADY COMPLETED OR ESTABLISHED SHALL BE PROTECTED FROM DAMAGE BY THIS CONTRACTOR UNLESS OTHERWISE SPECIFIED. ALL DAMAGE RESULTING FROM NEGLIGENCE SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER.

C. PROTECTION OF EXISTING PLANT

MATERIALS OUTSIDE LIMIT OF WORK: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UNAUTHORIZED CUTTING OR DAMAGE TO TREES AND SHRUBS EXISTING OR OTHERWISE, CAUSED BY CARELESS OPERATION OF EQUIPMENT, STOCKPILING OF MATERIALS, ETC. THIS SHALL INCLUDE COMPACTION BY DRIVING OR PARKING INSIDE THE DRIP-LINE OR THE SPILLING OF OIL, GASOLINE, OR OTHER DELETERIOUS MATERIALS WITHIN THE DRIP-LINE. NO MATERIALS SHALL BE BURNED ON SITE. TREES KILLED OR DAMAGED SO THAT THEY ARE MISSHAPEN AND/OR UNSIGHTLY SHALL BE REPLACED AT THE COST TO THE CONTRACTOR OF ONE HUNDRED DOLLARS ($100) PER CALIPER INCH ON AN ESCALATING SCALE WHICH ADDS AN ADDITIONAL TWENTY (20) PER CENT PER INCH OVER FOUR (4) INCHES CALIPER AS FIXED AND AGREED LIQUIDATED DAMAGES. CALIPER SHALL BE MEASURED SIX (6) INCHES ABOVE GROUND LEVEL FOR TREES UP TO AND INCLUDING FOUR (4) INCHES IN CALIPER AND TWELVE (12) INCHES ABOVE GROUND LEVEL FOR TREES OVER FOUR (4) INCHES IN CALIPER.

D. MATERIALS

1. GENERAL SAMPLES OF MATERIALS AS LISTED BELOW SHALL BE SUBMITTED FOR APPROVAL, ON THE SITE OR AS OTHERWISE DETERMINED BY THE OWNER. UPON APPROVAL OF SAMPLES, DELIVERY OF MATERIALS MAY BEGIN.

MATERIALS	SAMPLES
MULCH	ONE (1) CUBIC FOOT
TOPSOIL	ONE (1) CUBIC YARD
PLANTS	ONE (1) OF EACH VARIETY

2. PLANT MATERIALS: PLANT SPECIES AND SIZE SHALL CONFORM TO THOSE INDICATED ON THE DRAWINGS. NOMENCLATURE SHALL CONFORM TO STANDARDIZED PLANT NAMES, CURRENT EDITION. ALL NURSERY STOCK SHALL BE IN ACCORDANCE WITH GRADES AND STANDARDS FOR NURSERY PLANTS PARTS I AND II, LATEST EDITION PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES. ALL PLANTS, UNLESS OTHERWISE NOTED, SHALL BE FLORIDA GRADE NO. I OR BETTER AS DETERMINED BY THE FLORIDA DIVISION OF PLANT INDUSTRY. ALL PLANTS SHALL BE FRESHLY DUG, SOUND, HEALTHY, VIGOROUS, WELL-BRANCHED AND FREE OF DISEASE AND INSECTS, INSECT EGGS AND LARVAE AND SHALL HAVE ADEQUATE ROOT SYSTEMS. TREES FOR PLANTING IN ROWS SHALL BE UNIFORM IN SIZE AND SHAPE. ALL MATERIALS SHALL BE SUBJECT TO APPROVAL BY THE OWNER. WHERE ANY REQUIREMENTS ARE OMITTED FROM THE PLANT LIST, THE PLANTS FURNISHED SHALL BE NORMAL FOR THE VARIETY. PLANTS SHALL BE PRUNED PRIOR TO DELIVERY ONLY UPON THE APPROVAL OF THE OWNER.

3. MEASUREMENTS: THE HEIGHT AND/OR WIDTH OF TREES SHALL BE MEASURED FROM THE GROUND OR ACROSS THE NORMAL SPREAD OF BRANCHES WITH THE PLANTS IN THEIR NORMAL POSITION. THIS MEASUREMENT SHALL NOT INCLUDE THE IMMEDIATE TERMINAL GROWTH. PLANTS LARGER IN SIZE THAN THOSE SPECIFIED IN THE PLANT LIST MAY BE USED IF APPROVED BY THE OWNER. IF THE USE OF LARGER PLANTS IS APPROVED, THE BALL OF EARTH OR SPREAD OF ROOTS SHALL BE INCREASED IN PROPORTION TO THE SIZE OF THE PLANT.

4. INSPECTION: PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, OR UPON DELIVERY TO THE SITE, AS DETERMINED BY THE OWNER, FOR QUALITY, SIZE, AND VARIETY. SUCH APPROVAL SHALL NOT IMPAIR THE RIGHT OF INSPECTION AND REJECTION AT THE SITE DURING PROGRESS OF THE WORK OR AFTER COMPLETION FOR SIZE AND CONDITION OF BALLS OR ROOTS, LATENT DEFECTS OR INJURIES. REJECTED PLANTS SHALL BE REMOVED IMMEDIATELY FROM THE SITE. NOTICE REQUESTING INSPECTION SHALL BE SUBMITTED IN WRITING BY THE CONTRACTOR AT LEAST ONE (1) WEEK PRIOR TO ANTICIPATED DATE.

E. TOPSOIL AND SAND (PLANTING SOIL)

TOPSOIL FOR USE IN PREPARING SOIL FOR BACKFILLING PLANT PITS SHALL BE THIRTY PERCENT (30%) LOAM AND SEVENTY PERCENT (70%) SAND AND BE FERTILE, FRIABLE, AND OF A LOAMY CHARACTER, WITHOUT MIXTURE OF SUBSOIL MATERIALS, AND OBTAINED FROM A WELL-DRAINED, ARABLE SITE. IT SHALL CONTAIN THREE (3) TO FIVE (5) PERCENT DECOMPOSED ORGANIC MATTER AND SHALL BE FREE FROM HEAVY CLAY, COARSE SAND, STONES, LIME, LUMPS, PLANTS, ROOTS OR OTHER FOREIGN MATERIALS, OR NOXIOUS WEEDS. IT SHALL NOT CONTAIN TOXIC SUBSTANCES WHICH MAY BE HARMFUL TO PLANT GROWTH. PH RANGE SHALL BE 5.0 TO 7.0 INCLUSIVE. SAND SHALL BE COARSE, CLEAN, WELL RAINING NATIVE SAND. CONTRACTOR SHALL SUBMIT RESULTS OF SOIL TESTS FOR TOPSOIL AND SAND PROPOSED FOR USE UNDER THIS CONTRACT FOR APPROVAL BY THE OWNER.

TREES SHALL BE PLANTED IN THE EXISTING NATIVE SOIL ONSITE UNLESS DETERMINED TO BE UNSUITABLE AT WHICH POINT THE CONTRACTOR SHALL CONTACT LANDSCAPE ARCHITECT TO DISCUSS ALTERNATE RECOMMENDATION PRIOR TO PLANTING.

F. WATER

WATER NECESSARY FOR PLANTING AND MAINTENANCE SHALL BE OF SATISFACTORY QUALITY TO SUSTAIN AN ADEQUATE GROWTH OF PLANTS AND SHALL NOT CONTAIN HARMFUL, NATURAL OR MAN-MADE ELEMENTS DETRIMENTAL TO PLANTS. WATER MEETING THE ABOVE STANDARD SHALL BE OBTAINED ON THE SITE FROM THE OWNER, IF AVAILABLE, AND THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE ARRANGEMENTS FOR ITS USE BY HIS TANKS, HOSES, SPRINKLERS, ETC. IF SUCH WATER IS NOT AVAILABLE AT THE SITE, THE CONTRACTOR SHALL PROVIDE SUCH SATISFACTORY WATER FROM SOURCES OFF THE SITE AT NO ADDITIONAL COST TO THE OWNER.

G. COMMERCIAL FERTILIZER

COMMERCIAL FERTILIZER SHALL BE A COMPLETE FORMULA; IT SHALL BE UNIFORM IN COMPOSITION, DRY AND FREE FLOWING. THIS FERTILIZER SHALL BE DELIVERED TO THE SITE IN THE ORIGINAL UNOPENED CONTAINERS, EACH BEARING THE MANUFACTURER'S GUARANTEED STATEMENT OF ANALYSIS. FIFTY PERCENT (50%) OF THE NITROGEN SHALL BE DERIVED FROM NATURAL ORGANIC SOURCES. THE FOLLOWING FERTILIZERS SHALL BE USED AND APPLIED AT RATES AS SUGGESTED BY MANUFACTURER'S SPECIFICATIONS:

1. SHRUBS AND TREES - MILORGANITE, OR APPROVED EQUAL

2. ANNUALS AND GROUNDCOVERS - OSMOCOTE/SIERRA BLEND 14-14-14

3. SOD - 8-8-8

H. MULCH

MULCH MATERIAL SHALL BE MOISTENED AT THE TIME OF APPLICATION TO PREVENT WIND DISPLACEMENT, AND APPLIED AT A DEPTH OF 3 INCHES. SEE PLANT LIST FOR TYPE OF MATERIAL AND GRADE. FOR MULCH CONTACT: WOOD RESOURCE RECOVERY, PHONE # (352) 378-9133.

I. DIGGING AND HANDLING

1. PROTECT ROOTS OR BALLS OF PLANTS AT ALL TIMES FROM SUN AND DRYING WINDS, WATER AND FREEZING, AS NECESSARY UNTIL PLANTING. PLANT MATERIALS SHALL BE ADEQUATELY PACKED TO PREVENT BREAKAGE AND DRYING OUT DURING TRANSIT. TREES TRANSPORTED MORE THAN TEN (10) MILES OR WHICH ARE NOT PLANTED WITHIN THREE (3) DAYS OF DELIVERY TO SITE SHALL BE SPRAYED WITH AN ANTITRANSPIRANT PRODUCT ("WILTPRUF" OR EQUAL) TO MINIMIZE TRANSPIRATIONAL WATER LOSS.

2. BALLED AND BURLAPPED PLANTS (B&B) SHALL BE DUG WITH FIRM, NATURAL BALLS OF SOIL OF SUFFICIENT SIZE TO ENCOMPASS THE FIBROUS AND FEEDING ROOTS OF THE PLANTS. NO PLANTS MOVED WITH A BALL SHALL BE PLANTED IF THE BALL IS CRACKED OR BROKEN. PLANTS BALLED AND BURLAPPED OR CONTAINER GROWN SHALL NOT BE HANDLED BY STEMS.

3. PLANTS MARKED "BR" IN THE PLANT LIST SHALL BE DUG WITH BARE ROOTS. THE ROOTS SHALL NOT BE CUT WITHIN THE MINIMUM SPREAD SPECIFIED IN THE PLANT LIST. CARE SHALL BE EXERCISED THAT THE ROOTS DO NOT DRY OUT IN MOVING AND PRIOR TO PLANTING.

4. PROTECTION OF PALMS (IF APPLICABLE): ONLY A MINIMUM OF FRONDS SHALL BE REMOVED FROM THE CROWN OF THE PALM TREES TO FACILITATE MOVING AND HANDLING. CLEAR TRUNK (CT) SHALL BE AS SPECIFIED AFTER THE MINIMUM OF FRONDS HAVE BEEN REMOVED. ALL PALMS SHALL BE BRACED PER DETAIL.

5. EXCAVATION OF TREE PITS SHALL BE DONE USING EXTREME CARE TO AVOID DAMAGE TO SURFACE AND SUBSURFACE ELEMENTS SUCH AS UTILITIES OR HARDSCAPE ELEMENTS, FOOTERS AND PREPARED SUB-BASES.

J. CONTAINER GROWN STOCK

1. ALL CONTAINER GROWN MATERIAL SHALL BE HEALTHY, VIGOROUS, WELL-ROOTED AND ESTABLISHED IN THE CONTAINER IN WHICH THEY ARE SOLD. THE PLANTS SHALL HAVE TOPS WHICH ARE OF GOOD QUALITY AND ARE IN A HEALTHY GROWING CONDITION.

2. AN ESTABLISHED CONTAINER GROWN PLANT SHALL BE TRANSPLANTED INTO A CONTAINER AND GROWN IN THAT CONTAINER SUFFICIENTLY LONG FOR THE NEW FIBROUS ROOTS TO HAVE DEVELOPED SO THAT THE ROOT MASS WILL RETAIN ITS SHAPE AND HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER. CONTAINER GROWN STOCK SHALL NOT BE HANDLED BY THEIR STEMS.

3. PLANT ROOTS BOUND IN CONTAINERS SHALL NOT BE ACCEPTABLE.

4. SUBSTITUTION OF NON-CONTAINER GROWN MATERIAL FOR MATERIAL EXPLICITLY SPECIFIED TO BE CONTAINER GROWN WILL NOT BE PERMITTED UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE OWNER AND LANDSCAPE ARCHITECT.

K. COLLECTED STOCK

WHEN THE USE OF COLLECTED STOCK IS PERMITTED, AND ONLY AS INDICATED ON THE PLANT LIST SCHEDULE, THE MINIMUM SIZES OF ROOTBALLS SHALL BE EQUAL TO THAT SPECIFIED FOR THE NEXT LARGER SIZE OF NURSERY GROWN STOCK OF THE SAME VARIETY.

L. NATIVE STOCK

PLANTS COLLECTED FROM WILD OR NATIVE STANDS SHALL BE CONSIDERED NURSERY GROWN WHEN THEY HAVE BEEN SUCCESSFULLY REESTABLISHED IN A NURSERY ROW AND GROWN UNDER REGULAR NURSERY CULTURAL PRACTICES FOR A MINIMUM OF TWO (2) GROWING SEASONS AND HAVE ATTAINED ADEQUATE ROOT AND TOP GROWTH TO INDICATE FULL RECOVERY FROM TRANSPLANTING INTO THE NURSERY ROW.

M. MATERIALS LIST

QUANTITIES NECESSARY TO COMPLETE THE WORK ON THE DRAWINGS SHALL BE FURNISHED BY THE CONTRACTOR. QUANTITY ESTIMATES HAVE BEEN MADE CAREFULLY, BUT THE LANDSCAPE ARCHITECT OR OWNER ASSUMES NO LIABILITY FOR OMISSIONS OR ERRORS. SHOULD A DISCREPANCY OCCUR BETWEEN THE BIDDERS TAKE OFF AND THE PLANT LIST QUANTITY, THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION PRIOR TO THE SUBMISSIONS OF BIDS.

ALL DIMENSIONS AND/OR SIZES SPECIFIED SHALL BE THE MINIMUM ACCEPTABLE SIZE.

N. FINE GRADING

1. FINE GRADING UNDER THIS CONTRACT SHALL CONSIST OF FINAL FINISHED GRADING OF SITE FEATURES AND PLANTING AREAS THAT HAVE BEEN ROUGH GRADED BY OTHERS.

2. THE LANDSCAPE CONTRACTOR SHALL FINE GRADE THE LAWN AND PLANTING AREAS TO BRING THE ROUGH GRADE UP TO FINAL FINISHED GRADE ALLOWING FOR THICKNESS OF SOD AND/OR MULCH DEPTH. THIS CONTRACTOR SHALL FINE GRADE BY HAND AND/OR WITH ALL EQUIPMENT NECESSARY INCLUDING A GRADING TRACTOR WITH FRONT-END LOADER FOR TRANSPORTING SOIL WITHIN THE SITE.

3. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED TO ALLOW FREE FLOW OF SURFACE WATER. AREAS ADJACENT TO BUILDINGS SHALL SLOPE AWAY FROM THE BUILDINGS.

O. PLANTING PROCEDURES

1. CLEANING UP BEFORE COMMENCING WORK: THE CONTRACTOR SHALL CLEAN UP WORK AND SURROUNDING AREAS OF ALL RUBBISH OR OBJECTIONABLE MATTER. ALL MORTAR, CEMENT, AND TOXIC MATERIAL SHALL BE REMOVED FROM THE SURFACE OF ALL PLANT BEDS. THESE MATERIALS SHALL NOT BE MIXED WITH THE SOIL. SHOULD THE CONTRACTOR FIND SUCH SOIL CONDITIONS BENEATH THE SOIL WHICH WILL IN ANY WAY ADVERSELY AFFECT THE PLANT GROWTH, HE SHALL IMMEDIATELY CALL IT TO THE ATTENTION OF THE OWNER. FAILURE TO DO SO BEFORE PLANTING SHALL MAKE THE CORRECTIVE MEASURES THE RESPONSIBILITY OF THE CONTRACTOR.

2. VERIFY LOCATIONS OF ALL UTILITIES, CONDUITS, SUPPLY LINES AND CABLES, INCLUDING BUT NOT LIMITED TO: ELECTRIC, GAS (LINES AND TANKS), WATER, SANITARY SEWER, STORMWATER LINES, CABLE AND TELEPHONE. PROPERLY MAINTAIN AND PROTECT EXISTING UTILITIES.

3. SUBGRADE EXCAVATION: SITE CONTRACTOR IS RESPONSIBLE TO REMOVE ALL EXISTING AND IMPORTED LIMEROCK AND LIMEROCK SUB-BASE FROM ALL LANDSCAPE PLANTING AREAS TO A MINIMUM DEPTH OF 36". SITE CONTRACTOR IS RESPONSIBLE TO BACKFILL THESE PLANTING AREAS TO ROUGH FINISHED GRADE WITH CLEAN TOPSOIL FROM AN ON-SITE SOURCE OR AN IMPORTED SOURCE. IF LIMEROCK OR OTHER ADVERSE CONDITIONS OCCUR IN PLANTED AREAS AFTER 36" DEEP EXCAVATION BY SITE CONTRACTOR, AND POSITIVE DRAINAGE CAN NOT BE ACHIEVED, LANDSCAPE CONTRACTOR SHALL UTILIZE PLANTING DETAIL THAT ADDRESSES POOR DRAINAGE.

4. FURNISH NURSERY'S CERTIFICATE OF COMPLIANCE WITH ALL REQUIREMENTS AS HEREIN SPECIFIED AND REQUIRED. INSPECT AND SELECT PLANT MATERIALS BEFORE PLANTS ARE DUG AT NURSERY OR GROWING SITE.

5. GENERAL: COMPLY WITH APPLICABLE FEDERAL, STATE, COUNTY, AND LOCAL REGULATIONS GOVERNING LANDSCAPE MATERIALS AND WORK. CONFORM TO ACCEPTED HORTICULTURAL PRACTICES AS USED IN THE GRADE. 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 TWENTY-FOUR (24) HOURS. AT ALL TIMES WORKMANLIKE METHODS CUSTOMARY IN GOOD HORTICULTURAL PRACTICES SHALL BE EXERCISED.

6. THE WORK SHALL BE COORDINATED WITH OTHER TRADES TO PREVENT CONFLICTS.

7. ALL PLANTING PITS SHALL BE EXCAVATED TO SIZE AND DEPTH IN ACCORDANCE WITH THE USDA STANDARD FOR NURSERY STOCK 260.1, UNLESS SHOWN OTHERWISE ON THE DRAWINGS, AND BACKFILLED WITH THE PREPARED PLANTING SOIL AS SPECIFIED HEREIN BEFORE (SECTION E). TEST ALL TREE PITS WITH WATER BEFORE PLANTING TO ASSURE PROPER DRAINAGE PERCOLATION IS AVAILABLE. NO ALLOWANCE WILL BE MADE FOR LOST PLANTS DUE TO IMPROPER DRAINAGE. IF POOR DRAINAGE EXISTS, UTILIZE PLANTING DETAIL THAT ADDRESSES THIS CONDITION. TREES SHALL BE SET PLUMB AND HELD IN POSITION UNTIL THE PLANTING MIXTURE HAS BEEN FLUSHED INTO PLACE WITH A SLOW, FULL HOSE STREAM. ALL PLANTING SHALL BE PERFORMED BY PERSONNEL FAMILIAR WITH PLANTING PROCEDURE AND UNDER THE SUPERVISION OF A QUALIFIED PLANTING FOREMAN. PROPER "JETTING IN" SHALL BE ASSURED TO ELIMINATE AIR POCKETS AROUND THE ROOTS. "JET STICK" OR EQUAL IS RECOMMENDED.

8. TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO BUILDINGS AND BUILDING STRUCTURES DURING CONSTRUCTION.

9. SOIL MIXTURE SHALL BE AS SPECIFIED IN SECTION E OF THESE SPECIFICATIONS. IN ADDITION, EACH PLANTING PIT SHALL RECEIVE 21-GRAM "AGRIFORM" (24-10-5 FORMULA) PLANTING TABLETS PER MANUFACTURER'S SPECIFICATIONS OR AS FOLLOWS:

-TWO (2) TABLETS PER 1 GAL. PLANT
-THREE (3) TABLETS PER 3 GAL. PLANT
-FOUR (4) TABLETS PER 7 GAL. PLANT

10. TREES AND SHRUBS SHALL BE SET STRAIGHT AND AT SUCH A LEVEL THAT AFTER SETTLEMENT, THE PLANT CROWN WILL STAND ONE (1) TO TWO (2) INCHES ABOVE GRADE. EACH PLANT SHALL BE SET IN THE CENTER OF THE PIT. PLANTING SOIL MIXTURE SHALL BE BACKFILLED AND THOROUGHLY TAMPED AROUND THE BALL AND SHALL BE SETTLED BY WATER AFTER TAMPING.

11. FILL HOLE WITH SOIL MIXTURE, MAKING CERTAIN ALL SOIL IS SATURATED. TO DO THIS, FILL HOLE WITH WATER AND ALLOW TO SOAK MINIMUM TWENTY (20) MINUTES, STIRRING IF NECESSARY TO GET SOIL THOROUGHLY WET. PACK LIGHTLY WITH FEET. ADD MORE WET SOIL MIXTURE. DO NOT COVER TOP OF BALL WITH SOIL MIXTURE, ONLY WITH MULCH. ALL BURLAP, ROPE, WIRES, ETC., SHALL BE REMOVED FROM THE SIDES AND TOPS OF BALLS, BUT NO BURLAP SHALL BE PULLED FROM UNDERNEATH.

12. PRUNING: EACH TREE SHALL BE PRUNED TO PRESERVE THE NATURAL CHARACTER OF THE PLANT AS SHOWN ON THE DRAWINGS. ALL SOFT WOOD OR SUCKER GROWTH AND ALL BROKEN OR BADLY DAMAGED BRANCHES SHALL BE REMOVED WITH A CLEAN CUT.

13. SHRUBS AND GROUND COVER PLANTS SHALL BE EVENLY SPACED IN ACCORDANCE WITH THE DRAWINGS AND AS INDICATED ON THE PLANT LIST. CULTIVATE ALL PLANTING AREAS TO A MINIMUM DEPTH OF 6", REMOVE AND DISPOSE ALL DEBRIS. TILL INTO THE TOP 4" OF THE PLANTING SOIL MIX AS SPECIFIED IN SECTION E. THOROUGHLY WATER ALL PLANTS AFTER INSTALLATION.

14. TREE GUYING AND BRACING SHALL BE INSTALLED BY THE LANDSCAPE CONTRACTOR IN ACCORDANCE WITH THE PLANS TO INSURE STABILITY AND MAINTAIN TREES IN AN UPRIGHT POSITION. IF THE LANDSCAPE CONTRACTOR AND OWNER DECIDE TO WAIVE THE TREE GUYING AND BRACING, THE OWNER SHALL NOTIFY THE LANDSCAPE ARCHITECT IN WRITING OF THEIR INTENTIONS AND AGREE TO HOLD HARMLESS THE LANDSCAPE ARCHITECT IN THE EVENT ANY TREES FALL DOWN AND DAMAGE PERSON OR PROPERTY.

15. MULCHING: PROVIDE A THREE (3) INCH MINIMUM LAYER OF SPECIFIED MULCH OVER THE ENTIRE AREA OF EACH SHRUB BED, GROUND COVER, VINE BED AND TREE PIT.

16. HERBICIDE WEED CONTROL: ALL PLANT BEDS SHALL BE KEPT FREE OF NOXIOUS WEEDS UNTIL FINAL ACCEPTANCE OF WORK. IF DIRECTED BY THE OWNER, "ROUND-UP" SHALL BE APPLIED FOR WEED CONTROL BY QUALIFIED PERSONNEL TO ALL PLANTING AREAS IN SPOT APPLICATIONS PER MANUFACTURER'S PRECAUTIONS AND SPECIFICATIONS. PRIOR TO FINAL INSPECTION, TREAT ALL PLANTING BEDS WITH AN APPROVED PRE-EMERGENT HERBICIDE AT AN APPLICATION RATE RECOMMENDED BY THE MANUFACTURER.

P. LAWN SODDING

1. THE WORK CONSISTS OF LAWN BED PREPARATION, SOIL PREPARATION, AND SODDING COMPLETE, IN STRICT ACCORDANCE WITH THE SPECIFICATIONS AND THE APPLICABLE DRAWINGS TO PRODUCE A GRASS LAWN ACCEPTABLE TO THE OWNER.

2. LAWN BED PREPARATION: ALL AREAS THAT ARE TO BE SODDED SHALL BE CLEARED OF ANY ROUGH GRASS, WEEDS, AND DEBRIS, AND THE GROUND BROUGHT TO AN EVEN GRADE. THE WHOLE SURFACE SHALL BE ROLLED WITH A ROLLER WEIGHING NOT MORE THAN ONE-HUNDRED (100) POUNDS PER FOOT OF WIDTH. DURING THE ROLLING, ALL DEPRESSIONS CAUSED BY SETTLEMENT OF ROLLING SHALL BE FILLED WITH ADDITIONAL SOIL, AND THE SURFACE SHALL BE REGRADED AND ROLLED UNTIL PRESENTING A SMOOTH AND EVEN FINISH THAT IS UP TO THE REQUIRED GRADE.

3. SOIL PREPARATION: PREPARE LOOSE BED FOUR (4) INCHES DEEP. APPLY FERTILIZER AT RATE OF TWENTY (20) POUNDS PER ONE THOUSAND (1000) SQUARE FEET. APPLICATION SHALL BE UNIFORM, UTILIZING APPROVED MECHANICAL SPREADERS. MIX FERTILIZER THOROUGHLY WITH THE SOIL TO A DEPTH OF THREE (3) INCHES. HAND RAKE UNTIL ALL BUMPS AND DEPRESSIONS ARE REMOVED. WET PREPARED AREA THOROUGHLY.

4. SODDING: THE CONTRACTOR SHALL SOD ALL AREAS THAT ARE NOT PAVED OR PLANTED AS DESIGNATED ON THE DRAWINGS WITHIN THE CONTRACT LIMITS, UNLESS SPECIFICALLY NOTED OTHERWISE. THE SOD SHALL BE CERTIFIED TO MEET FLORIDA STATE PLANT BOARD SPECIFICATIONS, ABSOLUTELY TRUE TO VARIETAL TYPE, AND FREE FROM WEEDS, FUNGUS, INSECTS AND DISEASE OF ANY KIND. SOD PANELS SHALL BE LAID TIGHTLY TOGETHER SO AS TO MAKE A SOLID SODDED LAWN AREA. SOD SHALL BE LAID UNIFORMLY AGAINST THE EDGES OF ALL CURBS AND OTHER HARDSCAPE ELEMENTS, PAVED AND PLANTED AREAS. IMMEDIATELY FOLLOWING SOD LAYING, THE LAWN AREAS SHALL BE ROLLED WITH A LAWN ROLLER CUSTOMARILY USED FOR SUCH PURPOSES, AND THEN THOROUGHLY WATERED. IF, IN THE OPINION OF THE OWNER, TOP-DRESSING IS NECESSARY AFTER ROLLING TO FILL THE VOIDS BETWEEN THE SOD PANELS AND TO EVEN OUT INCONSISTENCIES IN THE SOD, CLEAN SAND AS APPROVED BY THE LANDSCAPE ARCHITECT OR OWNER SHALL BE UNIFORMLY SPREAD OVER THE ENTIRE SURFACE OF THE SOD AND THOROUGHLY WATERED IN.

5. DURING DELIVERY, PRIOR TO 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 SO AS NOT TO BE DAMAGED BY SWEATING OR EXCESSIVE HEAT AND MOISTURE.

6. LAWN MAINTENANCE: WITHIN THE CONTRACT LIMITS, THE CONTRACTOR SHALL PRODUCE A DENSE, WELL ESTABLISHED LAWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND RE-SODDING OF ALL ERODED, SUNKEN OR BARE SPOTS UNTIL CERTIFICATION OF ACCEPTABILITY BY THE LANDSCAPE ARCHITECT OR OWNER. REPAIRED SODDING SHALL BE ACCOMPLISHED AS IN THE ORIGINAL WORK (INCLUDING REGRADING IF NECESSARY). WATER EVERY DAY FOR TEN (10) SUCCESSIVE DAYS, THEN WATER THREE (3) TIMES PER WEEK (AT EVEN INTERVALS) FOR TWO (2) ADDITIONAL WEEKS. ALL WATERING SHALL BE OF SUFFICIENT QUANTITY TO SUPPORT THE HEALTHY AND VIGOROUS GROWTH OF THE SOD.

Q. CLEAN-UP

UPON COMPLETION OF ALL PLANTING WORK AND BEFORE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL MATERIAL, EQUIPMENT, AND DEBRIS RESULTING FROM HIS WORK. ALL PAVED AREAS SHALL BE BROOM CLEANED AND THE SITE LEFT IN A NEAT AND ACCEPTABLE CONDITION AS APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE.

R. PLANT MATERIAL MAINTENANCE

ALL PLANTS AND PLANTING INCLUDED UNDER THIS CONTRACT SHALL BE MAINTAINED BY WATERING, CULTIVATING, SPRAYING, AND ALL OTHER OPERATIONS (SUCH AS RE-STAKING OR REPAIRING GUY SUPPORTS) NECESSARY TO INSURE A HEALTHY CONDITION BY THE CONTRACTOR FOR THE WARRANTY PERIOD. CONTRACTORS ARE REQUESTED TO PROVIDE A BID ESTIMATE TO COVER LANDSCAPE AND IRRIGATION MAINTENANCE FOR A PERIOD OF 1 YEAR COMMENCING AFTER CERTIFICATION OF ACCEPTABILITY.

S. GUARANTEE

1. THE LIFE AND SATISFACTORY CONDITION OF ALL PLANT MATERIAL INSTALLED BY THE LANDSCAPE CONTRACTOR SHALL BE GUARANTEED BY THE CONTRACTOR FOR A MINIMUM OF ONE (1) CALENDAR YEAR COMMENCING AT THE TIME OF CERTIFICATION OF ACCEPTABILITY BY THE LANDSCAPE ARCHITECT OR OWNER.

2. THE LIFE AND SATISFACTORY CONDITION OF ALL SOD INSTALLED BY THE LANDSCAPE CONTRACTOR SHALL BE GUARANTEED BY THE CONTRACTOR FOR A MINIMUM OF 180 CALENDAR DAYS, COMMENCING AT THE TIME OF CERTIFICATION OF ACCEPTABILITY BY THE LANDSCAPE ARCHITECT OR OWNER.

3. REPLACEMENT: ANY PLANT NOT FOUND IN A HEALTHY GROWING CONDITION AT THE END OF THE GUARANTEE PERIOD SHALL BE REMOVED FROM THE SITE AND REPLACED AS SOON AS WEATHER CONDITIONS PERMIT. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME KIND AND SIZE AS SPECIFIED IN THE PLANT LIST. THEY SHALL BE FURNISHED PLANTED AND MULCHED AS SPECIFIED UNDER "PLANTING", AT NO ADDITIONAL COST TO THE OWNER.

T. FINAL INSPECTION AND ACCEPTANCE OF WORK

FINAL INSPECTION AT THE END OF THE GUARANTEE PERIOD SHALL BE ON PLANTING, CONSTRUCTION AND ALL OTHER INCIDENTAL WORK PERTAINING TO THIS CONTRACT. ANY REPLACEMENT AT THIS TIME SHALL BE SUBJECT TO AN EXTENSION OF WARRANTY PERIOD FOR ONE (1) ADDITIONAL YEAR GUARANTEE BEGINNING WITH THE TIME OF REPLACEMENT AND ENDING WITH A FOLLOW-UP INSPECTION AND ACCEPTANCE ONE YEAR LATER.

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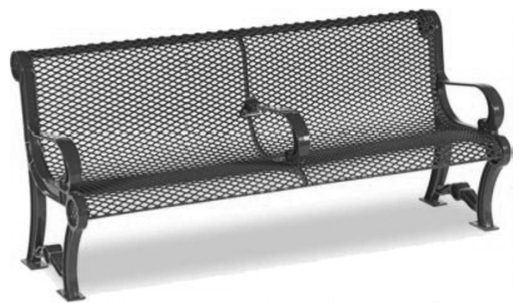
CHECKED: ST
DATE: 08/22/08

NORMA LLOYD PARK
BRADENTON, FLORIDA
PHASE-2
LANDSCAPE SPECIFICATIONS

20245

SHEET
L-13



NOTE:
1. BENCH SHOWN FOR REFERENCE ONLY. WABASH VALLEY, ESTATE SERIES, MODEL #ES-420D, 6' BENCH WITH BACK. DIAMOND PERFORATED WELDED WIRE. BLACK IN COLOR. OR APPROVED EQUAL
2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

WABASH VALLEY
DIAMOND PERFORATED WELDED WIRE BENCH
(STANDARD 6' LENGTH WITH BACK)

1 BENCH
NO SCALE

NOTE:
1. TRASH RECEPTACLE SHOWN FOR REFERENCE ONLY. WABASH VALLEY, MODEL #LR30OD, 32 GALLON RECEPTACLE. DIAMOND PERFORATED WELDED WIRE, BLACK IN COLOR WITH DOME TOP LID MODEL #DT1OON AND 32 GALLON LINER MODEL #LR3ION. SURFACE MOUNT MODEL #LR1O5 OR APPROVED EQUAL.
2. INSTALLATION AND SURFACE MOUNTED TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

WABASH VALLEY
DIAMOND PERFORATED WELDED WIRE
TRASH RECEPTACLE
(32 GALLON SIZE)

2 TRASH RECEPTACLE
NO SCALE

NOTE:
1. TRASH RECEPTACLE SHOWN FOR REFERENCE ONLY. WABASH VALLEY, MODEL #LR30OD, 32 GALLON RECEPTACLE. DIAMOND PERFORATED WELDED WIRE, BLACK IN COLOR WITH RECYCLE FLAT TOP LID, MODEL #DT1OIN, BLUE IN COLOR AND 32 GALLON LINER MODEL #LR3ION. SURFACE MOUNT MODEL #LR1O5 OR APPROVED EQUAL.
2. INSTALLATION AND SURFACE MOUNTED TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

WABASH VALLEY
DIAMOND PERFORATED WELDED WIRE
TRASH RECEPTACLE
(32 GALLON SIZE)

3 RECYCLE TRASH RECEPTACLE
NO SCALE

NOTE:
1. TABLE SHOWN FOR REFERENCE ONLY. WABASH VALLEY, SIGNATURE SERIES, MODEL #SG111D, 8' TABLE WITH 2 3/8" LEGS. DIAMOND PERFORATED WELDED WIRE, BLACK IN COLOR WITH SURFACE MOUNT ADAPTER MODEL #SG135 OR APPROVED EQUAL.
2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

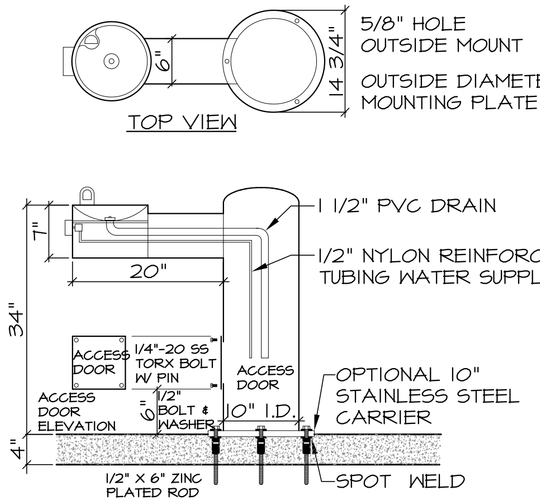
WABASH VALLEY
DIAMOND PERFORATED WELDED WIRE PICNIC TABLE WITH BENCHES
(8' TABLE WITH 2 3/8" LEGS)

4 PICNIC TABLE
NO SCALE

NOTE:
1. PICNIC TABLE WITH BENCHES SHOWN FOR REFERENCE ONLY. WABASH VALLEY, SIGNATURE SERIES, MODEL #SG115D, 8' ADA TABLE WITH 2 3/8" LEGS. DIAMOND PERFORATED WELDED WIRE, BLACK IN COLOR WITH SURFACE MOUNT ADAPTER MODEL #SG135 OR APPROVED EQUAL.
2. MEETS ADA REGULATIONS.
3. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

WABASH VALLEY
DIAMOND PERFORATED WELDED WIRE PICNIC TABLE WITH BENCHES
(8' TABLE WITH 2 3/8" LEGS)

5 PICNIC TABLE-WHEELCHAIR ACCESSIBLE
NO SCALE



NOTE:
1. DRINKING FOUNTAIN SHOWN FOR REFERENCE ONLY. (MOST DEPENDABLE FOUNTAIN, MODEL #41018SM, ADA COMPLIANT).
2. MEETS ADA REGULATIONS.
3. OPTIONAL STAINLESS STEEL SURFACE CARRIER RECOMMENDED.
4. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

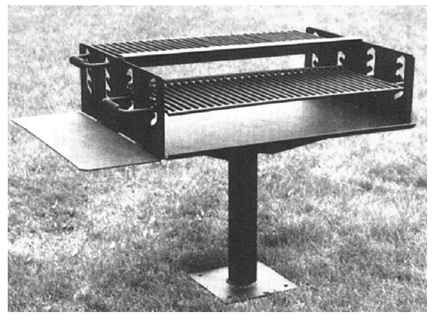
ADA CHILLED DRINKING FOUNTAIN
(SURFACE MOUNTED)

6 DRINKING FOUNTAIN
NO SCALE

NOTE:
1. FAMILY GRILL SHOWN FOR REFERENCE ONLY. KAY PARK GRILLS, MODEL #SB16 OR APPROVED EQUAL.
2. GRILLS TO BE MOUNTED ON CONCRETE SLAB.
3. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

KAY PARK GRILLS
VANDAL RESISTANT PEDESTRIAN GRILL

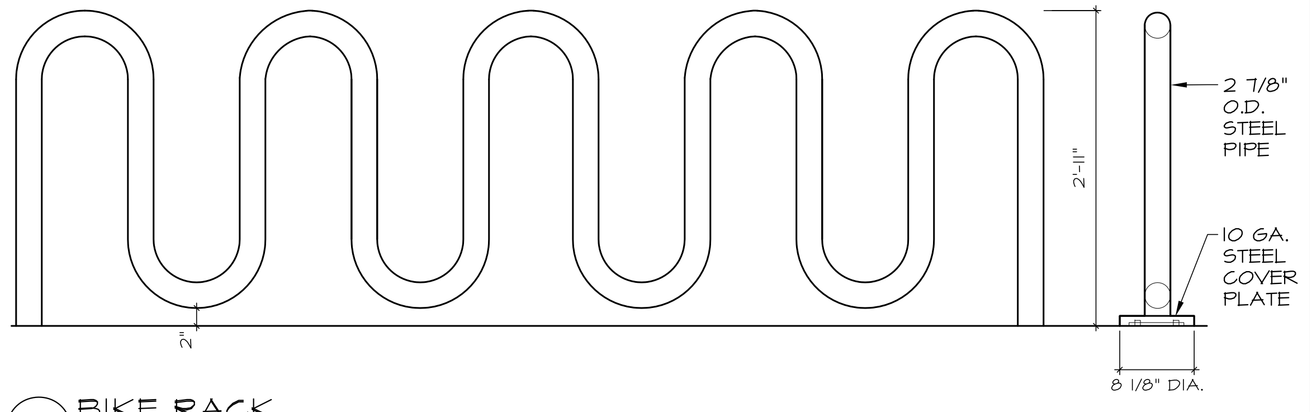
7 FAMILY GRILL
NO SCALE



NOTE:
1. GROUP GRILL SHOWN FOR REFERENCE ONLY. KAY PARK GRILLS, MODEL# SB3628U OR APPROVED EQUAL.
2. GRILLS TO BE MOUNTED ON CONCRETE SLAB.
3. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

KAY PARK GRILLS
VANDAL RESISTANT PEDESTRIAN GRILL

8 GROUP GRILL
NO SCALE



BIKE RACK BY DuMOR, INC.
LOOP BIKE RACK MODEL #125-40 (125 SERIES), SURFACE MOUNT, DOUBLE POWDER-COATED BLACK COLOR OR APPROVED EQUAL

NOTE:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. BIKE RACK TO BE INSTALLED ON CONCRETE PAD.

9 BIKE RACK
ELEVATION

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REV.	DATE	DESCRIPTION	BY

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DESIGNED: ST, FW
CHECKED: ST
DATE: 08/22/08

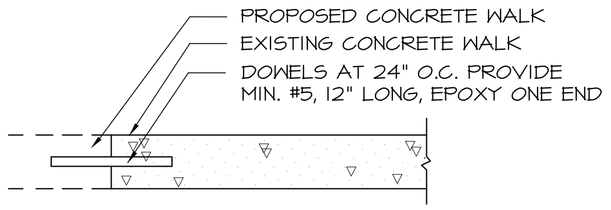
NORMA LLOYD PARK
BRADENTON, FLORIDA

PHASE-2 SITE DETAILS

AS SHOWN

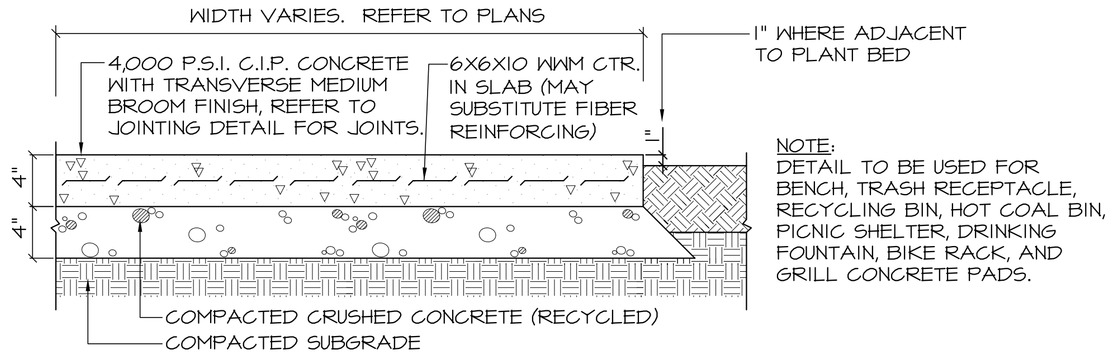
20245

SHEET
L-14



1 DOWEL BETWEEN EXISTING AND PROPOSED CONCRETE

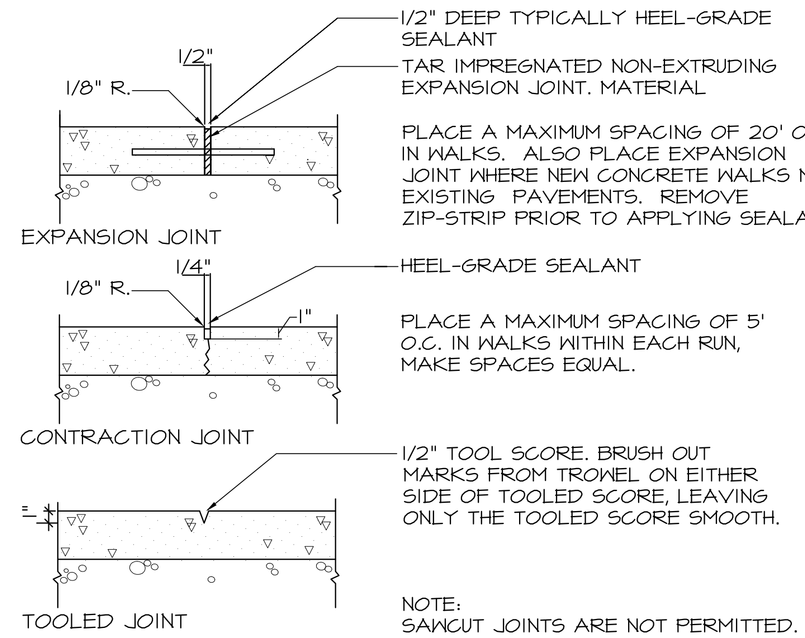
NO SCALE (TYPICAL)



2 CONCRETE WALK AND PADS

NO SCALE (TYPICAL)

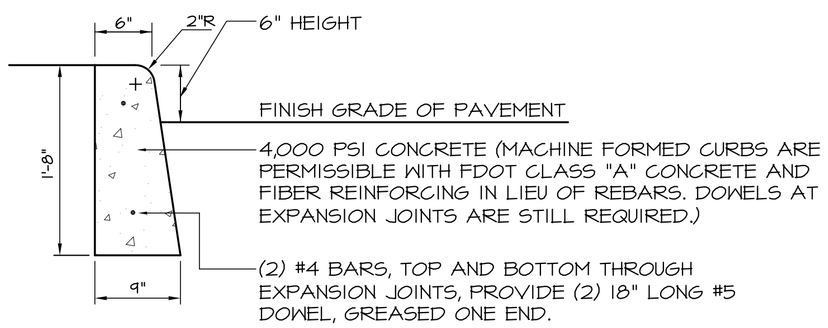
NOTE: EXPANSION JOINT MATERIAL SHALL BE "ZIP-STRIP" EXPANSION MATERIAL WITH REMOVEABLE CAP BY GREENSTREAK OR APPROVED EQUAL.



NOTE:
SAWCUT JOINTS ARE NOT PERMITTED.

3 JOINTING IN CONCRETE

NO SCALE (TYPICAL)



NOTE: ALL STEEL REINFORCING 2" CLEAR.

(REFER TO "JOINTING IN CONCRETE" DETAIL #3, SHEET L-16 FOR JOINTING REQUIREMENTS)

4 BARRIER CURB (PLAYGROUND AREA)

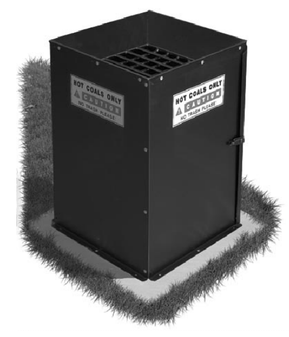
NO SCALE (TYPICAL)

POLIGON SHELTER ON CONCRETE PAD

NOTE:
1. PICNIC SHELTER SHOWN FOR REFERENCE ONLY. POLIGON SHELTER, MODEL 20' X 24' ON CONCRETE PAD OR APPROVED EQUAL.
2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

5 PICNIC SHELTER

NO SCALE (TYPICAL)



NOTE:
1. HOT COAL BIN SHOWN FOR REFERENCE ONLY. PILOT ROCK, MODEL# HCB/B-1 HOT COAL BIN WITH 32-GALLON GALVANIZED STEEL CAN MODEL # CNG-2310C WITH BRASS PADLOCK MODEL # PL-1 OR APPROVED EQUAL.
2. HOT COAL BIN TO BE MOUNTED ON CONCRETE SLAB WITH CONCRETE ANCHORS MODEL # BR-4HSA.
3. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

PILOT ROCK
GALVANIZED STEEL HOT COAL BIN
(23" X 23" X 32½")

6 HOT COAL BIN

NO SCALE

IBI GROUP, INC.
HTTP://WWW.IBIGROUP.COM
ENGINEERS CERT OF AUTH #2366 SURVEYORS AC#LB5610
PLANNERS LANDSCAPE ARCHITECTS ENVIRONMENTAL CONSULTANTS
1519 MAIN STREET
SARASOTA, FL 34236
PHONE: (941) 954-1718
FAX: (941) 954-0231

IBI GROUP

REV.	DATE	DESCRIPTION	BY

DRAWN: ST
DESIGNED: ST
CHECKED: ST
DATE: 08/22/08

NORMA LLOYD PARK
BRADENTON, FLORIDA

PHASE-2 SITE DETAILS

AS SHOWN

20245

SHEET
L-15

DEMOLITION GENERAL NOTES:

A) THE BOUNDARY SURVEY WAS PREPARED BY IBI GROUP, INC.

B) ALL WORK SHALL BE CONFINED TO LIMITS OF CONSTRUCTION SHOWN ON PLANS.

C) CONTRACTOR SHALL COORDINATE AND BE IN COMPLIANCE WITH ALL STATE AND LOCAL MUNICIPALITIES AS WARRANTED. CONTRACTOR SHALL NOTIFY MANATEE COUNTY AND CITY OF BRADENTON WHEN CONSTRUCTION BEGINS.

D) ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SPECIFICATIONS AND EXISTING SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN DRAWINGS OR SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE OWNER AND DESIGNER, IN WRITING, WHO SHALL PROMPTLY ADDRESS SUCH INCONSISTENCIES OR AMBIGUITIES. WORK DONE BY THE CONTRACTOR AFTER HIS DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S RISK.

E) DEVIATION FROM THESE PLANS AND NOTES WITHOUT THE PRIOR CONSENT OF THE OWNER, HIS/ HER REPRESENTATIVE, OR THE LANDSCAPE ARCHITECT MAY BE CAUSE FOR THE WORK TO BE DESIGNATED UNACCEPTABLE.

F) THE CONTRACTOR SHALL IMMEDIATELY REPORT TO THE OWNER AND LANDSCAPE ARCHITECT ANY UNFORESEEN OR ADVERSE CONDITIONS DISCOVERED DURING DEMOLITION OPERATIONS.

G) ALL TRENCHES AND/OR VOIDS CREATED BY THE REMOVAL OF EXISTING STRUCTURES SHALL BE BACKFILLED PER LOCAL AND STATE REGULATIONS.

H) THE LOCATION AND SIZE OF EXISTING ABOVE GROUND UTILITIES ARE SHOWN ON THE SURVEY. THE CONTRACTOR IS RESPONSIBLE FOR HORIZONTALLY AND VERTICALLY LOCATING AND PROTECTING ALL PUBLIC AND PRIVATE UTILITIES WHICH LIE IN OR ADJACENT TO THE CONSTRUCTION SITE. AT LEAST 48 HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY CALL SUNSHINE 1-800-432-4770 COORDINATE UTILITY WORK WITH MANATEE COUNTY AND CITY OF BRADENTON FOR COMPLIANCE WITH LOCAL CODES AND ORDINANCES.

I) THE CONTRACTOR SHALL PROTECT ALL EXISTING POWER POLES, MANHOLES, TELEPHONE RISERS, WATER VALVES, ETC., DURING ALL CONSTRUCTION PHASES, UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.

J) CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND/OR OBTAINING ALL REQUIRED PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION.

K) ALL DEMOLITION DEBRIS AND OTHER EXCESS MATERIAL SHALL BE HAULED OFF-SITE AS DIRECTED BY THE OWNER AND PROPERLY DISPOSED OF IN A LEGAL MATTER, UNLESS OTHERWISE NOTED.

L) ALL GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS AND TECHNICAL SPECIFICATIONS OF THE CONTRACT SHALL APPLY.

M) CONTRACTOR IS TO MAINTAIN CONTROLLED PEDESTRIAN AND ADA ACCESS THROUGH ALL AREAS OF THE SITE THROUGHOUT CONSTRUCTION PERIOD.

N) CONTRACTOR IS TO PROVIDE THE EXACT LOCATION OF THE CONSTRUCTION FENCE WITH THE APPROPRIATE OPENINGS PER DRAWINGS AND SUBMIT FOR WRITTEN APPROVAL OF OWNER PRIOR TO COMMENCEMENT OF WORK.

O) THE CONTRACTOR SHALL COORDINATE AND BE RESPONSIBLE FOR THE STAGING AND REMOVAL OF ALL DEMOLITION ITEMS.

P) THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE RESULTING FROM CONSTRUCTION ACTIVITY TO EXISTING ELEMENTS THAT ARE TO REMAIN.

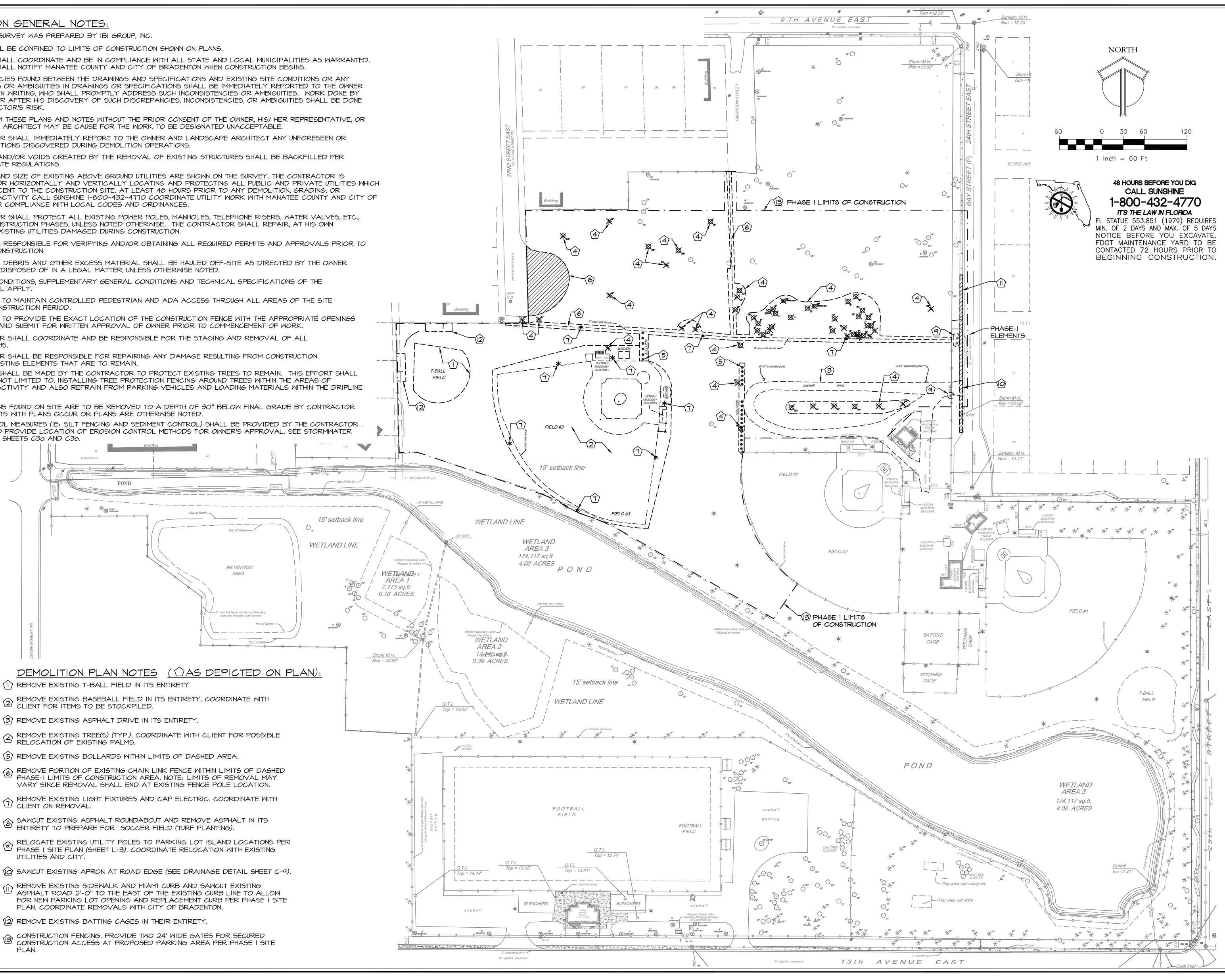
Q) EVERY EFFORT SHALL BE MADE BY THE CONTRACTOR TO PROTECT EXISTING TREES TO REMAIN. THIS EFFORT SHALL INCLUDE, BUT IS NOT LIMITED TO, INSTALLING TREE PROTECTION FENCING AROUND TREES WITHIN THE AREAS OF CONSTRUCTION ACTIVITY AND ALSO REFRAIN FROM PARKING VEHICLES AND LOADING MATERIALS WITHIN THE DRIPLINE OF TREES.

R) ANY FOUNDATIONS FOUND ON SITE ARE TO BE REMOVED TO A DEPTH OF 30" BELOW FINAL GRADE BY CONTRACTOR UNLESS CONFLICTS WITH PLANS OCCUR OR PLANS ARE OTHERWISE NOTED.

S) EROSION CONTROL MEASURES (IE: SILT FENCING AND SEDIMENT CONTROL) SHALL BE PROVIDED BY THE CONTRACTOR . CONTRACTOR TO PROVIDE LOCATION OF EROSION CONTROL METHODS FOR OWNER'S APPROVAL. SEE STORMWATER POLLUTION PLAN SHEETS C3a AND C3b.

DEMOLITION PLAN NOTES (⬠AS DEPICTED ON PLAN):

1. REMOVE EXISTING T-BALL FIELD IN ITS ENTIRETY
2. REMOVE EXISTING BASEBALL FIELD IN ITS ENTIRETY. COORDINATE WITH CLIENT FOR ITEMS TO BE STOCKPILED.
3. REMOVE EXISTING ASPHALT DRIVE IN ITS ENTIRETY.
4. REMOVE EXISTING TREE(S) (TYP.). COORDINATE WITH CLIENT FOR POSSIBLE RELOCATION OF EXISTING PALMS.
5. REMOVE EXISTING BOLLARDS WITHIN LIMITS OF DASHED AREA.
6. REMOVE PORTION OF EXISTING CHAIN LINK FENCE WITHIN LIMITS OF DASHED PHASE-I LIMITS OF CONSTRUCTION AREA. NOTE: LIMITS OF REMOVAL MAY VARY SINCE REMOVAL SHALL END AT EXISTING FENCE POLE LOCATION.
7. REMOVE EXISTING LIGHT FIXTURES AND CAP ELECTRIC. COORDINATE WITH CLIENT ON REMOVAL.
8. SAWCUT EXISTING ASPHALT ROUNDABOUT AND REMOVE ASPHALT IN ITS ENTIRETY TO PREPARE FOR SOCCER FIELD (TURF PLANTING).
9. RELOCATE EXISTING UTILITY POLES TO PARKING LOT ISLAND LOCATIONS PER PHASE I SITE PLAN (SHEET L-3). COORDINATE RELOCATION WITH EXISTING UTILITIES AND CITY.
10. SAWCUT EXISTING APRON AT ROAD EDGE (SEE DRAINAGE DETAIL SHEET C-9).
11. REMOVE EXISTING SIDEWALK AND MIAMI CURB AND SAWCUT EXISTING ASPHALT ROAD 2'-0" TO THE EAST OF THE EXISTING CURB LINE TO ALLOW FOR NEW PARKING LOT OPENING AND REPLACEMENT CURB PER PHASE I SITE PLAN. COORDINATE REMOVALS WITH CITY OF BRADENTON.
12. REMOVE EXISTING BATTING CAGES IN THEIR ENTIRETY.
13. CONSTRUCTION FENCING. PROVIDE TWO 24' WIDE GATES FOR SECURED CONSTRUCTION ACCESS AT PROPOSED PARKING AREA PER PHASE I SITE PLAN.



48 HOURS BEFORE YOU DIG
CALL SUNSHINE
1-800-432-4770
IT'S THE LAW IN FLORIDA

FL STATUE 553.851 (1979) REQUIRES MIN. OF 2 DAYS AND MAX. OF 5 DAYS NOTICE BEFORE YOU EXCAVATE. FDOT MAINTENANCE YARD TO BE CONTACTED 72 HOURS PRIOR TO BEGINNING CONSTRUCTION.

REV.	DATE	DESCRIPTION	BY
	08/22/08	REVISE PER CITY COMMENTS	

IBI GROUP, INC.
HTTP://WWW.IBIGROUP.COM
ENGINEERS CERT OF AUTH #2966 SURVEYORS AC#LB5610
PLANNERS LANDSCAPE ARCHITECTS ENVIRONMENTAL CONSULTANTS
1519 MAIN STREET
SARASOTA, FL 34236
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FAX: (941) 954-0233

IBI GROUP

DRAWN: FW
DESIGNED: ST
CHECKED: ST
DATE: 05/27/08

NORMA LLOYD PARK
BRADENTON, FLORIDA

PHASE I – DEMOLITION PLAN

20245

SHEET
L-2

SITE GENERAL NOTES:

A) CONTRACTOR TO COORDINATE WITH ADJACENT WORK BY OTHERS.

B) SEE PHASE-1 DEMOLITION PLAN FOR ALL REMOVALS AND PROTECTION OF EXISTING FEATURES.

C) CONTRACTOR SHALL VERIFY LOCATION, SIZE AND ELEVATION OF EXISTING UTILITIES, STRUCTURES, PIPES, PAVEMENTS, ETC. AS RELATED TO HIS WORK. NOTIFY LANDSCAPE ARCHITECT AND ENGINEER OF ANY CONFLICT AND/OR DISCREPANCIES IN THE CONSTRUCTION DOCUMENTS PRIOR TO THE START OF CONSTRUCTION.

D) IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACQUAINT HIMSELF/HERSELF WITH SUBSOIL CONDITIONS.

E) THE PLANS SHOW THE LOCATION OF SOME OF THE UTILITIES LOCATED WITHIN THE LIMITS OF THE CONTRACT ACCORDING TO INFORMATION PROVIDED BY THE SURVEY. NOTE THAT THE LANDSCAPE ARCHITECT SHALL NOT BE LIABLE FOR ITS RELIABILITY AND ACCURACY. THIS SURVEY INFORMATION IS NOT GUARANTEED.

F) ALL PAVEMENT PATCHING DUE TO UTILITIES INSTALLATION, CONSTRUCTION OF CURBS, ETC., OR DAMAGE TO EXISTING PAVEMENT TO REMAIN DURING CONSTRUCTION, SHALL BE PATCHED WITH A PAVEMENT SECTION WHICH MEETS OR EXCEEDS THE EXISTING SECTION. THIS WORK SHALL BE PERFORMED BY THE CONTRACTOR PERFORMING THE WORK.

G) LANDSCAPE ARCHITECT TO PROVIDE CAD DRAWINGS FOR CONTRACTOR'S USE IN LAYOUT OF THE PROJECT.

H) ALL RADII SHALL BE FORMED AS SMOOTH CIRCULAR ARCS WITH NO KINKS, FACETS OR TANGENTS.

I) SEE PHASE-1 GRADING PLAN FOR ALL GRADING INFORMATION. (SEE SHEET C-4)

J) SEE PHASE-1 ENGINEERING PLAN AND DETAILS FOR ALL DRAINAGE INFORMATION. (SEE C SERIES SHEETS)

K) THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL TRAFFIC CONTROL DEVICES REQUIRED BY FEDERAL, STATE, CITY, OR LOCAL AGENCIES. THE AMOUNT, LOCATION AND SIZE SHALL BE PER THE DIRECTION OF THE GOVERNING AGENCY.

L) IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE ALL MUD, DIRT, GRAVEL AND OTHER MATERIALS TRACKED ONTO ANY PRIVATE OR PUBLIC STREETS OR SIDEWALKS. THE CONTRACTOR MUST CLEAN THESE DAILY, IF NECESSARY. THE CONTRACTOR MUST USE WATER OR OTHER EXCEPTABLE METHODS TO KEEP AIRBORNE DUST TO A REQUIRED MINIMUM.

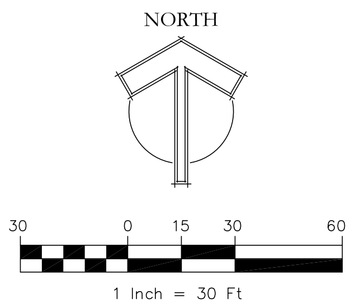
M) CONTRACTOR TO FIELD STAKE LOCATIONS OF WALKS, CURBLINE, PARKING LOT, SOCCER FIELD AND DRAINAGE POND FOR APPROVAL BY OWNER PRIOR TO START OF CONSTRUCTION.

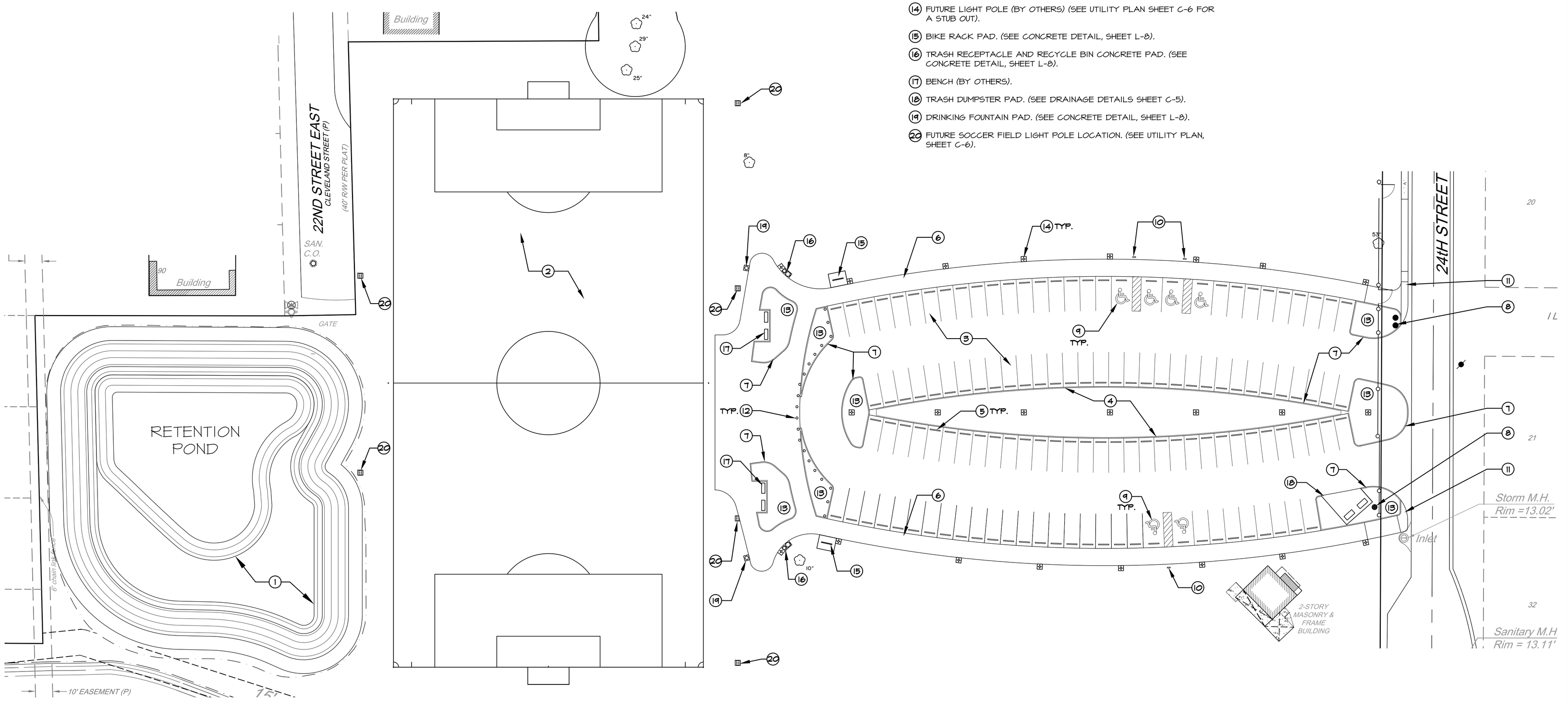
N) CONTRACTOR TO SUBMIT WALK LAYOUT AND JOINTING PLAN FOR APPROVAL TO OWNER PRIOR TO FORMING CONCRETE WALKS.

O) THE CONTRACTOR SHALL IMMEDIATELY REPORT TO THE OWNER ANY UNFORESEEN OR ADVERSE CONDITIONS DISCOVERED DURING DEMOLITION OR CONSTRUCTION OPERATIONS.

PHASE-1 SITE LAYOUT PLAN NOTES (AS DEPICTED ON PLAN):

1. SITE DRAINAGE AREA (SEE GRADING PLAN). DRAINAGE HAS BEEN SIZED TO ACCOMMODATE ALL FUTURE SITE ELEMENTS PROPOSED ON OVERALL SITE LAYOUT PLAN (SHEET L-1). DRAINAGE AREA TO BE SODDED USING BAHIA GRASS. (SEE PHASE-1 LANDSCAPE PLANS)
2. SOCCER FIELD. FIELD TO BE IRRIGATED (METERED USE) AND WILL BE PLUGGED WITH TIFWAY 419 GRASS. (SEE PHASE-1 LANDSCAPE AND IRRIGATION PLANS).
3. ASPHALT PARKING LOT (SEE DETAIL SHEET L-8).
4. PLANTING AREA TO COMPENSATE FOR NO TREE ISLANDS IN THE PARKING LOT. (SEE PHASE-1 LANDSCAPE PLAN)
5. PARKING BUMPER (SEE PHASE-1 SITE DETAILS, SHEET L-8).
6. CONCRETE SIDEWALK (SEE ENGINEER'S DETAIL SHEETS C-5, 6, 7 AND 8 AND PHASE-1 DETAILS SHEET, L-8).
7. CONCRETE CURB (SEE PHASE-1 SITE DETAILS, SHEET L-8).
8. RELOCATED UTILITY POLE. COORDINATE WITH UTILITY COMPANY AND OWNER REGARDING THE RELOCATION.
9. HANDICAPPED ACCESSIBLE PARKING SPACE. (SEE PHASE-1 SITE DETAILS, SHEET L-8).
10. HANDICAPPED PARKING SIGNAGE (SEE PHASE-1 DETAILS, SHEET L-8).
11. HANDICAPPED RAMP. (SEE ENGINEER'S DETAIL SHEET C-5).
12. BOLLARD (TO BE PROVIDED BY COUNTY AND INSTALLED BY CONTRACTOR).
13. PLANTING AREA (SEE PHASE-1 LANDSCAPE PLANS).
14. FUTURE LIGHT POLE (BY OTHERS) (SEE UTILITY PLAN SHEET C-6 FOR A STUB OUT).
15. BIKE RACK PAD. (SEE CONCRETE DETAIL, SHEET L-8).
16. TRASH RECEPTACLE AND RECYCLE BIN CONCRETE PAD. (SEE CONCRETE DETAIL, SHEET L-8).
17. BENCH (BY OTHERS).
18. TRASH DUMPSTER PAD. (SEE DRAINAGE DETAILS SHEET C-5).
19. DRINKING FOUNTAIN PAD. (SEE CONCRETE DETAIL, SHEET L-8).
20. FUTURE SOCCER FIELD LIGHT POLE LOCATION. (SEE UTILITY PLAN, SHEET C-6).





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REV.	DATE	DESCRIPTION	BY
A	08/22/08	REVISE PER CITY COMMENTS	FW

DRAWN: FW
DESIGNED: ST
CHECKED: ST
DATE: 06/27/08

NORMA LLOYD PARK
BRADENTON, FLORIDA

PHASE-1 SITE LAYOUT PLAN

20245

SHEET
L-3a

NORMA LLOYD PARK
BRADENTON, FLORIDA
PHASE-1 PARKING-LOT LAYOUT PLAN

DRAWN: FW
DESIGNED: ST
CHECKED: ST
DATE: 08/22/08

SHEET L-3b
20245

IBI GROUP

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PHONE: (941) 954-1718
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REV.	DATE	DESCRIPTION	BY

1 Inch = 20 Ft

NORTH

TREE LEGEND

- LIVE OAK
- LITTLE GEM MAGNOLIA
- BALD CYPRESS
- CRAPE MYRTLE
- WINGED ELM
- FRINGE TREE
- SABAL PALM

RETENTION POND

PHASE-I WEST SITE
SEE SHEET L-5b

PHASE-I EAST SITE
SEE SHEET L-5a

PHASE-2
SEE SHEET L-II

22ND STREET EAST
CLEVELAND STREET (P)
(40' R/W PER PLAT)

24th STREET EAST

18" METAL PIPE

10' EASEMENT (P)

15' setback line

6' chain link fence

Building

GATE

SAN. C.O.

Inlet

Storm M.
Rim =13.

2.5 STORY MASONRY FRAME BUILDING

BAHIA SOD

TIFWAY 419

PLAYGROUND SAFETY SURFACE

MULCH

1 Inch = 30 Ft

NORTH

NORMA LLOYD PARK
BRADENTON, FLORIDA
PHASE-1 PLANTING PLAN
(OVERALL)

DRAWN: FW
DESIGNED: FW
CHECKED: ST
DATE: 08/22/08

20245

SHEET L-4

IBI GROUP

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1519 MAIN STREET
SARASOTA, FL 34236
PHONE: (941) 954-1718
FAX: (941) 954-0231

REV.	DATE	DESCRIPTION	BY

TREE LEGEND

- LIVE OAK
- WINGED ELM
- LITTLE GEM MAGNOLIA

PLANT LEGEND

- SAW PALMETTO - SR
- DWARF PALMETTO - SM
- FIREBUSH - HP
- COCOPLUM - CI
- THRYALLIS - GG
- VIBURNUM DENSA - VO
- SANDCORD GRASS - SB
- MUHLY GRASS - MC
- DWARF FAKAHATCHEE GRASS - TR
- LIRIOPE - LM
- DWARF INDIAN HAWTHORN - RD
- OYSTER PLANT - RN
- SUNSHINE MIMOSA - MS

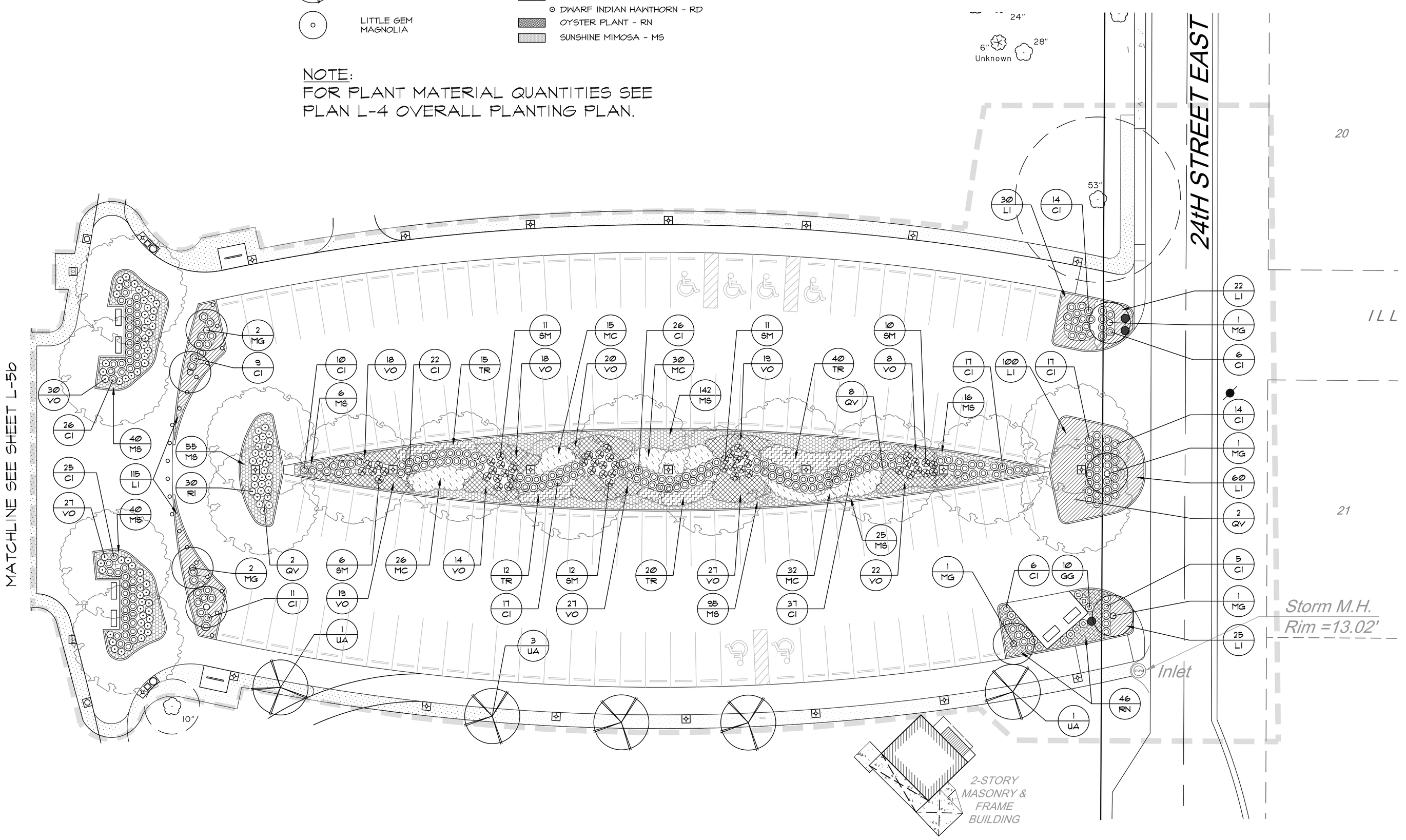
BAHIA SOD

NOTE:
FOR PLANT MATERIAL QUANTITIES SEE PLAN L-4 OVERALL PLANTING PLAN.

NORTH

20 0 10 20 40

1 Inch = 20 Ft



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IBI GROUP

REV.	DATE	DESCRIPTION	BY

DRAWN: FW
DESIGNED: FW
CHECKED: ST
DATE: 08/22/08

NORMA LLOYD PARK
BRADENTON, FLORIDA
PHASE-1 PLANTING PLAN
EAST SITE

20245

SHEET
L-5a

NOTE:
FOR PLANT MATERIAL QUANTITIES SEE PLAN L-4 OVERALL PLANTING PLAN.

SHEET L-5b

20245

NORMA LLOYD PARK
BRADENTON, FLORIDA

PHASE-1 PLANTING PLAN
WEST SITE

DRAWN: FW
DESIGNED: FW
CHECKED: ST
DATE: 08/22/08

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1519 MAIN STREET
SARASOTA, FL 34236
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REV.	DATE	DESCRIPTION	BY
10			
9			
8			
7			
6			
5			
4			
3			
2			
1			

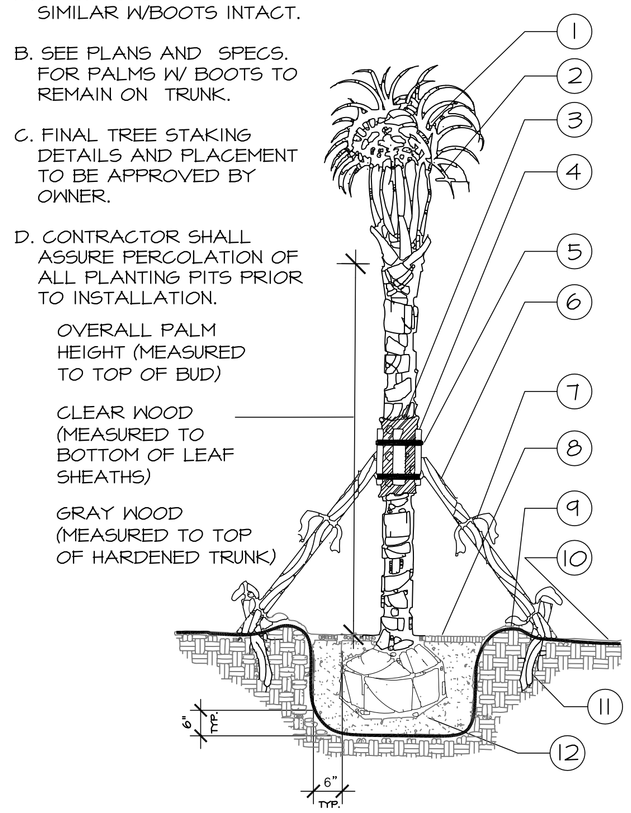
NOTES:

A. WASHINGTONIA PALMS SIMILAR W/BOOTS INTACT.

B. SEE PLANS AND SPECS. FOR PALMS W/ BOOTS TO REMAIN ON TRUNK.

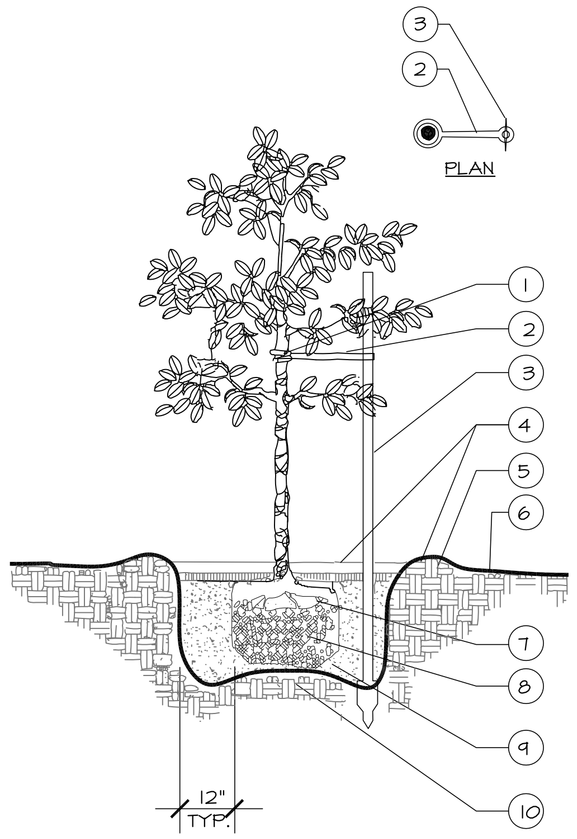
C. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

D. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.



1. MINIMUM OF NINE (9) GOOD PALM FRONDS
2. PRUNE AND TIE FRONDS WITH HEMP TWINE. CABBAGE PALMS TO BE "HURRICANE CUT"
3. 5 LAYERS OF BURLAP TO PROTECT TRUNK.
4. FIVE 2" X 4" X 18" WOOD BATTENS.
5. SECURE BATTENS WITH 2- 3/4" CARBON STEEL BANDS TO HOLD BATTENS IN PLACE. NO NAILS SHALL BE DRIVEN INTO PALM. HEIGHT OF BATTENS SHALL BE LOCATED IN RELATION TO THE HEIGHT OF THE PALM FOR ADEQUATE BRACING.
6. 3-2" X 4" x 8' NAIL (DRILL AND NAIL IF NECESSARY) TO BATTENS AND 2" X 4" STAKES. FLAG AT MIDPOINT AND AT BASE.
7. PROVIDE FLAGGING
8. 3" SPECIFIED MULCH
9. BERM SOIL TO HOLD WATER
10. FINISH GRADE
11. 2" X 4" X 24" (MIN.) P.T. WOOD STAKES (TYP.) NAIL TO SUPPORT POLES
12. PREPARED PLANTING SOIL AS SPECIFIED

1 PALM PLANTING DETAIL
NO SCALE



1. PROTECT TREE TRUNK WITH BLACK RUBBER HOSE.
2. "TREE MATE" TREE SUPPORT (S.C.S. NURSERY, NASHVILLE, GA.)-INSTALL PER MFG. SPECS TO T-POST
3. STEEL STAKE
4. 3" LAYER OF SPECIFIED MULCH.
5. SOIL BERM TO HOLD WATER.
6. FINISHED GRADE
7. TOP OF ROOTBALL MIN. 1" ABOVE FINISHED GRADE
8. B & B OR CONTAINERIZED (SEE SPECIFICATIONS FOR ROOT BALL REQUIREMENTS).
9. PREPARED PLANTING SOIL AS SPECIFIED.
10. ROOTBALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING ROOTBALLS SMALLER THAN 24" IN DIAMETER MAY SIT ON COMPACTED EARTH.

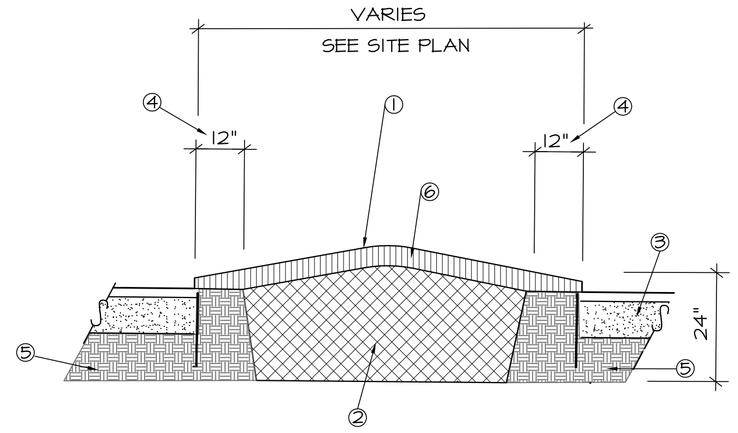
NOTES:

A. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

B. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

C. 'TREE-MATE-O' TO BE USED FOR ALL TREES UP TO 2-½" CAL.

2 SMALL TREE PLANTING DETAIL (LESS THAN 14')
NO SCALE NTS



1. CROWNED PARKING MEDIAN
2. BACKFILL WITH PREPARED PLANTING SOIL MIX AS SPECIFIED.
3. PROTECT AND RETAIN PAVEMENT BASE.
4. PROVIDE MINIMUM CLEAR ZONE AT CURB EDGES.
5. EXISTING SUBGRADE TO REMAIN
6. 3" LAYER OF SPECIFIED MULCH.

NOTES

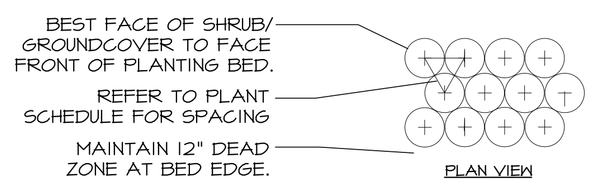
A. VERIFY LOCATION OF ALL UTILITIES PRIOR TO ANY EXCAVATION ACTIVITY.

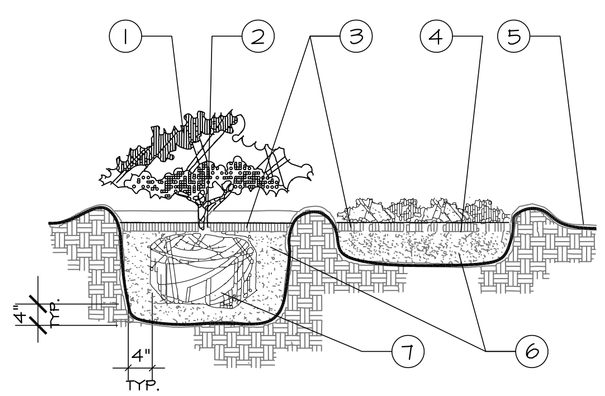
B. PROPOSED MEDIAN PLANTINGS SHALL BE PER PHASE-1 LANDSCAPE PLANS.

3 PROPOSED PARKING LOT MEDIAN
NO SCALE

NOTES:

1. TOP OF SHRUB ROOTBALLS TO BE PLANTED 1" - 2" HIGH WITH SOIL MOUNDING UP TO THE TOP OF ROOTBALL.
2. PRUNE ALL SHRUBS TO ACHIEVE A UNIFORM MASS/HEIGHT.
3. 3" MINIMUM OF SPECIFIED MULCH.
4. EXCAVATE ENTIRE BED SPECIFIED FOR GROUDCOVER BED.
5. FINISHED GRADE.
6. PREPARED PLANTING SOIL AS SPECIFIED. NOTE: WHEN GROUND- COVERS AND SHRUBS USED IN MASSES ENTIRE BED TO BE AMENDED WITH PLANTING SOIL MIX AS SPECIFIED.
7. SCARIFY ROOTBALL SIDES AND BOTTOM.



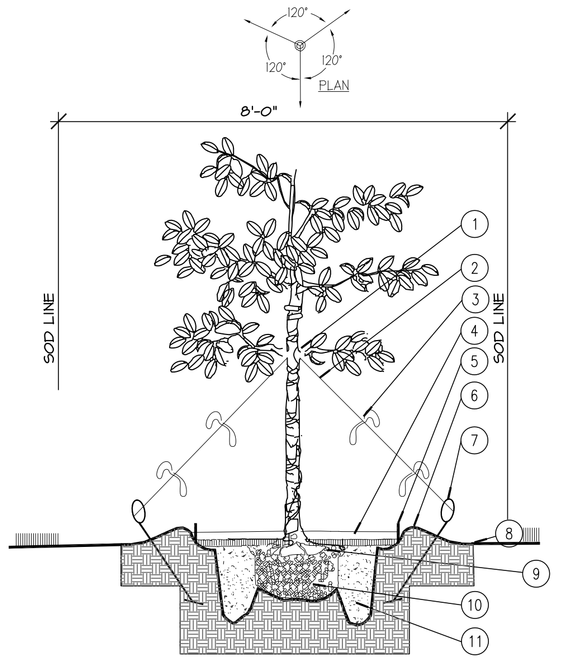


4 SHRUB/GROUNDCOVER PLANTING DETAIL
NO SCALE

NOTES:

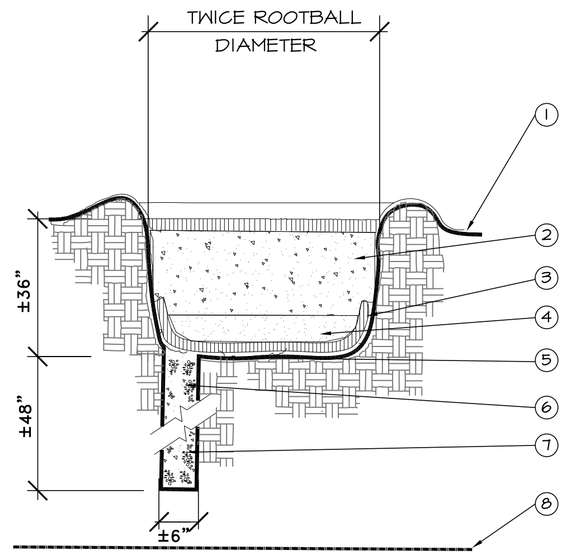
A. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

B. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.



1. PROTECTED TREE TRUNK BLACK RUBBER HOSING
2. 12" GA. WIRE GUY, EACH WITH A 6-1/2" STEEL TURNBUCKLE. ALL WIRE GALVANIZED STEEL.
3. 8" LONG WHITE SURVEYOR'S FLAGGING TAPE 2 PER GUY WIRE
4. 3" LAYER OF SPECIFIED MULCH
5. BLACK PLASTIC EDGING
6. 8" DEEP X 6' DIA. SAUCER. SOIL BERM TO HOLD WATER.
7. DUCKBILL ANCHOR PER MANUFACTURER'S SPECIFICATIONS
8. FINISHED GRADE - TOP OF ROOTBALL TO BE 1" MIN. ABOVE FINISHED GRADE
9. B&B OR CONTAINERIZED (SEE SPECIFICATIONS FOR ROOT BALL REQUIREMENTS).
10. ROOTBALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING.
11. PREPARED PLANTING SOIL AS SPECIFIED.

5 LARGE TREE PLANTING DETAIL
NO SCALE



1. FINISH GRADE
2. BACKFILL WITH PREPARED PLANTING SOIL MIX AS SPECIFIED.
3. FILTER CLOTH
4. 12"± CLEAN SAND, COMPACTED. ADJUST LAYER THICKNESS SO TOP OF ROOTBALL IS AT LEAST 1" ABOVE FINISHED GRADE.
5. SLOPE BOTTOM TO DRAIN
6. 18"± DEPTH AUGERED HOLE PENETRATE THROUGH OCCLUDING LAYER TO WATER TABLE OR TO A DEPTH OF 7' TO ASSURE PROPER PERCOLATION.
7. BACKFILL WITH 1/2" - 3/4" GRAVEL.
8. WATER TABLE. (DEPTH VARIES)

NOTE:
FOR A ROADSIDE PLANTING SITUATION, CONTRACTOR TO BACKFILL ENTIRE LENGTH OF PLANTING AREA TO WITHIN 12" OF BACK OF CURB OR EDGE OF PAVEMENT.

REFER TO WRITTEN SPECIFICATIONS FOR ADDITIONAL INFORMATION.

6 POOR DRAINAGE CONDITION DETAIL
NO SCALE

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IBI GROUP

REV.	DATE	DESCRIPTION	BY

DRAWN: ST
DESIGNED: ST
CHECKED: ST
DATE: 08/22/08

NORMA LLOYD PARK
BRADENTON, FLORIDA

PHASE-1 LANDSCAPE DETAILS

AS SHOWN

20245

SHEET
L-6

GENERAL LANDSCAPE SPECIFICATIONS AND NOTES

A. SCOPE OF WORK

1. THE WORK CONSISTS OF FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, AND ANY OTHER APPURTENANCES NECESSARY FOR THE COMPLETION OF THIS PROJECT AS SHOWN ON THE DRAWINGS, AS INCLUDED IN THE PLANT LIST, AND AS HEREIN SPECIFIED.

2. WORK SHALL INCLUDE MAINTENANCE AND WATERING OF ALL PLANTING AREAS OF THIS CONTRACT (INCLUDING SOD) UNTIL CERTIFICATION OF ACCEPTABILITY BY THE OWNER.

B. PROTECTION OF EXISTING STRUCTURES

ALL EXISTING BUILDINGS, WALKS, WALLS, PAVING, PIPING, AND OTHER ITEMS OF CONSTRUCTION AND PLANTING ALREADY COMPLETED OR ESTABLISHED SHALL BE PROTECTED FROM DAMAGE BY THIS CONTRACTOR UNLESS OTHERWISE SPECIFIED. ALL DAMAGE RESULTING FROM NEGLIGENCE SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER.

C. PROTECTION OF EXISTING PLANT

MATERIALS OUTSIDE LIMIT OF WORK: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UNAUTHORIZED CUTTING OR DAMAGE TO TREES AND SHRUBS EXISTING OR OTHERWISE, CAUSED BY CARELESS OPERATION OF EQUIPMENT, STOCKPILING OF MATERIALS, ETC. THIS SHALL INCLUDE COMPACTION BY DRIVING OR PARKING INSIDE THE DRIP-LINE OR THE SPILLING OF OIL, GASOLINE, OR OTHER DELETERIOUS MATERIALS WITHIN THE DRIP-LINE. NO MATERIALS SHALL BE BURNED ON SITE. TREES KILLED OR DAMAGED SO THAT THEY ARE MISSHAPEN AND/OR UNSIGHTLY SHALL BE REPLACED AT THE COST TO THE CONTRACTOR OF ONE HUNDRED DOLLARS ($100) PER CALIPER INCH ON AN ESCALATING SCALE WHICH ADDS AN ADDITIONAL TWENTY (20) PER CENT PER INCH OVER FOUR (4) INCHES CALIPER AS FIXED AND AGREED LIQUIDATED DAMAGES. CALIPER SHALL BE MEASURED SIX (6) INCHES ABOVE GROUND LEVEL FOR TREES UP TO AND INCLUDING FOUR (4) INCHES IN CALIPER AND TWELVE (12) INCHES ABOVE GROUND LEVEL FOR TREES OVER FOUR (4) INCHES IN CALIPER.

D. MATERIALS

1. GENERAL SAMPLES OF MATERIALS AS LISTED BELOW SHALL BE SUBMITTED FOR APPROVAL, ON THE SITE OR AS OTHERWISE DETERMINED BY THE OWNER. UPON APPROVAL OF SAMPLES, DELIVERY OF MATERIALS MAY BEGIN.

MATERIALS	SAMPLES
MULCH	ONE (1) CUBIC FOOT
TOPSOIL	ONE (1) CUBIC YARD
PLANTS	ONE (1) OF EACH VARIETY

2. PLANT MATERIALS: PLANT SPECIES AND SIZE SHALL CONFORM TO THOSE INDICATED ON THE DRAWINGS. NOMENCLATURE SHALL CONFORM TO STANDARDIZED PLANT NAMES, CURRENT EDITION. ALL NURSERY STOCK SHALL BE IN ACCORDANCE WITH GRADES AND STANDARDS FOR NURSERY PLANTS PARTS I AND II, LATEST EDITION PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES. ALL PLANTS, UNLESS OTHERWISE NOTED, SHALL BE FLORIDA GRADE NO. I OR BETTER AS DETERMINED BY THE FLORIDA DIVISION OF PLANT INDUSTRY. ALL PLANTS SHALL BE FRESHLY DUG, SOUND, HEALTHY, VIGOROUS, WELL-BRANCHED AND FREE OF DISEASE AND INSECTS, INSECT EGGS AND LARVAE AND SHALL HAVE ADEQUATE ROOT SYSTEMS. TREES FOR PLANTING IN ROWS SHALL BE UNIFORM IN SIZE AND SHAPE. ALL MATERIALS SHALL BE SUBJECT TO APPROVAL BY THE OWNER. WHERE ANY REQUIREMENTS ARE OMITTED FROM THE PLANT LIST, THE PLANTS FURNISHED SHALL BE NORMAL FOR THE VARIETY. PLANTS SHALL BE PRUNED PRIOR TO DELIVERY ONLY UPON THE APPROVAL OF THE OWNER.

3. MEASUREMENTS: THE HEIGHT AND/OR WIDTH OF TREES SHALL BE MEASURED FROM THE GROUND OR ACROSS THE NORMAL SPREAD OF BRANCHES WITH THE PLANTS IN THEIR NORMAL POSITION. THIS MEASUREMENT SHALL NOT INCLUDE THE IMMEDIATE TERMINAL GROWTH. PLANTS LARGER IN SIZE THAN THOSE SPECIFIED IN THE PLANT LIST MAY BE USED IF APPROVED BY THE OWNER. IF THE USE OF LARGER PLANTS IS APPROVED, THE BALL OF EARTH OR SPREAD OF ROOTS SHALL BE INCREASED IN PROPORTION TO THE SIZE OF THE PLANT.

4. INSPECTION: PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, OR UPON DELIVERY TO THE SITE, AS DETERMINED BY THE OWNER, FOR QUALITY, SIZE, AND VARIETY. SUCH APPROVAL SHALL NOT IMPAIR THE RIGHT OF INSPECTION AND REJECTION AT THE SITE DURING PROGRESS OF THE WORK OR AFTER COMPLETION FOR SIZE AND CONDITION OF BALLS OR ROOTS, LATENT DEFECTS OR INJURIES. REJECTED PLANTS SHALL BE REMOVED IMMEDIATELY FROM THE SITE. NOTICE REQUESTING INSPECTION SHALL BE SUBMITTED IN WRITING BY THE CONTRACTOR AT LEAST ONE (1) WEEK PRIOR TO ANTICIPATED DATE.

E. TOPSOIL AND SAND (PLANTING SOIL)

TOPSOIL FOR USE IN PREPARING SOIL FOR BACKFILLING PLANT PITS SHALL BE THIRTY PERCENT (30%) LOAM AND SEVENTY PERCENT (70%) SAND AND BE FERTILE, FRIABLE, AND OF A LOAMY CHARACTER, WITHOUT MIXTURE OF SUBSOIL MATERIALS, AND OBTAINED FROM A WELL-DRAINED, ARABLE SITE. IT SHALL CONTAIN THREE (3) TO FIVE (5) PERCENT DECOMPOSED ORGANIC MATTER AND SHALL BE FREE FROM HEAVY CLAY, COARSE SAND, STONES, LIME, LUMPS, PLANTS, ROOTS OR OTHER FOREIGN MATERIALS, OR NOXIOUS WEEDS. IT SHALL NOT CONTAIN TOXIC SUBSTANCES WHICH MAY BE HARMFUL TO PLANT GROWTH. PH RANGE SHALL BE 5.0 TO 7.0 INCLUSIVE. SAND SHALL BE COARSE, CLEAN, WELL RAINING NATIVE SAND. CONTRACTOR SHALL SUBMIT RESULTS OF SOIL TESTS FOR TOPSOIL AND SAND PROPOSED FOR USE UNDER THIS CONTRACT FOR APPROVAL BY THE OWNER.

TREES SHALL BE PLANTED IN THE EXISTING NATIVE SOIL ONSITE UNLESS DETERMINED TO BE UNSUITABLE AT WHICH POINT THE CONTRACTOR SHALL CONTACT LANDSCAPE ARCHITECT TO DISCUSS ALTERNATE RECOMMENDATION PRIOR TO PLANTING.

F. WATER

WATER NECESSARY FOR PLANTING AND MAINTENANCE SHALL BE OF SATISFACTORY QUALITY TO SUSTAIN AN ADEQUATE GROWTH OF PLANTS AND SHALL NOT CONTAIN HARMFUL, NATURAL OR MAN-MADE ELEMENTS DETRIMENTAL TO PLANTS. WATER MEETING THE ABOVE STANDARD SHALL BE OBTAINED ON THE SITE FROM THE OWNER, IF AVAILABLE, AND THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE ARRANGEMENTS FOR ITS USE BY HIS TANKS, HOSES, SPRINKLERS, ETC. IF SUCH WATER IS NOT AVAILABLE AT THE SITE, THE CONTRACTOR SHALL PROVIDE SUCH SATISFACTORY WATER FROM SOURCES OFF THE SITE AT NO ADDITIONAL COST TO THE OWNER.

G. COMMERCIAL FERTILIZER

COMMERCIAL FERTILIZER SHALL BE A COMPLETE FORMULA; IT SHALL BE UNIFORM IN COMPOSITION, DRY AND FREE FLOWING. THIS FERTILIZER SHALL BE DELIVERED TO THE SITE IN THE ORIGINAL UNOPENED CONTAINERS, EACH BEARING THE MANUFACTURER'S GUARANTEED STATEMENT OF ANALYSIS. FIFTY PERCENT (50%) OF THE NITROGEN SHALL BE DERIVED FROM NATURAL ORGANIC SOURCES. THE FOLLOWING FERTILIZERS SHALL BE USED AND APPLIED AT RATES AS SUGGESTED BY MANUFACTURER'S SPECIFICATIONS:

1. SHRUBS AND TREES - MILORGANITE, OR APPROVED EQUAL

2. ANNUALS AND GROUNDCOVERS - OSMOCOTE/SIERRA BLEND 14-14-14

3. SOD - 8-8-8

H. MULCH

MULCH MATERIAL SHALL BE MOISTENED AT THE TIME OF APPLICATION TO PREVENT WIND DISPLACEMENT, AND APPLIED AT A DEPTH OF 3 INCHES. SEE PLANT LIST FOR TYPE OF MATERIAL AND GRADE. FOR MULCH CONTACT: WOOD RESOURCE RECOVERY, PHONE # (352) 378-9133.

I. DIGGING AND HANDLING

1. PROTECT ROOTS OR BALLS OF PLANTS AT ALL TIMES FROM SUN AND DRYING WINDS, WATER AND FREEZING, AS NECESSARY UNTIL PLANTING. PLANT MATERIALS SHALL BE ADEQUATELY PACKED TO PREVENT BREAKAGE AND DRYING OUT DURING TRANSIT. TREES TRANSPORTED MORE THAN TEN (10) MILES OR WHICH ARE NOT PLANTED WITHIN THREE (3) DAYS OF DELIVERY TO SITE SHALL BE SPRAYED WITH AN ANTITRANSPIRANT PRODUCT ("WILTPRUF" OR EQUAL) TO MINIMIZE TRANSPIRATIONAL WATER LOSS.

2. BALLED AND BURLAPPED PLANTS (B&B) SHALL BE DUG WITH FIRM, NATURAL BALLS OF SOIL OF SUFFICIENT SIZE TO ENCOMPASS THE FIBROUS AND FEEDING ROOTS OF THE PLANTS. NO PLANTS MOVED WITH A BALL SHALL BE PLANTED IF THE BALL IS CRACKED OR BROKEN. PLANTS BALLED AND BURLAPPED OR CONTAINER GROWN SHALL NOT BE HANDLED BY STEMS.

3. PLANTS MARKED "BR" IN THE PLANT LIST SHALL BE DUG WITH BARE ROOTS. THE ROOTS SHALL NOT BE CUT WITHIN THE MINIMUM SPREAD SPECIFIED IN THE PLANT LIST. CARE SHALL BE EXERCISED THAT THE ROOTS DO NOT DRY OUT IN MOVING AND PRIOR TO PLANTING.

4. PROTECTION OF PALMS (IF APPLICABLE): ONLY A MINIMUM OF FRONDS SHALL BE REMOVED FROM THE CROWN OF THE PALM TREES TO FACILITATE MOVING AND HANDLING. CLEAR TRUNK (CT) SHALL BE AS SPECIFIED AFTER THE MINIMUM OF FRONDS HAVE BEEN REMOVED. ALL PALMS SHALL BE BRACED PER DETAIL.

5. EXCAVATION OF TREE PITS SHALL BE DONE USING EXTREME CARE TO AVOID DAMAGE TO SURFACE AND SUBSURFACE ELEMENTS SUCH AS UTILITIES OR HARDSCAPE ELEMENTS, FOOTERS AND PREPARED SUB-BASES.

J. CONTAINER GROWN STOCK

1. ALL CONTAINER GROWN MATERIAL SHALL BE HEALTHY, VIGOROUS, WELL-ROOTED AND ESTABLISHED IN THE CONTAINER IN WHICH THEY ARE SOLD. THE PLANTS SHALL HAVE TOPS WHICH ARE OF GOOD QUALITY AND ARE IN A HEALTHY GROWING CONDITION.

2. AN ESTABLISHED CONTAINER GROWN PLANT SHALL BE TRANSPLANTED INTO A CONTAINER AND GROWN IN THAT CONTAINER SUFFICIENTLY LONG FOR THE NEW FIBROUS ROOTS TO HAVE DEVELOPED SO THAT THE ROOT MASS WILL RETAIN ITS SHAPE AND HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER. CONTAINER GROWN STOCK SHALL NOT BE HANDLED BY THEIR STEMS.

3. PLANT ROOTS BOUND IN CONTAINERS SHALL NOT BE ACCEPTABLE.

4. SUBSTITUTION OF NON-CONTAINER GROWN MATERIAL FOR MATERIAL EXPLICITLY SPECIFIED TO BE CONTAINER GROWN WILL NOT BE PERMITTED UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE OWNER AND LANDSCAPE ARCHITECT.

K. COLLECTED STOCK

WHEN THE USE OF COLLECTED STOCK IS PERMITTED, AND ONLY AS INDICATED ON THE PLANT LIST SCHEDULE, THE MINIMUM SIZES OF ROOTBALLS SHALL BE EQUAL TO THAT SPECIFIED FOR THE NEXT LARGER SIZE OF NURSERY GROWN STOCK OF THE SAME VARIETY.

L. NATIVE STOCK

PLANTS COLLECTED FROM WILD OR NATIVE STANDS SHALL BE CONSIDERED NURSERY GROWN WHEN THEY HAVE BEEN SUCCESSFULLY REESTABLISHED IN A NURSERY ROW AND GROWN UNDER REGULAR NURSERY CULTURAL PRACTICES FOR A MINIMUM OF TWO (2) GROWING SEASONS AND HAVE ATTAINED ADEQUATE ROOT AND TOP GROWTH TO INDICATE FULL RECOVERY FROM TRANSPLANTING INTO THE NURSERY ROW.

M. MATERIALS LIST

QUANTITIES NECESSARY TO COMPLETE THE WORK ON THE DRAWINGS SHALL BE FURNISHED BY THE CONTRACTOR. QUANTITY ESTIMATES HAVE BEEN MADE CAREFULLY, BUT THE LANDSCAPE ARCHITECT OR OWNER ASSUMES NO LIABILITY FOR OMISSIONS OR ERRORS. SHOULD A DISCREPANCY OCCUR BETWEEN THE BIDDERS TAKE OFF AND THE PLANT LIST QUANTITY, THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION PRIOR TO THE SUBMISSIONS OF BIDS.

ALL DIMENSIONS AND/OR SIZES SPECIFIED SHALL BE THE MINIMUM ACCEPTABLE SIZE.

N. FINE GRADING

1. FINE GRADING UNDER THIS CONTRACT SHALL CONSIST OF FINAL FINISHED GRADING OF SITE FEATURES AND PLANTING AREAS THAT HAVE BEEN ROUGH GRADED BY OTHERS.

2. THE LANDSCAPE CONTRACTOR SHALL FINE GRADE THE LAWN AND PLANTING AREAS TO BRING THE ROUGH GRADE UP TO FINAL FINISHED GRADE ALLOWING FOR THICKNESS OF SOD AND/OR MULCH DEPTH. THIS CONTRACTOR SHALL FINE GRADE BY HAND AND/OR WITH ALL EQUIPMENT NECESSARY INCLUDING A GRADING TRACTOR WITH FRONT-END LOADER FOR TRANSPORTING SOIL WITHIN THE SITE.

3. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED TO ALLOW FREE FLOW OF SURFACE WATER. AREAS ADJACENT TO BUILDINGS SHALL SLOPE AWAY FROM THE BUILDINGS.

O. PLANTING PROCEDURES

1. CLEANING UP BEFORE COMMENCING WORK: THE CONTRACTOR SHALL CLEAN UP WORK AND SURROUNDING AREAS OF ALL RUBBISH OR OBJECTIONABLE MATTER. ALL MORTAR, CEMENT, AND TOXIC MATERIAL SHALL BE REMOVED FROM THE SURFACE OF ALL PLANT BEDS. THESE MATERIALS SHALL NOT BE MIXED WITH THE SOIL. SHOULD THE CONTRACTOR FIND SUCH SOIL CONDITIONS BENEATH THE SOIL WHICH WILL IN ANY WAY ADVERSELY AFFECT THE PLANT GROWTH, HE SHALL IMMEDIATELY CALL IT TO THE ATTENTION OF THE OWNER. FAILURE TO DO SO BEFORE PLANTING SHALL MAKE THE CORRECTIVE MEASURES THE RESPONSIBILITY OF THE CONTRACTOR.

2. VERIFY LOCATIONS OF ALL UTILITIES, CONDUITS, SUPPLY LINES AND CABLES, INCLUDING BUT NOT LIMITED TO: ELECTRIC, GAS (LINES AND TANKS), WATER, SANITARY SEWER, STORMWATER LINES, CABLE AND TELEPHONE. PROPERLY MAINTAIN AND PROTECT EXISTING UTILITIES.

3. SUBGRADE EXCAVATION: SITE CONTRACTOR IS RESPONSIBLE TO REMOVE ALL EXISTING AND IMPORTED LIMEROCK AND LIMEROCK SUB-BASE FROM ALL LANDSCAPE PLANTING AREAS TO A MINIMUM DEPTH OF 36". SITE CONTRACTOR IS RESPONSIBLE TO BACKFILL THESE PLANTING AREAS TO ROUGH FINISHED GRADE WITH CLEAN TOPSOIL FROM AN ON-SITE SOURCE OR AN IMPORTED SOURCE. IF LIMEROCK OR OTHER ADVERSE CONDITIONS OCCUR IN PLANTED AREAS AFTER 36" DEEP EXCAVATION BY SITE CONTRACTOR, AND POSITIVE DRAINAGE CAN NOT BE ACHIEVED, LANDSCAPE CONTRACTOR SHALL UTILIZE PLANTING DETAIL THAT ADDRESSES POOR DRAINAGE.

4. FURNISH NURSERY'S CERTIFICATE OF COMPLIANCE WITH ALL REQUIREMENTS AS HEREIN SPECIFIED AND REQUIRED. INSPECT AND SELECT PLANT MATERIALS BEFORE PLANTS ARE DUG AT NURSERY OR GROWING SITE.

5. GENERAL: COMPLY WITH APPLICABLE FEDERAL, STATE, COUNTY, AND LOCAL REGULATIONS GOVERNING LANDSCAPE MATERIALS AND WORK. CONFORM TO ACCEPTED HORTICULTURAL PRACTICES AS USED IN THE TRADE. 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 TWENTY-FOUR (24) HOURS. AT ALL TIMES WORKMANLIKE METHODS CUSTOMARY IN GOOD HORTICULTURAL PRACTICES SHALL BE EXERCISED.

6. THE WORK SHALL BE COORDINATED WITH OTHER TRADES TO PREVENT CONFLICTS.

7. ALL PLANTING PITS SHALL BE EXCAVATED TO SIZE AND DEPTH IN ACCORDANCE WITH THE USDA STANDARD FOR NURSERY STOCK 260.1, UNLESS SHOWN OTHERWISE ON THE DRAWINGS, AND BACKFILLED WITH THE PREPARED PLANTING SOIL AS SPECIFIED HEREIN BEFORE (SECTION E). TEST ALL TREE PITS WITH WATER BEFORE PLANTING TO ASSURE PROPER DRAINAGE PERCOLATION IS AVAILABLE. NO ALLOWANCE WILL BE MADE FOR LOST PLANTS DUE TO IMPROPER DRAINAGE. IF POOR DRAINAGE EXISTS, UTILIZE PLANTING DETAIL THAT ADDRESSES THIS CONDITION. TREES SHALL BE SET PLUMB AND HELD IN POSITION UNTIL THE PLANTING MIXTURE HAS BEEN FLUSHED INTO PLACE WITH A SLOW, FULL HOSE STREAM. ALL PLANTING SHALL BE PERFORMED BY PERSONNEL FAMILIAR WITH PLANTING PROCEDURE AND UNDER THE SUPERVISION OF A QUALIFIED PLANTING FOREMAN. PROPER "JETTING IN" SHALL BE ASSURED TO ELIMINATE AIR POCKETS AROUND THE ROOTS. "JET STICK" OR EQUAL IS RECOMMENDED.

8. TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO BUILDINGS AND BUILDING STRUCTURES DURING CONSTRUCTION.

9. SOIL MIXTURE SHALL BE AS SPECIFIED IN SECTION E OF THESE SPECIFICATIONS. IN ADDITION, EACH PLANTING PIT SHALL RECEIVE 21-GRAM "AGRIFORM" (24-10-5 FORMULA) PLANTING TABLETS PER MANUFACTURER'S SPECIFICATIONS OR AS FOLLOWS:

-TWO (2) TABLETS PER 1 GAL. PLANT
-THREE (3) TABLETS PER 3 GAL. PLANT
-FOUR (4) TABLETS PER 7 GAL. PLANT

10. TREES AND SHRUBS SHALL BE SET STRAIGHT AND AT SUCH A LEVEL THAT AFTER SETTLEMENT, THE PLANT CROWN WILL STAND ONE (1) TO TWO (2) INCHES ABOVE GRADE. EACH PLANT SHALL BE SET IN THE CENTER OF THE PIT. PLANTING SOIL MIXTURE SHALL BE BACKFILLED AND THOROUGHLY TAMPED AROUND THE BALL AND SHALL BE SETTLED BY WATER AFTER TAMPING.

11. FILL HOLE WITH SOIL MIXTURE, MAKING CERTAIN ALL SOIL IS SATURATED. TO DO THIS, FILL HOLE WITH WATER AND ALLOW TO SOAK MINIMUM TWENTY (20) MINUTES, STIRRING IF NECESSARY TO GET SOIL THOROUGHLY WET. PACK LIGHTLY WITH FEET. ADD MORE WET SOIL MIXTURE. DO NOT COVER TOP OF BALL WITH SOIL MIXTURE, ONLY WITH MULCH. ALL BURLAP, ROPE, WIRES, ETC., SHALL BE REMOVED FROM THE SIDES AND TOPS OF BALLS, BUT NO BURLAP SHALL BE PULLED FROM UNDERNEATH.

12. PRUNING: EACH TREE SHALL BE PRUNED TO PRESERVE THE NATURAL CHARACTER OF THE PLANT AS SHOWN ON THE DRAWINGS. ALL SOFT WOOD OR SUCKER GROWTH AND ALL BROKEN OR BADLY DAMAGED BRANCHES SHALL BE REMOVED WITH A CLEAN CUT.

13. SHRUBS AND GROUND COVER PLANTS SHALL BE EVENLY SPACED IN ACCORDANCE WITH THE DRAWINGS AND AS INDICATED ON THE PLANT LIST. CULTIVATE ALL PLANTING AREAS TO A MINIMUM DEPTH OF 6", REMOVE AND DISPOSE ALL DEBRIS. TILL INTO THE TOP 4" OF THE PLANTING SOIL MIX AS SPECIFIED IN SECTION E. THOROUGHLY WATER ALL PLANTS AFTER INSTALLATION.

14. TREE GUYING AND BRACING SHALL BE INSTALLED BY THE LANDSCAPE CONTRACTOR IN ACCORDANCE WITH THE PLANS TO INSURE STABILITY AND MAINTAIN TREES IN AN UPRIGHT POSITION. IF THE LANDSCAPE CONTRACTOR AND OWNER DECIDE TO WAIVE THE TREE GUYING AND BRACING, THE OWNER SHALL NOTIFY THE LANDSCAPE ARCHITECT IN WRITING OF THEIR INTENTIONS AND AGREE TO HOLD HARMLESS THE LANDSCAPE ARCHITECT IN THE EVENT ANY TREES FALL DOWN AND DAMAGE PERSON OR PROPERTY.

15. MULCHING: PROVIDE A THREE (3) INCH MINIMUM LAYER OF SPECIFIED MULCH OVER THE ENTIRE AREA OF EACH SHRUB BED, GROUND COVER, VINE BED AND TREE PIT.

16. HERBICIDE WEED CONTROL: ALL PLANT BEDS SHALL BE KEPT FREE OF NOXIOUS WEEDS UNTIL FINAL ACCEPTANCE OF WORK. IF DIRECTED BY THE OWNER, "ROUND-UP" SHALL BE APPLIED FOR WEED CONTROL BY QUALIFIED PERSONNEL TO ALL PLANTING AREAS IN SPOT APPLICATIONS PER MANUFACTURER'S PRECAUTIONS AND SPECIFICATIONS. PRIOR TO FINAL INSPECTION, TREAT ALL PLANTING BEDS WITH AN APPROVED PRE-EMERGENT HERBICIDE AT AN APPLICATION RATE RECOMMENDED BY THE MANUFACTURER.

P. LAWN SODDING

1. THE WORK CONSISTS OF LAWN BED PREPARATION, SOIL PREPARATION, AND SODDING COMPLETE, IN STRICT ACCORDANCE WITH THE SPECIFICATIONS AND THE APPLICABLE DRAWINGS TO PRODUCE A GRASS LAWN ACCEPTABLE TO THE OWNER.

2. LAWN BED PREPARATION: ALL AREAS THAT ARE TO BE SODDED SHALL BE CLEARED OF ANY ROUGH GRASS, WEEDS, AND DEBRIS, AND THE GROUND BROUGHT TO AN EVEN GRADE. THE WHOLE SURFACE SHALL BE ROLLED WITH A ROLLER WEIGHING NOT MORE THAN ONE-HUNDRED (100) POUNDS PER FOOT OF WIDTH. DURING THE ROLLING, ALL DEPRESSIONS CAUSED BY SETTLEMENT OF ROLLING SHALL BE FILLED WITH ADDITIONAL SOIL, AND THE SURFACE SHALL BE REGRADED AND ROLLED UNTIL PRESENTING A SMOOTH AND EVEN FINISH THAT IS UP TO THE REQUIRED GRADE.

3. SOIL PREPARATION: PREPARE LOOSE BED FOUR (4) INCHES DEEP. APPLY FERTILIZER AT RATE OF TWENTY (20) POUNDS PER ONE THOUSAND (1000) SQUARE FEET. APPLICATION SHALL BE UNIFORM, UTILIZING APPROVED MECHANICAL SPREADERS. MIX FERTILIZER THOROUGHLY WITH THE SOIL TO A DEPTH OF THREE (3) INCHES. HAND RAKE UNTIL ALL BUMPS AND DEPRESSIONS ARE REMOVED. WET PREPARED AREA THOROUGHLY.

4. SODDING: THE CONTRACTOR SHALL SOD ALL AREAS THAT ARE NOT PAVED OR PLANTED AS DESIGNATED ON THE DRAWINGS WITHIN THE CONTRACT LIMITS, UNLESS SPECIFICALLY NOTED OTHERWISE. THE SOD SHALL BE CERTIFIED TO MEET FLORIDA STATE PLANT BOARD SPECIFICATIONS, ABSOLUTELY TRUE TO VARIETAL TYPE, AND FREE FROM WEEDS, FUNGUS, INSECTS AND DISEASE OF ANY KIND. SOD PANELS SHALL BE LAID TIGHTLY TOGETHER SO AS TO MAKE A SOLID SODDED LAWN AREA. SOD SHALL BE LAID UNIFORMLY AGAINST THE EDGES OF ALL CURBS AND OTHER HARDSCAPE ELEMENTS, PAVED AND PLANTED AREAS. IMMEDIATELY FOLLOWING SOD LAYING, THE LAWN AREAS SHALL BE ROLLED WITH A LAWN ROLLER CUSTOMARILY USED FOR SUCH PURPOSES, AND THEN THOROUGHLY WATERED. IF, IN THE OPINION OF THE OWNER, TOP-DRESSING IS NECESSARY AFTER ROLLING TO FILL THE VOIDS BETWEEN THE SOD PANELS AND TO EVEN OUT INCONSISTENCIES IN THE SOD, CLEAN SAND AS APPROVED BY THE LANDSCAPE ARCHITECT OR OWNER SHALL BE UNIFORMLY SPREAD OVER THE ENTIRE SURFACE OF THE SOD AND THOROUGHLY WATERED IN.

5. DURING DELIVERY, PRIOR TO 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 SO AS NOT TO BE DAMAGED BY SWEATING OR EXCESSIVE HEAT AND MOISTURE.

6. LAWN MAINTENANCE: WITHIN THE CONTRACT LIMITS, THE CONTRACTOR SHALL PRODUCE A DENSE, WELL ESTABLISHED LAWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND RE-SODDING OF ALL ERODED, SUNKEN OR BARE SPOTS UNTIL CERTIFICATION OF ACCEPTABILITY BY THE LANDSCAPE ARCHITECT OR OWNER. REPAIRED SODDING SHALL BE ACCOMPLISHED AS IN THE ORIGINAL WORK (INCLUDING REGRADING IF NECESSARY). WATER EVERY DAY FOR TEN (10) SUCCESSIVE DAYS, THEN WATER THREE (3) TIMES PER WEEK (AT EVEN INTERVALS) FOR TWO (2) ADDITIONAL WEEKS. ALL WATERING SHALL BE OF SUFFICIENT QUANTITY TO SUPPORT THE HEALTHY AND VIGOROUS GROWTH OF THE SOD.

Q. CLEAN-UP

UPON COMPLETION OF ALL PLANTING WORK AND BEFORE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL MATERIAL, EQUIPMENT, AND DEBRIS RESULTING FROM HIS WORK. ALL PAVED AREAS SHALL BE BROOM CLEANED AND THE SITE LEFT IN A NEAT AND ACCEPTABLE CONDITION AS APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE.

R. PLANT MATERIAL MAINTENANCE

ALL PLANTS AND PLANTING INCLUDED UNDER THIS CONTRACT SHALL BE MAINTAINED BY WATERING, CULTIVATING, SPRAYING, AND ALL OTHER OPERATIONS (SUCH AS RE-STAKING OR REPAIRING GUY SUPPORTS) NECESSARY TO INSURE A HEALTHY CONDITION BY THE CONTRACTOR FOR THE WARRANTY PERIOD. CONTRACTORS ARE REQUESTED TO PROVIDE A BID ESTIMATE TO COVER LANDSCAPE AND IRRIGATION MAINTENANCE FOR A PERIOD OF 1 YEAR COMMENCING AFTER CERTIFICATION OF ACCEPTABILITY.

S. GUARANTEE

1. THE LIFE AND SATISFACTORY CONDITION OF ALL PLANT MATERIAL INSTALLED BY THE LANDSCAPE CONTRACTOR SHALL BE GUARANTEED BY THE CONTRACTOR FOR A MINIMUM OF ONE (1) CALENDAR YEAR COMMENCING AT THE TIME OF CERTIFICATION OF ACCEPTABILITY BY THE LANDSCAPE ARCHITECT OR OWNER.

2. THE LIFE AND SATISFACTORY CONDITION OF ALL SOD INSTALLED BY THE LANDSCAPE CONTRACTOR SHALL BE GUARANTEED BY THE CONTRACTOR FOR A MINIMUM OF 180 CALENDAR DAYS, COMMENCING AT THE TIME OF CERTIFICATION OF ACCEPTABILITY BY THE LANDSCAPE ARCHITECT OR OWNER.

3. REPLACEMENT: ANY PLANT NOT FOUND IN A HEALTHY GROWING CONDITION AT THE END OF THE GUARANTEE PERIOD SHALL BE REMOVED FROM THE SITE AND REPLACED AS SOON AS WEATHER CONDITIONS PERMIT. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME KIND AND SIZE AS SPECIFIED IN THE PLANT LIST. THEY SHALL BE FURNISHED PLANTED AND MULCHED AS SPECIFIED UNDER "PLANTING", AT NO ADDITIONAL COST TO THE OWNER.

T. FINAL INSPECTION AND ACCEPTANCE OF WORK

FINAL INSPECTION AT THE END OF THE GUARANTEE PERIOD SHALL BE ON PLANTING, CONSTRUCTION AND ALL OTHER INCIDENTAL WORK PERTAINING TO THIS CONTRACT. ANY REPLACEMENT AT THIS TIME SHALL BE SUBJECT TO AN EXTENSION OF WARRANTY PERIOD FOR ONE (1) ADDITIONAL YEAR GUARANTEE BEGINNING WITH THE TIME OF REPLACEMENT AND ENDING WITH A FOLLOW-UP INSPECTION AND ACCEPTANCE ONE YEAR LATER.

IBI GROUP, INC.
HTTP://WWW.IBIGROUP.COM
ENGINEERS CERT OF AUTH #2966 SURVEYORS AC#LB5610
PLANNERS LANDSCAPE ARCHITECTS ENVIRONMENTAL CONSULTANTS
1519 MAIN STREET
SARASOTA, FL 34236
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IBI GROUP

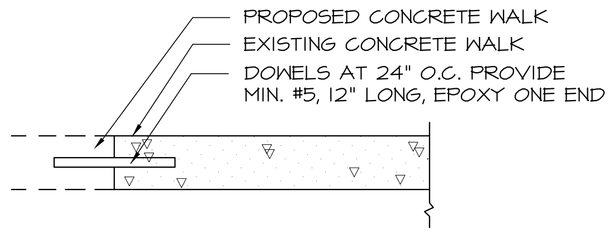
REV.	DATE	DESCRIPTION	BY

DRAWN: ST
DESIGNED: ST
CHECKED: ST
DATE: 08/22/08

NORMA LLOYD PARK
BRADENTON, FLORIDA
PHASE - 1
LANDSCAPE SPECIFICATIONS

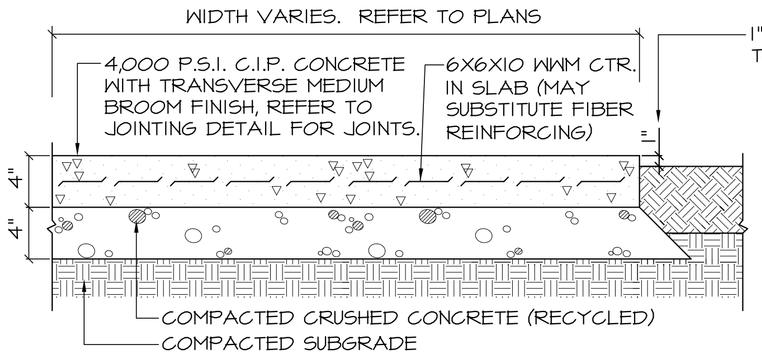
20245

SHEET
L-7



1 DOWEL BETWEEN EXISTING AND PROPOSED CONCRETE

NO SCALE (TYPICAL)

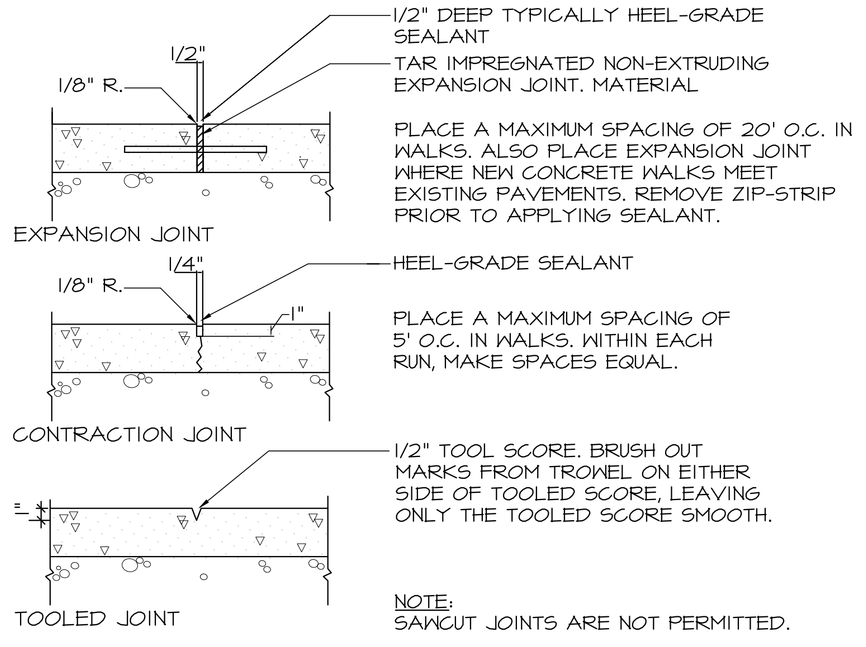


NOTE:
1. USE CONCRETE DETAIL FOR BIKE RACK PAD, TRASH RECEPTACLE PAD, RECYCLING BIN PAD, AND TRASH DUMPSTER PAD.
2. ALL SITE FURNISHINGS (INCLUDING DUMPSTERS) ARE TO BE PROVIDED BY OTHERS.

2 CONCRETE WALK AND PADS

NO SCALE (TYPICAL)

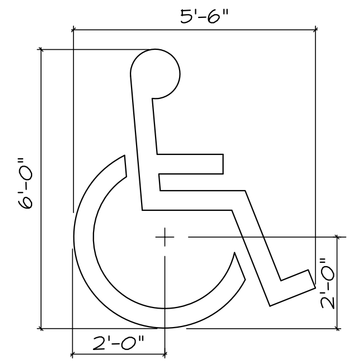
NOTE: EXPANSION JOINT MATERIAL SHALL BE "ZIP-STRIP" EXPANSION MATERIAL WITH REMOVEABLE CAP BY GREENSTREAK OR APPROVED EQUAL.



NOTE:
SAWCUT JOINTS ARE NOT PERMITTED.

3 JOINTING IN CONCRETE

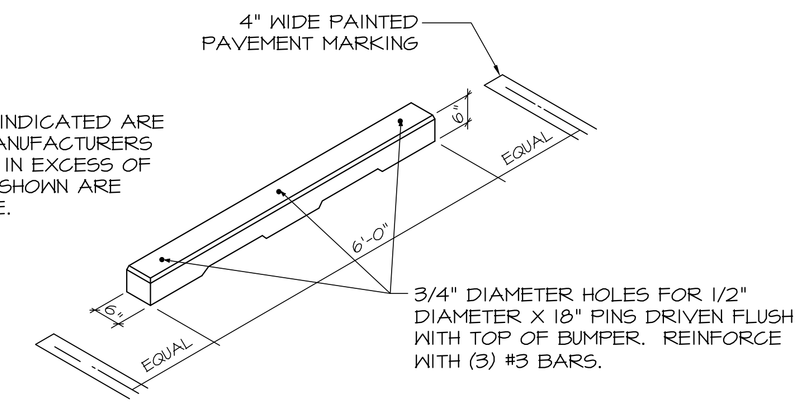
NO SCALE (TYPICAL)



SYMBOL SHALL BE APPLIED AT A WIDTH OF 4" AND PAINTED BLUE.

4 DISABLED ACCESSIBILITY SYMBOL

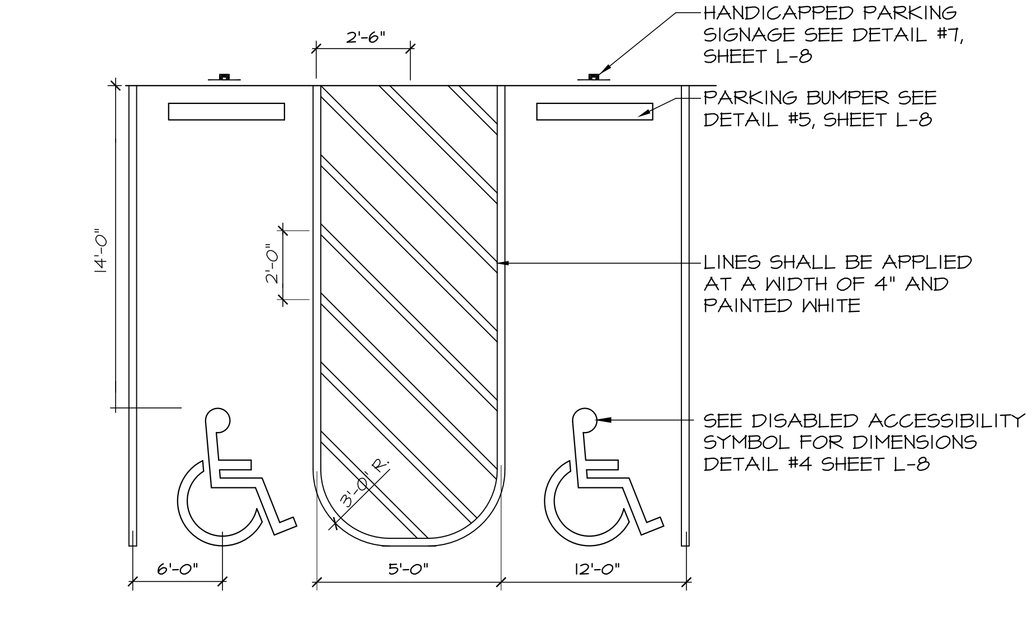
NO SCALE (TYPICAL)



NOTE:
DIMENSIONS INDICATED ARE MINIMUMS. MANUFACTURERS STANDARDS IN EXCESS OF DIMENSIONS SHOWN ARE ACCEPTABLE.

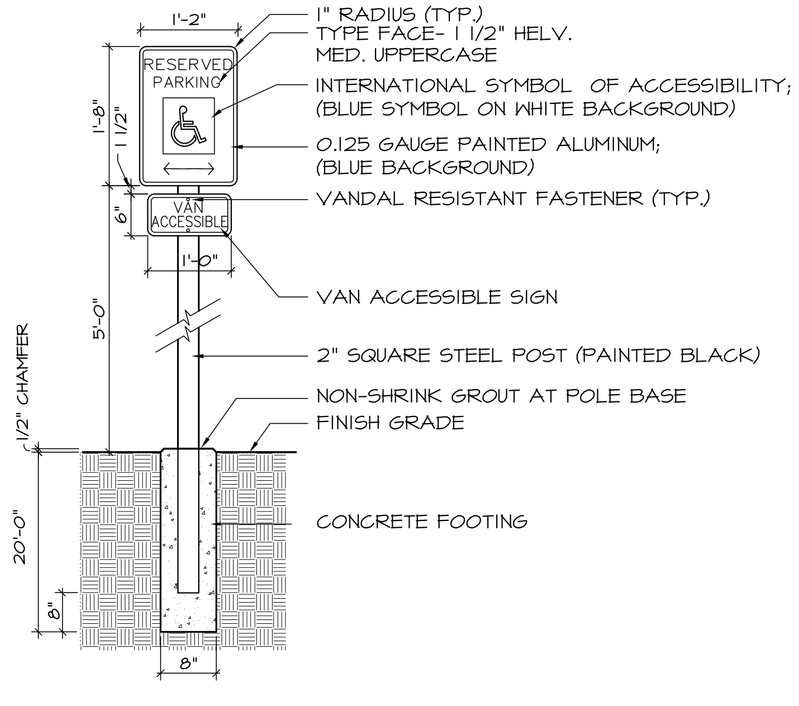
5 PARKING BUMPER

NO SCALE (TYPICAL)



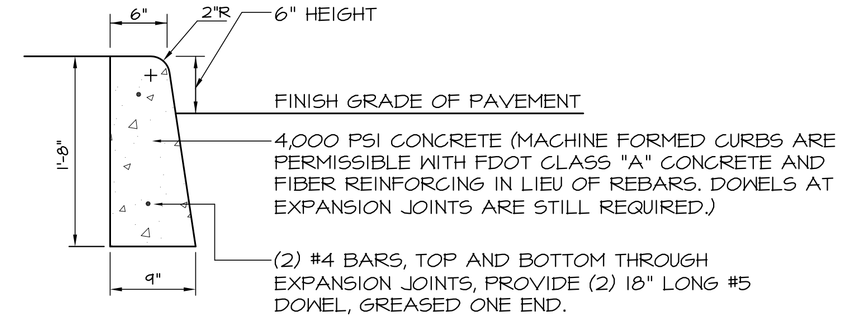
6 HANDICAPPED ACCESSIBLE PARKING SPACE

NO SCALE (TYPICAL)



7 HANDICAPPED PARKING SIGNAGE

NO SCALE (TYPICAL)

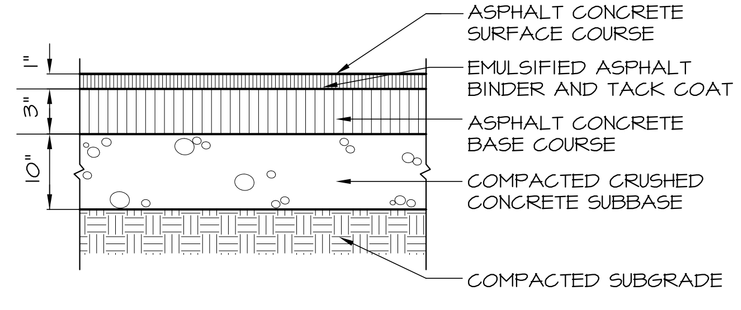


NOTE: ALL STEEL REINFORCING 2" CLEAR.

(REFER TO "JOINTING IN CONCRETE" DETAIL #3, SHEET L-8 FOR JOINTING REQUIREMENTS)

8 BARRIER CURB (PLANTING AREAS AND PARKING LOT)

NO SCALE (TYPICAL)



9 ASPHALT ROAD/PARKING LOT

NO SCALE (TYPICAL)

REV.	DATE	DESCRIPTION	BY
A	08/22/08	REVISE PER CITY COMMENTS	FW

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IBI GROUP

DRAWN: FW
DESIGNED: ST
CHECKED: ST
DATE: 06/27/08

NORMA LLOYD PARK
BRADENTON, FLORIDA

PHASE-1 SITE DETAILS

AS SHOWN

20245

SHEET
L-8

DEMOLITION GENERAL NOTES:

A) THE BOUNDARY SURVEY WAS PREPARED BY IBI GROUP, INC.

B) ALL WORK SHALL BE CONFINED TO LIMITS OF CONSTRUCTION SHOWN ON PLANS.

C) CONTRACTOR SHALL COORDINATE AND BE IN COMPLIANCE WITH ALL STATE AND LOCAL MUNICIPALITIES AS WARRANTED. CONTRACTOR SHALL NOTIFY MANATEE COUNTY AND CITY OF BRADENTON WHEN CONSTRUCTION BEGINS.

D) ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SPECIFICATIONS AND EXISTING SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN DRAWINGS OR SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE OWNER AND DESIGNER, IN WRITING, WHO SHALL PROMPTLY ADDRESS SUCH INCONSISTENCIES OR AMBIGUITIES. WORK DONE BY THE CONTRACTOR AFTER HIS DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S RISK.

E) DEVIATION FROM THESE PLANS AND NOTES WITHOUT THE PRIOR CONSENT OF THE OWNER, HIS/ HER REPRESENTATIVE, OR THE LANDSCAPE ARCHITECT MAY BE CAUSE FOR THE WORK TO BE DESIGNATED UNACCEPTABLE.

F) THE CONTRACTOR SHALL IMMEDIATELY REPORT TO THE OWNER AND LANDSCAPE ARCHITECT ANY UNFORESEEN OR ADVERSE CONDITIONS DISCOVERED DURING DEMOLITION OPERATIONS.

G) ALL TRENCHES AND/OR VOIDS CREATED BY THE REMOVAL OF EXISTING STRUCTURES SHALL BE BACKFILLED PER LOCAL AND STATE REGULATIONS.

H) THE LOCATION AND SIZE OF EXISTING ABOVE GROUND UTILITIES ARE SHOWN ON THE SURVEY. THE CONTRACTOR IS RESPONSIBLE FOR HORIZONTALLY AND VERTICALLY LOCATING AND PROTECTING ALL PUBLIC AND PRIVATE UTILITIES WHICH LIE IN OR ADJACENT TO THE CONSTRUCTION SITE. AT LEAST 48 HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY CALL SUNSHINE 1-800-432-4770 COORDINATE UTILITY WORK WITH MANATEE COUNTY AND CITY OF BRADENTON FOR COMPLIANCE WITH LOCAL CODES AND ORDINANCES.

I) THE CONTRACTOR SHALL PROTECT ALL EXISTING POWER POLES, MANHOLES, TELEPHONE RISERS, WATER VALVES, ETC., DURING ALL CONSTRUCTION PHASES, UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.

J) CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND/OR OBTAINING ALL REQUIRED PERMITS AND APPROVALS PRIOR TO COMMENCING CONSTRUCTION.

K) ALL DEMOLITION DEBRIS AND OTHER EXCESS MATERIAL SHALL BE HAULED OFF-SITE AS DIRECTED BY THE OWNER AND PROPERLY DISPOSED OF IN A LEGAL MATTER, UNLESS OTHERWISE NOTED.

L) ALL GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS AND TECHNICAL SPECIFICATIONS OF THE CONTRACT SHALL APPLY.

M) CONTRACTOR IS TO MAINTAIN CONTROLLED PEDESTRIAN AND ADA ACCESS THROUGH ALL AREAS OF THE SITE THROUGHOUT CONSTRUCTION PERIOD.

N) CONTRACTOR IS TO PROVIDE THE EXACT LOCATION OF THE CONSTRUCTION FENCE WITH THE APPROPRIATE OPENINGS PER DRAWINGS AND WRITTEN APPROVAL OF OWNER.

O) THE CONTRACTOR SHALL COORDINATE AND BE RESPONSIBLE FOR THE STAGING AND REMOVAL OF ALL DEMOLITION ITEMS.

P) THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE RESULTING FROM CONSTRUCTION ACTIVITY TO EXISTING ELEMENTS THAT ARE TO REMAIN.

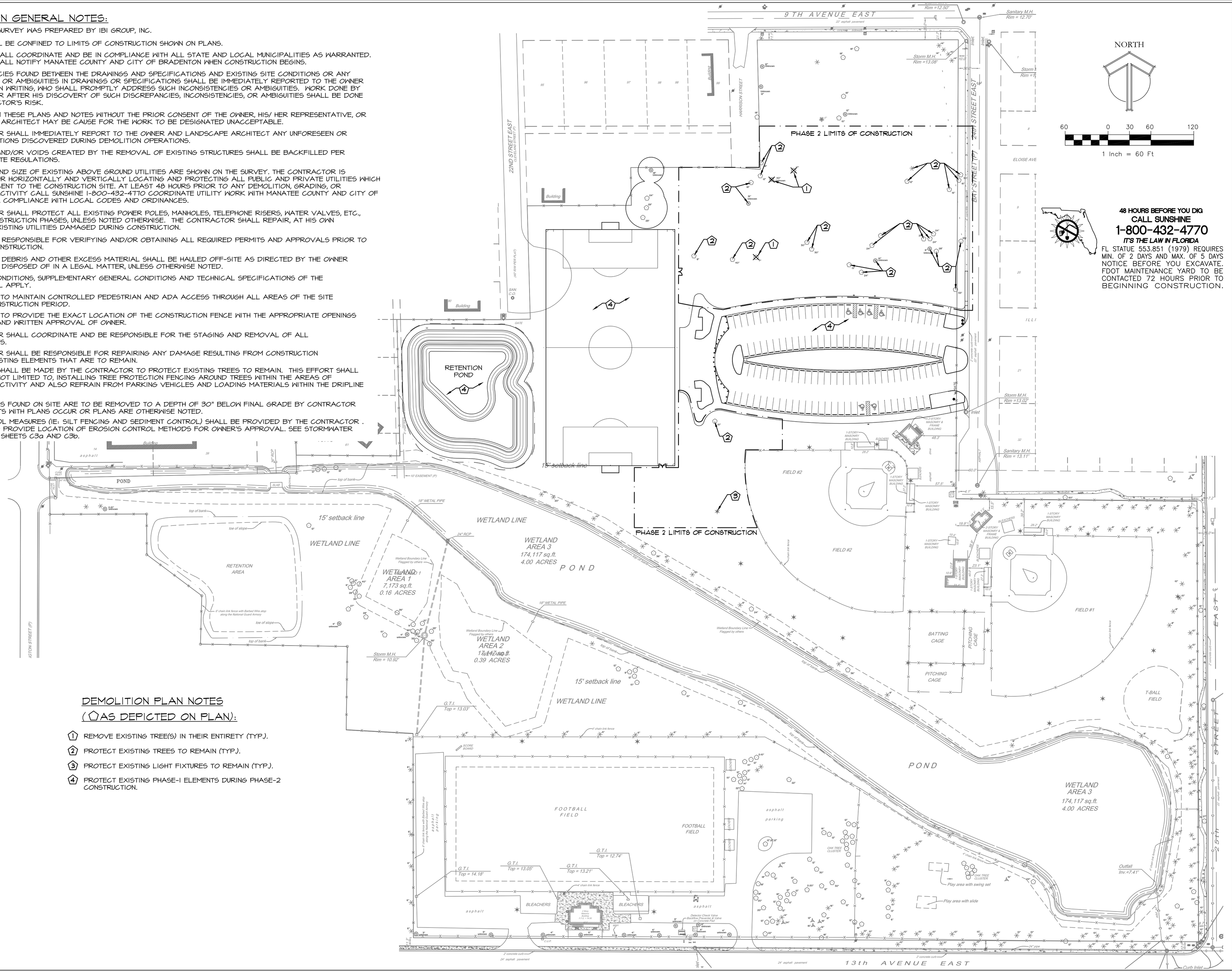
Q) EVERY EFFORT SHALL BE MADE BY THE CONTRACTOR TO PROTECT EXISTING TREES TO REMAIN. THIS EFFORT SHALL INCLUDE, BUT IS NOT LIMITED TO, INSTALLING TREE PROTECTION FENCING AROUND TREES WITHIN THE AREAS OF CONSTRUCTION ACTIVITY AND ALSO REFRAIN FROM PARKING VEHICLES AND LOADING MATERIALS WITHIN THE DRIPLINE OF TREES.

R) ANY FOUNDATIONS FOUND ON SITE ARE TO BE REMOVED TO A DEPTH OF 30" BELOW FINAL GRADE BY CONTRACTOR UNLESS CONFLICTS WITH PLANS OCCUR OR PLANS ARE OTHERWISE NOTED.

S) EROSION CONTROL MEASURES (IE: SILT FENCING AND SEDIMENT CONTROL) SHALL BE PROVIDED BY THE CONTRACTOR . CONTRACTOR TO PROVIDE LOCATION OF EROSION CONTROL METHODS FOR OWNER'S APPROVAL. SEE STORMWATER POLLUTION PLAN SHEETS C3a AND C3b.

DEMOLITION PLAN NOTES (⬠AS DEPICTED ON PLAN):

1. REMOVE EXISTING TREE(S) IN THEIR ENTIRETY (TYP.).
2. PROTECT EXISTING TREES TO REMAIN (TYP.).
3. PROTECT EXISTING LIGHT FIXTURES TO REMAIN (TYP.).
4. PROTECT EXISTING PHASE-1 ELEMENTS DURING PHASE-2 CONSTRUCTION.



48 HOURS BEFORE YOU DIG
CALL SUNSHINE
1-800-432-4770
IT'S THE LAW IN FLORIDA
FL STATUE 553.851 (1979) REQUIRES MIN. OF 2 DAYS AND MAX. OF 5 DAYS NOTICE BEFORE YOU EXCAVATE. FDOT MAINTENANCE YARD TO BE CONTACTED 72 HOURS PRIOR TO BEGINNING CONSTRUCTION.

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IBI GROUP

REV.	DATE	DESCRIPTION	BY

DRAWN: FW
DESIGNED: ST
CHECKED: ST
DATE: 08/22/08

NORMA LLOYD PARK
BRADENTON, FLORIDA

PHASE 2 – DEMOLITION PLAN

20245

SHEET
L-9

Norma Lloyd Park Improvements
Bradenton, Florida

Prepared for: Manatee County,
Construction Services Division

TECHNICAL SPECIFICATIONS
August 22, 2008

DESIGN TEAM:

IBI GROUP, INC.

1519 MAIN STREET
SARASOTA, FLORIDA 34236
PHONE: 941/954-1718
FAX: 941/954-0231

TECHNICAL SPECIFICATIONS

END OF TABLE OF CONTENTS

Note: Plant Material and Turf Grasses specification information are contained on the “Landscape Specifications” drawing in the construction document set.

SECTION 015639 - TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes general protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.

B. Related Sections:

1. Division 01 Section "Temporary Facilities and Controls" for temporary site fencing.
2. Division 31 Section "Site Clearing" for removing existing trees and shrubs.

1.3 DEFINITIONS

A. Caliper: Diameter of a trunk measured by a diameter tape] at 6 inches (150 mm) above the ground for trees up to, and including, 4-inch (100-mm) size; and 12 inches (300 mm) above the ground for trees larger than 4-inch (100-mm) size.

B. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and indicated on Drawings.

C. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, and defined by a circle concentric with each tree with a radius 1.0 time the diameter of the drip line unless otherwise indicated.

D. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Verification: For each type of the following:

1. Organic Mulch: 1-pint (0.5-L) volume of organic mulch; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch.
2. Protection-Zone Fencing: Assembled Samples of manufacturer's standard size made from full-size components.

C. Tree Pruning Schedule: Written schedule detailing scope and extent of pruning of trees to remain that interfere with or are affected by construction.

1. Species and size of tree.
2. Location on site plan. Include unique identifier for each.
3. Reason for pruning.
4. Description of pruning to be performed.
5. Description of maintenance following pruning.

D. Qualification Data: For qualified arborist and tree service firm.

E. Certification: From arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.

F. Maintenance Recommendations: From arborist, for care and protection of trees affected by construction during and after completing the Work.

G. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.

1. Use sufficiently detailed photographs or videotape.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

1.5 QUALITY ASSURANCE

A. Arborist Qualifications: Licensed arborist in jurisdiction where Project is located.

B. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed temporary tree and plant protection work similar to that required for this Project and that will assign an experienced, qualified arborist to Project site during execution of the Work.

C. Preinstallation Conference: Conduct conference at the project site.

1. Review methods and procedures related to temporary tree and plant protection including, but not limited to, the following:

a. Construction schedule. Verify availability of materials, personnel, and equipment needed to make progress and avoid delays.
b. Enforcing requirements for protection zones.
c. Arborist's responsibilities.
d. Field quality control.

1.6 PROJECT CONDITIONS

A. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

B. Do not direct vehicle or equipment exhaust toward protection zones.

C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Topsoil: Natural or cultivated top layer of the soil profile or manufactured topsoil; containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 1 inch (25 mm) in diameter; and free of weeds, roots, and toxic and other nonsoil materials. See landscape specifications on drawings for further topsoil specification information.

1. Obtain topsoil only from well-drained sites where topsoil is 4 inches (100 mm) deep or more; do not obtain from bogs or marshes.

B. Topsoil: Stockpiled topsoil from proposed soccer field shown on Drawings. If additional topsoil is required it is to comply with ASTM D 5268.

C. Organic Mulch: Free from deleterious materials and suitable as a top dressing for trees and shrubs, consisting of one of the following:

1. Type: Shredded Melaluca is preferable. Shredded hardwood is an acceptable alternative is submitted to Owner for approval prior to ordering.
2. Size Range: 3 inches (76 mm) maximum, 1/2 inch (13 mm) minimum.
3. Color: Natural.

D. Protection-Zone Fencing: Fencing fixed in position and meeting the following requirements. Previously used materials may be used when approved by Owner.

1. Plastic Protection-Zone Fencing: Plastic construction fencing constructed of high-density extruded and stretched polyethylene fabric with 2-inch (50-mm) maximum opening in pattern and weighing a minimum of 0.4 lb/ft. (0.6 kg/m); remaining flexible from minus 60 to plus 200 deg F (minus 16 to plus 93 deg C); inert to most chemicals and acids; minimum tensile yield strength of 2000 psi (13.8 MPa) and ultimate tensile strength of 2680 psi (18.5 MPa); secured with plastic bands or galvanized-steel or stainless-steel

wire ties; and supported by tubular or T-shape galvanized-steel posts spaced not more than 8 feet (2.4 m) apart.

a. Height: 4 feet (1.2 m).
b. Color: High-visibility orange, nonfading.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

B. For the record, prepare written report, endorsed by arborist, listing conditions detrimental to tree and plant protection.

3.2 PREPARATION

A. Locate and clearly identify trees, shrubs, and other vegetation to remain. Tie a 1-inch (25-mm) blue-vinyl tape around each tree trunk at 54 inches (1372 mm) above the ground.

B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.

C. Tree-Protection Zones: Mulch areas inside tree-protection zones and other areas indicated.

1. Apply 4-inch (100-mm) average thickness of organic mulch. Do not place mulch within 6 inches (150 mm) of tree trunks.

3.3 TREE- AND PLANT-PROTECTION ZONES

A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people from easily entering protected area except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.

B. Maintain protection zones free of weeds and trash.

C. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Architect.

D. Maintain protection-zone fencing in good condition as acceptable to Owner and remove when construction operations are complete and equipment has been removed from the site.

1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
2. Temporary access is permitted subject to preapproval in writing by arborist if a root buffer effective against soil compaction is constructed as directed by arborist. Maintain root buffer so long as access is permitted.

3.4 EXCAVATION

A. General: Excavate at edge of protection zones and for trenches indicated within protection zones according to requirements in Division 31 Section "Earth Moving."

B. Trenching near Trees: Where utility trenches are required within protection zones, hand excavate under or around tree roots or tunnel under the roots by drilling, auger boring, or pipe jacking. Do not cut main lateral tree roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots as required for root pruning.

C. Redirect roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately 3 inches (75 mm) back from new construction and as required for root pruning.

D. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

3.5 ROOT PRUNING

A. Prune roots that are affected by temporary and permanent construction. Prune roots as follows:

1. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
2. Cut Ends: Do not paint cut root ends..
3. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
4. Cover exposed roots with burlap and water regularly.
5. Backfill as soon as possible according to requirements in Division 31 Section "Earth Moving."

B. Root Pruning at Edge of Protection Zone: Prune roots 6 inches (150 mm) outside of the protection zone, by cleanly cutting all roots to the depth of the required excavation.

C. Root Pruning within Protection Zone: Clear and excavate by hand to the depth of the required excavation to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.

3.6 CROWN PRUNING

A. Prune branches that are affected by temporary and permanent construction. Prune branches as follows:

1. Prune trees to remain to compensate for root loss caused by damaging or cutting root system. Provide subsequent maintenance during Contract period as recommended by arborist.
2. Pruning Standards: Prune trees according to ANSI A300 (Part 1)
3. Cut branches with sharp pruning instruments; do not break or chop.
4. Do not apply pruning paint to wounds.

B. Chip removed branches and stockpile and spread over areas identified on drawings for mulch by Architect.

3.7 REGRADING

A. Lowering Grade: Where new finish grade is indicated below existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.

B. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.

3.8 FIELD QUALITY CONTROL

A. Inspections: Engage a qualified arborist to direct plant-protection measures in the vicinity of trees, shrubs, and other vegetation indicated to remain and to prepare inspection reports.

3.9 REPAIR AND REPLACEMENT

A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Architect.

1. Submit details of proposed root cutting and tree and shrub repairs.
2. Have arborist perform the root cutting, branch pruning, and damage repair of trees and shrubs.
3. Treat damaged trunks, limbs, and roots according to arborist's written instructions.
4. Perform repairs within 24 hours.
5. Replace vegetation that cannot be repaired and restored to full-growth status, as determined by Architect.

B. Trees: Remove and replace trees indicated to remain that are more than 25 percent dead or in an unhealthy condition before the end of the corrections period or are damaged during construction operations that Owner determines are incapable of restoring to normal growth pattern.

1. Provide new trees of same size and species as those being replaced for each tree that measures 4 inches (100 mm) or smaller in caliper size.
2. Provide two new tree(s) of 6-inch (150-mm) caliper size for each tree being replaced that measures more than 4 inches (100 mm) in caliper size.

   a. Species: Species selected by Architect.
3. Plant and maintain new trees as specified in landscape specifications by Architect on drawings.

C. Damage Compensation: Any damage occurring to trees to remain or protected areas or removal of trees to remain in the protected areas caused by neglect, unauthorized encroachment and/or inadequate protection enforcement as determined by the Landscape Architect shall be the responsibility of the General Contractor.

1. Financial compensation for said damage or removal shall be determined by the Landscape Architect and Owner as per the following guidelines on a per occurrence basis:
2. A $2,500.00 fine shall be assessed for inadequate protection or tagging of protected areas, unauthorized encroachment of protected areas by construction machinery or other vehicular equipment.
3. A $5,000.00 fine shall be assessed for stockpiling, dumping, disposal of materials, grubbing, clearing or grading not in accordance with Specifications for Tree Preservation Section 02100.
4. Removal of any protected tree without previous written authorization from both the Landscape Architect and the Owner shall be assessed a fine equal to $250.00 per caliper inch of removed tree.

D. Soil Aeration: Where directed by Architect, aerate surface soil compacted during construction. Aerate 10 feet (3 m) beyond drip line and no closer than 36 inches (900 mm) to tree trunk. Drill 2-inch (50 mm) diameter holes a minimum of 12 inches (300 mm) deep at 24 inches (600 mm) o.c. Backfill holes with an equal mix of augered soil and sand.

3.10 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove excess excavated material, displaced trees, trash and debris, and legally dispose of them off Owner's property.

END OF SECTION 015639

SECTION 024116 - STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Demolition and removal of buildings and site improvements.
2. Abandoning in place below-grade construction.
3. Disconnecting, capping or sealing, and abandoning in-place site utilities.
4. Salvaging items for reuse by Owner.

B. Related Sections include the following:
1. Division 02 Section "Selective Structure Demolition" for partial demolition of buildings, structures, and site improvements.
2. Division 31 Section "Site Clearing" for site clearing and removal of above- and below-grade site improvements not part of building demolition.

1.3 DEFINITIONS

A. Demolish: Completely remove and legally dispose of off-site.

B. Recycle: Recovery of demolition waste for subsequent processing in preparation for reuse.

C. Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse. Include fasteners or brackets needed for reattachment elsewhere.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Schedule of Building Demolition Activities: Indicate the following:

1. Detailed sequence of demolition work, with starting and ending dates for each activity.
2. Temporary interruption of utility services.
3. Shutoff and capping of utility services.

C. Building Demolition Plans: Drawings indicating the following:

1. Locations of temporary protection.

D. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.

E. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.5 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI A10.6 and NFPA 241.

C. Predemolition Conference: Conduct conference at Project site. Review methods and procedures related to building demolition including, but not limited to, the following:

1. Inspect and discuss condition of construction to be demolished.
2. Review structural load limitations of existing structures.
3. Review and finalize building demolition schedule and verify availability of demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review and finalize protection requirements.
5. Review procedures for dust control.
6. Review items to be salvaged and returned to Owner.

1.6 PROJECT CONDITIONS

A. Buildings to be demolished will be vacated and their use discontinued before start of the Work.

B. Owner assumes no responsibility for buildings and structures to be demolished.

1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

D. On-site storage or sale of removed items or materials is not permitted.

1.7 COORDINATION

A. Arrange demolition schedule so as not to interfere with Owner's on-site operations.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Satisfactory Soils: Comply with requirements in Division 31 Section "Earth Moving."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting demolition operations.

B. Review Project Record Documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

3.2 PREPARATION

A. Existing Utilities: Locate, identify, disconnect, and seal or cap off indicated utilities serving buildings and structures to be demolished.

1. Owner will arrange to shut off indicated utilities when requested by Contractor.
2. If removal, relocation, or abandonment of utility services will affect adjacent occupied buildings, then provide temporary utilities that bypass buildings and structures to be demolished and that maintain continuity of service to other buildings and structures.
3. Cut off pipe or conduit a minimum of 24 inches (610 mm) below grade. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing according to requirements of authorities having jurisdiction.

B. Existing Utilities: Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing.

C. Salvaged Items: Comply with the following:

1. Clean salvaged items of dirt and demolition debris.
2. Pack or crate items after cleaning. Identify contents of containers.

3. Store items in a secure area until delivery to Owner.
4. Transport items to storage area designated by Owner.
5. Protect items from damage during transport and storage.

3.3 PROTECTION

A. Existing Facilities: Protect adjacent walkways and other facilities during demolition operations.

B. Existing Utilities: Maintain utility services to remain and protect from damage during demolition operations.

1. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.

C. Temporary Protection: Erect temporary protection, such as walks, fences and railings where required by authorities having jurisdiction and as indicated.

1. Protect adjacent facilities from damage due to demolition activities.
2. Protect existing site improvements, appurtenances, and landscaping to remain.
3. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
4. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent facilities to remain.
5. Provide protection to ensure safe passage of people around building demolition area.

D. Remove temporary barriers and protections where hazards no longer exist. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.

3.4 DEMOLITION, GENERAL

A. General: Demolish indicated existing buildings and site improvements completely. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
2. Maintain fire watch during and for at least four hours after flame cutting operations.
3. Maintain adequate ventilation when using cutting torches.
4. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

B. Site Access and Temporary Controls: Conduct building demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
2. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may create hazardous or objectionable conditions, such as flooding, and pollution.

C. Explosives: Use of explosives is not permitted.

3.5 DEMOLITION BY MECHANICAL MEANS

A. Proceed with demolition of structural framing members systematically, from higher to lower level. Complete building demolition operations above each floor or tier before disturbing supporting members on the next lower level.

B. Remove structural framing members and lower to ground by method suitable to minimize ground impact and dust generation.

C. Salvage: Items to be salvaged are to be determined by the Owner.

D. Below-Grade Construction: Abandon foundation walls and other below-grade construction. Cut below-grade construction 24” below grade.

E. Existing Utilities: Abandon existing utilities and below-grade utility structures. Cut utilities 24” below grade.

3.6 SITE RESTORATION

A. Below-Grade Areas: Rough grade below-grade areas ready for further excavation or new construction.

B. Below-Grade Areas: Completely fill below-grade areas and voids resulting from building demolition operations with satisfactory soil materials according to backfill requirements in Division 31 Section "Earth Moving."

C. Site Grading: Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site and legally dispose of them in an EPA-approved landfill acceptable to authorities having jurisdiction.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Do not burn demolished materials.

3.8 CLEANING

A. Clean adjacent facilitiesof dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.

END OF SECTION 024116

SECTION 024119 - SELECTIVE STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Demolition and removal of building or structure.
2. Demolition and removal of selected site elements.
3. Salvage of existing items to be reused or recycled.

B. Related Sections include the following:

1. Division 02 Section "Structure Demolition" for demolition of entire buildings, structures, and site improvements.
2. Division 31 Section "Site Clearing" for site clearing and removal of above- and below-grade improvements.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.

C. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 SUBMITTALS

A. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.

4. Locations of proposed dust- and noise-control mechanisms.
5. Means of protection for items to remain and items in path of waste removal from building.

B. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged.

C. Predemolition: Show existing conditions of adjoining site improvements.

1.5 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Standards: Comply with ANSI A10.6 and NFPA 241.

D. Predemolition Conference: Conduct conference at Project site. Review methods and procedures related to selective demolition including, but not limited to, the following:

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review structural load limitations of existing structure.
3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection.

1.6 PROJECT CONDITIONS

A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Owner will remove hazardous materials under a separate contract.

D. Storage or sale of removed items or materials on-site is not permitted.

E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. When unanticipated site elements that conflict with intended design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.

B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

3.3 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area.
2. Comply with local municipality’s requirements for dust control.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each tier before disturbing supporting members on the next lower level.
2. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
3. Maintain adequate ventilation when using cutting torches.
4. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
5. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
6. Dispose of demolished items and materials promptly

B. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in small sections. Cut concrete to a depth of at least 3/4 inch (19 mm) at junctures with construction to remain, using power-driven saw. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete indicated for selective demolition.

B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.

C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.

D. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI-WP and its Addendum.

1. Remove residual adhesive and prepare substrate for new floor coverings by one of the methods recommended by RFCI.
2. Roofing: Remove existing roof from structures to be demolished in its entirety.

E. Air-Conditioning Equipment: Remove equipment without releasing refrigerants.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be salvaged or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.7 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.8 SELECTIVE DEMOLITION SCHEDULE

A. Existing Items to Be Removed:

1. Baseball and t-ball structures as noted on drawings including but not limited to bleachers, batting cages, dugouts and fencing.

END OF SECTION 024119

SECTION 024120 – EROSION AND POLLUTION DISCHARGE CONTROL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.02 SCOPE

A. This Section governs procedures to be followed by Contractors to control discharge of sediment, petroleum products, sewage, vegetation, and other contaminants which may be associated with construction of the project. The scope of work the Contractor will prepare and submit the applications and any associated support information, including any associated fees or graphics, for the following permits: NPDES Permit, SWFWMD Permit and the City of Bradenton Stormwater Permit.

PART 2 - MATERIALS (Not Applicable)

PART 3 - INSTALLATION

3.01 SOIL EROSION AND SEDIMENTATION PLAN

A. Site specific plans for runoff, erosion and sediment control shall be furnished, amended with construction schedules (See Contract Drawings) and submitted by Contractor to appropriate local governing agency within ten days of receiving a Notice to Proceed on the Overall Project in accordance with Paragraph 3.08 of this Section.

3.02 RESPONSIBILITIES

A. Contractor shall submit the names and telephone numbers of Contractor personnel responsible for various components of the Plan.

3.03 DRAINAGE OF DETENTION BASINS, PONDS AND OTHER WATER BODIES

A. Owner reserves right to disapprove of the Contractor's compliance with soil erosion and pollution discharge control drainage plans and terminate drainage operations at any time. Where interruptions in drainage operations occur or more than five days are required to commence such operations after notification to terminate operations, Contractor may request a time extension and reimbursement of additional related costs, provided such interruptions or delays are not due to Contractor negligence. Contractor shall justify all claimed expenses associated with termination. A time extension will only be granted if Contractor can show to satisfaction of Owner that termination or disapproval of drainage plans will delay entire project.

3.04 PETROLEUM AND SEWAGE SPILL CONTROL

A. Petroleum products, sewage and other chemicals shall be kept out of the detention ponds and waterways. Therefore, the following practices shall be followed:

1. Maintenance, parking and storage shall be located at elevations above water surface elevations and at locations approved by Owner. Each of these areas shall be bermed to contain the amount of liquid from largest container in storage areas.
2. All wheeled equipment shall be serviced in approved vehicle maintenance areas.
3. All used crank case oil and hydraulic fluid shall be collected and disposed of at an approved off-site facility at Contractor's expense.
4. Soil outside vehicle maintenance area contaminated by petroleum products or other hazardous spills shall be excavated within 24 hours of contamination and removed to an approved disposal site at Contractor's expense.
5. Detention ponds or other facilities shall be provided for removing surface oil in runoff from maintenance, parking, and storage areas.
6. In the event that petroleum products, sewage or hazardous chemicals enter drainage features or more than 50 gallons of such material spills on ground, Contractor shall notify Owner and the following:
   a. Florida Department of Environmental Protection
7. The parties shall be told what was spilled; how much was spilled; whet it was spilled; how much entered the drainage features; and corrective measures being taken.

3.05 CONTROL OF SEWAGE

A. Direct discharge of sanitary wastes to water courses shall not be allowed.

B. Sanitary facilities shall be conveniently located and adequately maintained in order to prevent runoff of sanitary wastes to the watercourses.

C. Owner shall have the authority to suspend operations at any time when sanitary provisions do not meet local sanitary regulations or these Specifications.

D. Owner shall not incur any additional costs from suspended operations due to failure to meet sanitary provisions.

3.06 RUNOFF, EROSION, AND SEDIMENT CONTROL

A. Any combination of structural and vegetative practices described in these Specifications may be used provided such practices are implemented in manner specified and further provided such measures shall prevent accumulation in sediment basin of sediment in excess of one-half the volume of such basin over life of the Project.

B. Waste waters directly derived from fill material processing, aggregate processing, concrete curing, and foundation and concrete lift cleanup and any other source in the construction activities shall not be allowed to enter water areas. These waste waters shall be collected and placed in retention ponds where suspended material can be settled-out or water evaporates so that pollutants are separated from water.

3.07 DISPOSAL OF VEGETATION

A. Organic matter shall not be placed in ditches, gullies, drainage courses, streams, or other locations where portions of the matter can be washed into lakes by runoff or other drainage.

B. Disposal of waste soils, cleared and grubbed materials and all materials which are in excess of or are unsuitable for use in the permanent Work shall be disposed of in accordance with the requirements of federal, state and local requirements.

3.08 SCHEDULES

A. For each phase or stage of land-disturbing activity, a schedule shall be submitted. Schedule shall show the anticipated starting and completion date for all construction activities including:

1. Clearing operations
2. Grubbing operations
3. Dewatering activities
4. Rough and finished grading
5. Temporary and permanent sediment control measures
6. Storm water management facilities
7. Temporary sediment control structure removal.

END OF SECTION 024120

SECTION 024121 – SEDIMENT BARRIER

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.02 SCOPE

A. Sediment barriers are temporary barriers or diversions that are constructed of sandbags, straw or hay bales, gravel or other filtering material. This standard also includes sediment fences constructed of woven wire covered with a filtering fabric.

1.03 PURPOSE

A. The purpose of a sediment barrier is to prevent sediment from leaving the site and entering natural drainage ways or storm drainage systems by slowing storm water runoff and causing the deposition of sediment at the structure. Sediment barriers shall be constructed as needed to control erosion and sediment runoff.

PART 2 - MATERIALS (Not Applicable)

PART 3 - INSTALLATION

3.01 SANDBAGS

A. Sandbags shall be installed so that flow under or between bags is minimal.

B. Anchoring with steel rods shall be required if structure height exceeds two bags.

3.02 HAY OR STRAW BALES

A. Straw or hay bales shall be placed as shown on the plans. They shall be installed in a single row, lengthwise, on the contour and embedded in the soil to a depth of 4 inches.

B. Bales shall be securely anchored in place by stakes or bars driven through the bales or by other acceptable means to prevent displacement.

3.03 SEDIMENT FENCES

A. A sediment fence shall be constructed of woven wire fencing with commercial filter fabric securely attached to the upper face, and installed as shown on the plans.

B. Bottom edge of filter fabric shall be installed in a 4" x 4" trench upsole along the line of posts.

C. Fence posts of adequate strength and spaced on 6 foot center shall be installed to insure stability under maximum loading conditions.

3.04 MAINTENANCE

A. Sediment barriers are targets for vandals; frequent inspections are required. Repair or replacement shall be made promptly as needed.

B. Clean-out trapped sediment when needed.

END OF SECTION 024121

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF WORK

A. Extent of concrete work is shown on Drawings.

B. Obtain permits as required by Local, State and Federal authorities with jurisdiction over this project.

C. Furnish all materials, including water, forms, reinforcing steel, etc., and all labor required to complete all reinforced and plain concrete work shown on the drawings, as hereinafter specified, or reasonably implied, in a workmanlike and acceptable manner subject to the approval of the Landscape Architect.

D. This section includes, but is not limited to specifications for cast-in-place concrete curbs and footings.
   1. Joint fillers and sealers are specified in Section 07900.

1.03 QUALITY ASSURANCE

A. Codes and Standards:
   1. Comply with provisions of following codes, specifications and standards, except where more stringent requirements are shown or specified:
      a. ACI 318 "Building Code Requirements for Reinforced Concrete".
      b. Concrete Reinforcing Steel Institute, "Manual of Standard Practice".
      c. Standards of the American Associations of State Highway Officials; referred to in this section by the abbreviation "AASHO"

B. Work specified by reference to the published standards or specifications of a manufacturer or organization shall comply with the requirements of the specifications listed.
   1. In case of conflict between referenced specifications or standards, the one having the more stringent requirements shall govern.

C. Concrete Testing Service:
   1. The Contractor shall engage a testing laboratory to perform material evaluation tests and to test design concrete mixes.
   2. Sample cylinders shall be taken at the site under the direction of the Owner's representative.
   3. These tests are for Contractor's, Owner's and Landscape Architect's needs.

a. This does not relieve Contractor from responsibility of verifying site conditions and maintaining Contract requirements.

D. Materials and installed work may require testing and retesting, as directed by Landscape Architect, at any time during progress of work.
1. Allow free access to material stockpiles and facilities.
2. Retesting of rejected materials and installed work shall be done at Contractor's expense.

1.04 SUBMITTALS

A. Product Data:
1. Submit data for proprietary materials and items, including reinforcement and forming accessories, admixtures, patching compounds, joint systems, curing compounds, and others as requested by Landscape Architect.

B. Shop Drawings, Reinforcement:
1. Submit shop drawings for fabrication, bending, and placement of concrete reinforcement. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, diagrams of bent bars, and arrangement of concrete reinforcement.
a. Include special reinforcement required and openings through concrete structures.

C. Laboratory Test Reports:
1. Laboratory test reports for concrete materials and mix design test will be distributed to Contractor, Owner and Landscape Architect.

D. Material Certificates:
1. Provide materials certificates in lieu of materials laboratory test reports when permitted by Landscape Architect.
2. Material certificates shall be signed by manufacturer and Contractor, certifying that each material item complies with, or exceeds, specified requirements.

1.05 TRAFFIC CONTROL

A. Maintain access for vehicular and pedestrian traffic as required for other construction activities.
1. Utilize flagmen, barricades, warning signs and warning lights as required.

PART 2 - PRODUCTS

2.01 FORM MATERIALS

A. Forms for Exposed Finish Concrete:
1. Unless otherwise indicated, construct formwork for exposed concrete surfaces with plywood, metal, metal-framed plywood faced or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces.
2. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings.

3. Provide form material with sufficient thickness to withstand pressure of newly-placed concrete without bow or deflection.
   a. Patented concrete-forming systems may be used.
4. Use plywood complying with U.S.Product Standard PS-1 "B-B (Concrete Form) Plywood", Class I, Exterior Grade or better, mill-oiled and edge-sealed, with each piece bearing legible inspection trademark.

B. Forms for Unexposed Finish Concrete:
1. Form concrete surfaces which will be unexposed in finished structure with plywood, lumber, metal or other acceptable material.
2. Provide lumber dressed on at least 2 edges and one side for tight fit.

C. Form Coatings:
1. Provide commercial formulation form-coating compounds that will not bond with, stain nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces.

2.02 REINFORCING MATERIALS

A. Reinforcing Bars:
1. ASTM A 615, Intermediate Grade, deformed, galvanized or epoxy coated.
2. Unless otherwise noted, ANSI/ASTM A615, Grade 40, deformed for ties, stirrups.

B. Supports for Reinforcement:
1. Provide supports for reinforcement including bolsters, chairs, spacers and other devises for spacing, supporting and fastening reinforcing bars and welded wire fabric in place.
2. Use wire bar type supports complying with CRSI specifications, unless otherwise acceptable.
3. For slabs-on-grade, pull welded wire fabric up in slab with special hook rods as slab is placed.
4. For exposed-to-view concrete surfaces, where legs of supports are in contact with forms, provide supports with legs which are plastic protected (CRSI, Class 1) or stainless steel protected (CRSI, Class 2).

2.03 CONCRETE MATERIALS

A. Portland Cement:
1. ASTM C 175, Type I, unless otherwise acceptable to Owner’s Representative.
2. Use one brand of cement throughout project, unless otherwise acceptable to Owner’s Representative.

B. Normal Weight Aggregates:
1. ASTM C 33, and as herein specified.
2. Provide aggregates from a single source for exposed concrete.
3. For exterior exposed surfaces, do not use fine or coarse aggregates containing spalling-causing deleterious substances.

C. Water:
1. Drinkable.

D. Air-Entraining Admixture:
   1. ASTM C 260.
   2. Products: Subject to compliance with requirements, provide one of the following:
      a. "Sika Aer"; Sika Corp.
      b. "MB-VR or MB-AE"; Master Builders.
      c. "Dorex AEA"; W.R.Grace.
      d. "Edoco 2001 or 2002; Edoco Technical Products.

E. Water-Reducing Admixture:
   1. ASTM C 494, Type A, and contain not more than 0.1% chloride ions.
   2. Products: Subject to compliance with requirements, provide one of the following:
      a. "Eucon WR-75"; Euclid Chemical Co.
      b. "Pozzolith 344"; Master Builders.
      c. "Plastocrete 160"; Sika Chemical Corp.
      d. "Chemtard"; Chem-Masters Corp.

F. High-Range Water-Reducing Admixture (Super Plasticizer):
   1. ASTM C 494, Type F or Type G and contain not more than 0.1% chloride ions.
   2. Products: Subject to compliance with requirements, provide one of the following:
      a. "WRDA 19"; W.R.Grace
      b. "PSP"; Protex Industries Inc.
      c. "Super P"; Anti-Hydro.
      d. "Sikament"; Sika Chemical Corp.
      e. "Eucon 37"; Euclid Chemical Co.
      f. "PSI Super"; Gifford-Hill
      g. "Pozzolith 400"; Master Builders.

G. Calcium chloride or admixtures containing more than 0.1% chloride ions are not permitted.

2.04 RELATED MATERIALS

A. Anchor Bolts:
   1. ASTM A307

B. Liquid Membrane Forming Curing Compound:
   1. Liquid type membrane-forming curing compound complying with ASTM C 309, Type I, Class A unless other type acceptable to Landscape Architect/Engineer.
   2. Moisture loss not more than 0.055 gr./sq.cm. when applied at 200 sq.ft./gal.
   3. Products
      a. "Masterseal; Master builders
      b. "Ecocure"; Euclid Chemical Co.
      c. "Kure-N-Seal"; Sonneborn-Contech

C. Expansion Joint Materials:
   1. Comply with requirements of applicable Division 7 sections for preformed joint fillers and sealers.

D. Anti-Spalling Compound:
   1. 50% (by volume) boiled linseed oil and 50% (by volume) mineral spirits, complying with AASHTO M-233.

E. Bonding Compound:
   1. Polyvinyl acetate or acrylic base, rewettable type.

2.05 CONCRETE MIX, DESIGN, AND TESTING

A. Prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 301.
   1. If trial batch method is used, use an independent testing facility acceptable to Landscape Architect/Engineer for preparing and reporting proposed mix designs.
      a. The testing facility shall not be the same as used for field quality control testing unless otherwise acceptable to Landscape Architect/Engineer.

B. Submit written reports to Landscape Architect/Engineer of each proposed mix for each class of concrete at least 15 days prior to start of work.
   1. Do not begin concrete production until mixes have been reviewed by Landscape Architect/Engineer.

C. Design mixes to provide normal weight concrete with the following properties:
   1. Compressive strength:
      a. 4000 psi, minimum at 28 days, unless otherwise indicated.
   2. Slump Range:
      a. 6" for concrete containing HRWR admixture (super plasticizer), 5" for other concrete.
   3. Air Content:
      a. 2% to 5% for Florida.

D. During Hot Weather:
   1. During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C94 may be required.
   2. When air temperature is between 85^{o} F (30^{o} C) and 90^{o} F (32^{o} C), reduce mixing and delivery time from 1 1/2 hours to 75 minutes, and when air temperature is above 90^{o} F (32^{o} C), reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.01 SURFACE PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete.

B. Proof roll prepared subbase surface to check for unstable areas and need for additional compaction.

C. Do not begin paving work until conditions have been corrected and are ready to receive paving.

3.02 FORMS

A. Preparation of form surfaces:
   1. Clean re-used forms of concrete matrix residue, repair and patch as required to return forms to acceptable surface condition.

B. Coat contact surfaces of forms with a form-coating compound before reinforcement is placed.

C. Thin form-coating compounds only with thinning agent of type, and in amount, and under conditions of form-coating compound manufacturer's directions.
   1. Do not allow excess form-coating material to accumulate in forms or to come into contact with in-place concrete surfaces against which fresh concrete will be placed.
   2. Apply in compliance with manufacturer's instructions.

D. Design, erect, support, brace and maintain formwork to support vertical and lateral loads that might be applied until such loads can be supported by concrete structure.
   1. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation and position.

E. Design formwork to be readily removable without impact, shock or damage to cast-in-place concrete surfaces and adjacent materials.

F. Construct forms to sizes, shapes, lines and dimensions shown, and to obtain accurate alignment, location, grades, level and plumb work in finished structures.
   1. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustifications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required in work.
   2. Use selected materials to obtain required finishes.
   3. Solidly butt joints and provide back-up at joints to prevent leakage of cement paste.

G. Fabricate forms for easy removal without hammering or prying against concrete surfaces.
   1. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces.
   2. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only.
   3. Kerf wood inserts for forming keyways, reglets, recesses, and the like, to prevent swelling and for easy removal.

H. Chamfer exposed corners and edges as indicated, using wood, metal, PVC or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.

I. Form Ties:
   1. Factory-fabricated, adjustable-length, non-corrosive removable or snapoff metal form ties, shall be designed to prevent form deflection, and to prevent spalling concrete surfaces upon removal.

J. Cleaning and Tightening:
   1. Thoroughly clean forms and adjacent surfaces to receive concrete.

2. Remove chips, wood, sawdust, dirt or other debris just before concrete is placed.
3. Retighten forms and bracing after concrete placement as required to eliminate mortar leaks and maintain proper alignment.

3.03 PLACING REINFORCEMENT

A. Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials which reduce or destroy bond with concrete.

C. Accurately position, support and secure reinforcement against displacement by formwork, construction, or concrete placement operations.
   1. Locate and support reinforcing by metal chairs, concrete bricks, runners, bolsters, spacers, and hangers, as required.

D. Place reinforcement to obtain at least minimum coverage for concrete protection as shown in the Drawings.
   1. Arrange, space and securely tie bars (weld where noted) and bar supports to hold reinforcement in position during concrete placement operations.
   2. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

3.04 JOINTS

A. General:
   1. Construct expansion, contraction joint, and construction joints true-to-line with face perpendicular to surface of concrete.
   2. Construct transverse joints at right angles to the centerline, unless otherwise indicated.

B. When joining existing structures, place transverse joints to align with previously placed joints, unless otherwise indicated.

C. Contraction Joints:
   1. Provide contraction (weakened-plane) joints, sectioning concrete into areas shown on drawings.
   2. Locate so as not to impair the strength and appearance of the structure, as acceptable by the Landscape Architect/Engineer.
   3. Tooled Joints:
      a. Form contraction joints in fresh concrete by grooving top portion with a recommended cutting tool and finishing edges with a jointer.
   4. Saw-cut Joints:
      a. Contraction joints may be cut to the proper depth with a concrete saw only as approved by the Landscape Architect.

D. Construction Joints:
   1. Place construction joints at end of placements and at locations where placement operations

are stopped for a period of more than 1/2-hour, except where such placements terminate at expansion joints.
2. Construction joints should be located so as to occur at the same location as a contraction joint.
3. Construct joints using standard metal key-way-section forms or significantly deform end of placed concrete to allow gripping of next pour.

E. Expansion Joints:
1. Place expansion joints, sectioning concrete into areas shown on drawings.
2. Locate so as not to impair the strength and appearance of the structure, as acceptable by the Landscape Architect/Engineer.

3. In addition, place expansion joints at points of contact between slabs on ground and vertical surfaces, such as column pedestals, foundation walls, grade beams and elsewhere as indicated.
4. Joint Filler and Sealant materials are specified in Division 7 sections of these specifications.
5. Removable expansion board cap (i.e. Greenstreak or equal) shall be utilized during placement of all expansion joints.

3.05 CONCRETE PLACEMENT

A. Preplacement Inspection:
1. Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast-in.
2. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work.
3. Moisten wood forms immediately before placing concrete where form coatings are not used.

B. Coordinate the installation of joint materials and moisture barriers with placement of forms and reinforcing steel.

C. Comply with ACI 304 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete", and as herein specified.
1. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness.
2. If a section cannot be placed continuously, provide construction joints as herein specified.
3. Deposit concrete as nearly as practicable to its final location to avoid segregation.
4. Form new concrete to match existing profiles where noted and make a smooth transition where the new construction work meets existing materials.
5. All surfaces shall be carefully pitched to drain and free of any low spots permitting ponding of water.
a. Pitch as directed.

D. Placing Concrete in Forms:
1. Deposit concrete in forms in horizontal layers not deeper than 24" and in a manner to avoid inclined construction joints.

2. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.

E. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping.
   1. Use equipment and procedures for consolidation of concrete in accordance with ACI recommended practices.

F. Do not use vibrators to transport concrete inside forms.
   1. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine.
   2. Place vibrators to rapidly penetrate placed layer and at least 6" into preceding layer.
   3. Do not insert vibrators into lower layers of concrete that have begun to set.
   4. At each insertion limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.

G. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.

H. Maintain reinforcing in proper position during concrete placement operations.

I. Cold Weather Placing:
   1. Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with ACI 306 and as herein specified.

   2. When air temperature has fallen to or is expected to fall below 40 deg. F (4 deg. C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg. F (20 deg. C), and not more than 80 deg. F (27 deg. C) at point of placement.

J. Do not use frozen materials or materials containing ice or snow.
   1. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

K. Do not use calcium chloride, salt and other materials containing antifreeze agents or chemical accelerators, unless otherwise accepted in mix designs.

L. Hot Weather Placing:
   1. When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.
   2. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 deg. F (32 deg. C).
      a. Mixing water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated to total amount of mixing water.
      b. Use of liquid nitrogen to cool concrete is Contractor's option.
   3. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.

a. Fog spray forms, reinforcing steel and subgrade just before concrete is placed.

M. Use water-reducing retarding admixture (Type D) when required by high temperatures, low humidity, or other adverse placing conditions.

3.06 CONCRETE FINISHING

A. General:
1. After striking-off and consolidating concrete, smooth surface by screeding and floating.
a. Use hand methods only where mechanical floating is not possible.
b. Adjust floating to compact surface and produce uniform texture.

B. After floating, test surface for trueness with a 10' straightedge.
1. Distribute concrete as required to remove surface irregularities, and refloat repaired areas to provide a continuous smooth finish.

C. Work edges of gutters, back top edge of curb, and formed joints with an edging tool, and round to 1/2" radius, unless otherwise indicated.
1. Eliminate tool marks on concrete surface.

D. After completion of floating and troweling when excess moisture or surface sheen has disappeared, complete surface finishing, as follows:
1. Exposed Concrete Paving:
a. Broom finish by drawing a medium-hair broom across concrete surface perpendicular to line of traffic.
b. Repeat operation if required to provide a texture acceptable to Landscape Architect.
c. See drawings for finish detail.

E. Protect and monitor concrete surface to guard against vandalism.
1. Do not remove forms for 24 hours after concrete has been placed.
2. After form removal, clean ends of joints and point-up any minor honeycombed areas.
3. Remove and replace areas or sections with major defects, as directed by Landscape Architect/Engineer.

3.07 CONCRETE SURFACE REPAIRS

A. Patching Defective Areas:
1. Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to Landscape Architect.
2. Cut out honeycomb, rock pockets, voids over 1/4" in any dimension, and holes left by tie rods and bolts, down to solid concrete but, in no case to a depth of less than 1".
3. Make edges of cuts perpendicular to the concrete surface.
4. Thoroughly clean, dampen with water and brush-coat the area to be patched with specified bonding agent.
5. Place patching mortar after bonding compound has dried.

B. For exposed-to-view surfaces, blend white portland cement and standard portland cement so that, when dry, patching mortar will match color surrounding.

1. Provide test areas at inconspicuous location to verify mixture and color match before proceeding with patching.
2. Compact mortar in place and strike-off slightly higher than surrounding surface.

C. Repair of exposed Formed Surfaces:
   1. Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Landscape Architect.
      a. These include surface defects, such as, cracks, spalls, air bubbles, honeycomb, rock pockets; fins and other projections on surface.
   2. Flush out form tie holes, fill with Epoxy patching cement.

D. Repair concealed formed surfaces, where possible, that contain defects that affect the durability of concrete.
   1. If defects cannot be repaired, remove and replace concrete.

E. Drill test cores where directed by Landscape Architect/Engineer, when necessary to determine magnitude of cracks or defective areas.
   1. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to pavement with epoxy adhesive.

F. Protect concrete from damage until acceptance of work.
   1. Exclude traffic from pavement for at least 14 days after placement.
   2. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.

G. Sweep concrete pavement and wash free of stains, discolorations, dirt and other foreign material just prior to final inspection.

END OF SECTION 033000

SECTION 033001 – PAVEMENT MARKING PAINT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This section includes the following:
   1. Pavement marking over concrete pavement.

1.03 RELATED SECTIONS

A. Section 02520, "Portland Cement Concrete Paving".

1.04 SUBMITTALS

A. Submit manufacturer's product specification and installation instructions for marking paint in accordance.

1.05 JOB CONDITIONS

A. Do not apply marking paint when weather is foggy or rainy, or ambient or pavement temperatures are below 40 degrees F., nor when such conditions are anticipated during eight hours after application.

PART 2 - PRODUCTS

2.01 MARKING PAINT

A. Non-bleeding pigmented copolymer latex emulsion traffic marking paint with non-volatiles by weight of not less than: 49% - White, 50% - Yellow.
   1. Fire Lanes — Yellow
   2. Parking Spaces — White
   3. Handicapped Parking Symbol — White

2.02 EQUIPMENT

A. Exterior pavements:
   1. Pressurized, self-contained paint machine capable of applying a straight line from 2 in. to 6 in. wide, with consistent coverage of a minimum of 150 sq. ft. per gallon.

PART 3 - EXECUTION

3.01 INSPECTION AND PREPARATION

A. Locate markings as shown on drawings.

1. Provide qualified technician to supervise equipment and application of markings.
2. Lay out markings using guide lines, templates, and forms.

B. Thoroughly clean surfaces free of dirt, sand, gravel, oil and other foreign materials.

C. Allow concrete to cure before painting as recommended by manufacturer of marking paint.

3.02 APPLICATION

A. Apply two coats of marking paint at rate of one gallon per 200 sq.ft. (equivalent to approximately one gallon for 450 lineal feet of 4 in. wide stripe).

B. Apply marking paint straight and uniform.

C. Apply second coat of paint after first coat has dried completely. Maintain the exact same placement of lines for second coat as first coat.

END OF SECTION 033001

SECTION 055000 – METAL FABRICATIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF THE WORK

A. The extent of miscellaneous metals includes, but is not necessarily limited to, the following:
   1. reinforcing steel
   2. tie-downs

1.03 SUBMITTALS

A. Product Data:
   1. Submit manufacturer's product specifications, handling/installation/curing instructions, and performance tested data sheets for each elastomeric product required.

PART 2 - PRODUCTS

2.01 REINFORCING STEEL

A. Grade 60 new billet or rail steel, epoxy coated or galvanized by the manufacturer.

B. This reinforcing steel shall be of American manufacture, per state requirements.

2.02 TIE-DOWN

A. General:
   1. Stainless steel eyebolt tie-down system as detailed and shown on drawings.

   3. Lawn inlet grates and frames shall be East Jordan Iron Works #1020 with type 01 beehive grate, or equal.

PART 3 - EXECUTION

3.01 GENERAL

A. Install all items per manufacturer's installation requirements or as shown on the drawings.

END OF SECTION 055000

SECTION 079200 – JOINT SEALERS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of contract, including General and Supplementary Conditions, and Division 1 specification sections, apply to the work of this section.

1.02 DESCRIPTION OF THE WORK

A. The extent of each form and type of joint sealer is indicated by provisions of this section.

B. The applications for joint sealers as work of this section include the following:
   1. Expansion, Construction and Contraction joints between concrete units.
   2. Expansion joints between masonry units.
   3. Expansion joints in horizontal concrete flatwork.

C. General Performance:
   1. Except as otherwise indicated, joint sealers are required to establish and maintain airtight and waterproof continuous seals on a permanent basis, within recognized limitations of wear and aging as indicated for each application.
   2. Failures of installed sealers to comply with this requirement will be recognized as failures of materials and workmanship.

1.03 SUBMITTALS

A. Product Data:
   1. Submit manufacturer's product specifications, handling/installation/curing instructions, and performance tested data sheets for each elastomeric product required.

1.04 JOB CONDITIONS

A. Weather Conditions:
   1. Do not proceed with installation of liquid sealants under unfavorable weather conditions.
   2. Install elastomeric sealants when temperature is in lower third of temperature range recommended by manufacturer for installation.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. General:
   1. Manufacturers listed in this article include those known to produce the indicated category of

prime joint sealer material, either as a nominally pure generic product or an as equivalent-performance modification thereof or proprietary product.

B. Manufacturer:
   1. Subject to compliance with requirements, provide products of one of the following:
   2. Manufacturers of Elastomeric Sealants (Liquid):
      a. Dow Corning Corp.; Midland, MI
      b. W.R.Meadows, Inc.; Elgin, IL
      c. Pecora Corp.; Harlesville, PA
      d. Sonneborn/Contech, Inc.; Minneapolis, MN
      e. Tremco, Inc.; Cleveland, OH
      f. Toch/Carboline Co.; St.Louis, MO

2.02 MATERIALS

A. General Sealer Performance Requirements:
   1. Provide colors indicated or, if not otherwise indicated, as selected by Landscape Architect from manufacturer's standard colors.
   2. Select materials for compatibility with joint surfaces and other indicated exposures, and except as otherwise indicated select modulus of elasticity and hardness or grade recommended by manufacturer for each application indicated.
   3. Where exposed to traffic, select nontracking materials of sufficient strength and hardness to withstand stilletto heel traffic without damage or deterioration of sealer system.

B. Miscellaneous Materials:
   1. Joint Primer/Sealer:
      a. Provide type of joint primer/sealer recommended by sealant manufacturer for joint surfaces to be primed or sealed.
   2. Sealant Backer Rod:
      a. Provide compressible rod stock of polyethylene foam, polyurethane foam, polyethylene jacketed polyurethane foam, butyl rubber foam, neoprene foam or other flexible, permanent, durable nonabsorbtive material as recommended by sealant manufacturer for compatibility with sealant.
   3. Expansion Board Cap:
      a. Provide removable cap (i.e. Zip-Strip) on all concrete flatwork expansion joints to facilitate sealant installation.
      b. Install 1/2" x 1/2" cap as integral part of all expansion joints.
      c. Remove cap immediately prior to sealant installation.

2.03 INSPECTION

A. Installer must examine substrates, (joint surfaces) and conditions under which joint sealer work is to be performed, and must notify Contractor in writing of unsatisfactory conditions.

B. Do not proceed with joint sealer work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

PART 3 - EXECUTION

3.01 JOINT PREPARATION

A. Clean joint surfaces immediately before installation of gaskets, sealants.
   1. Remove dirt, insecure coatings, moisture and other substances which could interfere with seal of sealant.
   2. Etch concrete and masonry joint surfaces as recommended by sealant manufacturer.

B. Prime or seal joint surfaces where indicated, and where recommended by sealant manufacturer.
   1. Confine primer/sealer to areas of sealant bond.
   2. Do not allow spillage or migration onto adjoining surfaces.

3.02 INSTALLATION

A. Comply with manufacturer's printed instructions except where more stringent requirements are shown or specified, and except where manufacturer's technical representative directs otherwise.

B. Set joint filler units at depth or position in joint as indicated to coordinate with other work, including installation of bond breakers, backer rods and sealants.
   1. Do not leave voids or gaps between ends of joint filler units.

C. Install sealant backer rod for liquid-applied sealants, except where shown to be omitted or recommended to be omitted by sealant manufacturer for application indicated.

D. Employ only proven installation techniques, which will ensure that sealants are deposited in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of joint bond surfaces equally on opposite sides.
   1. Except as otherwise indicated, fill sealant rabbet to a slightly concave surface, slightly below adjoining surfaces.
   2. Where horizontal joints are between a horizontal surface and vertical surface, fill joint to form a slight cove, so that joint will not trap moisture and dirt.

E. Install liquid-applied sealant to depths as shown or, if not shown, as recommended by sealant manufacturer but within the following general limitations, measured at center (thin) section of beads; (not applicable to sealants in lapped joints):
   1. For sidewalks, pavements and similar joints sealed with elastomeric sealants and subject to traffic and other abrasion and indentation exposures, fill joints to a depth equal to 75% of joint width, but neither more than 5/8" deep nor less than 3/8" deep.
   2. For normal moving joints sealed with elastomeric sealants but not subject to traffic, fill joints to a depth equal to 50% of joint width, but neither more than 1/2" deep nor less than 1/4" deep.

3.03 LOCATION OF CAULKING AND SEALANTS

A. Carefully study the drawings and furnish and install the proper materials at each point where called for on the drawings and herein, plus at all other points where sealant is essential in main

taining the continued integrity of the watertight barrier. The following listings are included as a guide only.

B. Locations of joints filled with sealants:
   1. All joints so noted in all concrete site improvements and the joint between the concrete slabs and dissimilar materials.
   2. Any other exterior joints between dissimilar materials where the joining of the two surfaces leaves a gap between the meeting materials or components as may be dictated by the various methods of construction - to make watertight.
   3. Any other exterior locations which are noted "caulked" or "sealant" and not specifically listed herein, or included in the work of any other sections of the specifications.

3.04 JOINT DESIGN

A. All sealant joints shall conform to the following criteria:
   1. No joint less than 1/4" in width or depth.
   2. Joints up to 1/2" in width shall have equal depth.
   3. Joints over 1/2" in width shall have depth equal to 1/2 the width.

B. Provide backer rod as specified to limit depth of joints.
   1. In shallow joints where use of backer rod is restricted, provide bond-breaker tape.

C. Spillage:
   1. Do not allow sealants or compounds to overflow or spill onto adjoining work, or to migrate into voids of exposed finishes.
   2. Clean adjoining surfaces by whatever means may be necessary to eliminate evidence of spillage.

D. Recess exposed edges of joint fillers slightly behind adjoining surfaces, unless otherwise shown, so that compressed units will not protrude from joints.

E. Pavement and Sidewalk Joints:
   1. Provide approved foam, bituminous and/or fiber expansion joint fillers at all areas indicated to receive an expansion joint (EJ), or as otherwise detailed.
      a. Install non-bituminous joint filler material between limestone units and any other material.
   2. Employ the use of expansion board cap to ensure proper depth of sealants.
   3. Provide multi-component polyurethane sealant on top of joint filler where indicated, and at the right-of-way lines, where new pavement meets vertical surfaces.

F. Miscellaneous Above Grade Joints (other than pavement):
   1. Provide polyurethane joint filler or backer rod, as indicated with single-component polyurethane sealant.

3.05 CURE AND PROTECTION

A. Cure sealants in compliance with manufacturer's instructions and recommendations, to obtain high early bond strength, internal cohesive strength and surface durability.

1. Advise Contractor of procedures required for cure and protection of joint sealers during construction period, so that they will be without deterioration or damage (other than normal wear and weathering) at time of substantial completion.
2. Cure and protect sealants in a manner which will minimize increases in modulus of elasticity and other accelerated aging effects.
3. Replace or restore sealants which are damaged or deteriorated during construction period.

END OF SECTION 079200

SECTION 101426 – POST AND PANEL/PYLON SIGNAGE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF WORK

A. Extent and location of each type of furnishing shown on drawings and as follows:
   1. handicap signage

1.03 QUALITY ASSURANCE

A. Manufacturing Standards -
   1. Provide each furnishing as a complete unit produced by a single manufacturer, including fittings, accessories, bases and anchorage devices as applicable.

1.04 SUBMITTALS

A. Product Data:
   1. Submit manufacturer's technical data and installation instructions for each type furnishing as follows:
      a. handicap signage,

B. Shop Drawings:
   1. Submit shop drawings of furnishings showing general layout, jointing and complete anchoring and supporting systems for:
      a. handicap signage,

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver furnishings and accessories completely identified for installation procedure.
   1. Handle and store to prevent damage or soiling.

PART 2 - PRODUCTS

2.01 FURNISHINGS

A. Exterior "Handicapped Parking" Signs:
   1. Acceptable Manufacturers:
      a. Andco Industries Corp.;
      b. Burkhart Signs, Inc.;
      c. A.S.I. Sign Systems.

2. Type:
   a. 0.125 aluminum sheet.

   b. Sign face is to be 12 inches wide by 12 inches high with one inch radius corners and is to be welded to 2 aluminum backing plates 2 by 10 by 1/4 inch thick mounted one at top and one at bottom for rigidity.
   c. Bolt through sign face and backing plate at top and bottom of sign into 2 by 2 inches by 10'-6" long, square steel post (3.65 lbs./ft.) with vandal resistant fasteners.
3. Finish:
   a. Type A-10 baked enamel by "Andco"; multi-step polyurethane finish by "Burkhart" or exterior polyurethane finish by "A.S.I.", or approved equal type of finish.
   b. Paint system is to have a 5 year warranty against peeling, cracking, crazing, or blistering.
   c. Color of sign face is to be blue.
   d. Color of post, backing plate, and back of sign is to be selected by the Architect.
4. Graphic Application:
   a. Scotchlite Type B-3, reflective unigraphics, pressure sensitive letters, and handicapped symbol.
5. Typestyle:
   a. Helvetica medium.
   b. Handicapped symbol is to be standard symbol as developed by the U.S.Dept. of Transportation;
   c. Size: plus or minus 9 inches square.

6. Installation Method:
   a. Permanent concrete foundation with post embedded in concrete - 12 inch diameter by 3'-0" deep concrete footing.
7. Shop Drawing:
   a. Shop drawing is to be done to scale of sign face as noted on the Drawings for approval prior to fabrication.
8. See Drawings for number and location of signs.
9. Comply with Americans With Disabilities Act requirements for all signage requirements, including text content.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Installation of all items shall be complete so as to provide fully operational systems unless noted otherwise.

END OF SECTION 101426

SECTION 129300 – SITE FURNISHINGS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

B. This Section includes the following:

1. Bench.
2. Picnic Table.
3. Picnic Table-Wheelchair Accessible
4. Bicycle Rack.
5. Recycle Trash Receptacle.
6. Trash Receptacles.
7. Drinking Fountain.
8. Family Grill.
9. Group Grill.
10. Detectable Warning Surface.
11. Parking Bumpers.
12. Hot Coal Bin.
13. Bollards.

1.03 QUALITY ASSURANCE

A. Manufacturing Standards -
   1. Provide each furnishing as a complete unit produced by a single manufacturer, including fittings, accessories, bases and anchorage devices as applicable.

1.04 SUBMITTALS

A. Product Data:
   1. Submit manufacturer's technical data and installation instructions for each type furnishing as follows:

1. Bench.
2. Picnic Table.
3. Picnic Table-Wheelchair Accessible
4. Bicycle Rack.
5. Recycle Trash Receptacle.
6. Trash Receptacles.

7. Drinking Fountain.
8. Family Grill.
9. Group Grill.
10. Detectable Warning Surface.
11. Parking Bumpers.
12. Hot Coal Bin.
13. Bollards.

B. Shop Drawings:
1. Submit shop drawings of furnishings showing general layout, jointing and complete anchoring and supporting systems for:

a. Bench.
b. Picnic Table.
c. Picnic Table-Wheelchair Accessible
d. Bicycle Rack.
e. Recycle Trash Receptacle.
f. Trash Receptacles.
g. Drinking Fountain.
h. Family Grill.
i. Group Grill.
j. Detectable Warning Surface.
k. Parking Bumpers.
l. Hot Coal Bin.
m. Bollards.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver furnishings and accessories completely identified for installation procedure.
1. Handle and store to prevent damage or soiling.

PART 2 - PRODUCTS

2.01 FURNISHINGS

A. Bench:
1. Manufacturer: Wabash Valley
P.O. Drawer 330
Dunkirk, MD 20754
Phone: 301.855.8300 / Fax: 410.251.7579
www.wabashvalley.com
2. Unit Type:
a. Valley Estate Series, Model ES-420 D, 6’ bench with back. Diamond perforated welded wire. Surface mount. Black in color. Provide this bench or approved equal.

3. Installation:
   a. Install as shown on plans and in accordance with manufacturer's instructions.
   b. Provide standard colors and finishes for Landscape Architect to select.

B. Picnic Table:
1. Manufacturer: Wabash Valley
   P.O. Drawer 330
   Dunkirk, MD 20754
   Phone: 301.855.8300 / Fax: 410.251.7579
   www.wabashvalley.com

2. Unit Type:
   a. Signature Series, Model # SG111 D, 8’ table with 2-3/8” legs, diamond perforated welded wire, Surface mount adapter Model # SG135. Black in color. Provide this table or or approved equal.
3. Installation:
   a. Install as shown on plans and in accordance with manufacturer's instructions.
   b. Provide standard colors and finishes for Landscape Architect to select.

C. Picnic Table-Wheelchair Accessible:
1. Manufacturer: Wabash Valley
   P.O. Drawer 330
   Dunkirk, MD 20754
   Phone: 301.855.8300 / Fax: 410.251.7579
   www.wabashvalley.com
2. Unit Type:
   a. Signature Series, Model # SG111 D, 8’ ADA table with 2-3/8” legs, diamond perforated welded wire, Surface mount adapter Model # SG135. Black in color. Provide this table or approved equal.
3. Installation:
   a. Install as shown on plans and in accordance with manufacturer's instructions. Table to meet ADA regulations.
   b. Provide standard colors and finishes for Landscape Architect to select.

D. Bicycle Rack:
1. Manufacturer: DuMor, Inc.
   P.O. Box 142
   Mifflintown, PA 17059
   Phone: 717.436.2106
   Fax: 717.436.9839
   www.dumor.com

2. Unit Type:
   a. Loop bike rack Model # 125-40 (125 Series), surface mount, double powder-coated black in color. Bike rack to be installed on concrete pad. Provide this bike rack or approved equal.
3. Installation:
   a. Install as shown on plans and in accordance with manufacturer's instructions.
   b. Provide standard colors and finishes for Landscape Architect to select.

E. Recycle Trash Receptacle:
   1. Manufacturer: Wabash Valley
      P.O. Drawer 330
      Dunkirk, MD 20754
      Phone: 301.855.8300 / Fax: 410.251.7579
      www.wabashvalley.com

   2. Unit Type:
      a. Model # LR300 D, 32 gallon receptacle. Diamond perforated welded wire with recycle flat top lid Model # DT101 N blue in color and 32 gallon liner Model # LR310N. Surface mount Model # LR105. Black in color. Provide this trash receptacle or approved equal.

   3. Installation:
      a. Install as shown on plans and in accordance with manufacturer's instructions.
      b. Provide standard colors and finishes for Landscape Architect to select.

F. Trash Receptable:
   1. Manufacturer: Wabash Valley
      P.O. Drawer 330
      Dunkirk, MD 20754
      Phone: 301.855.8300 / Fax: 410.251.7579
      www.wabashvalley.com

   2. Unit Type:
      a. Model # LR300 D, 32 gallon receptacle. Diamond perforated welded wire with dome top lid Model # DT100 N and 32 gallon liner Model # LR310N. Surface mount Model # LR105. Black in color. Provide this receptacle or approved equal.

   3. Installation:
      a. Install as shown on plans and in accordance with manufacturer's instructions.
      b. Provide standard colors and finishes for Landscape Architect to select.

G. Drinking Fountain:
   1. Manufacturer: Most Dependable Fountains
      5705 Commander Drive
      Arlington, TN 38002
      Phone: 800.552.6331 / Fax: 901.867.4008
      www.mostdependablefountains.com

   2. Unit Type:
      a. Model # 41018SM, ADA Compliant, chilled drinking fountain with stainless steel surface carrier, surface mount. Black in color. Provide this drinking fountain or approved equal.

   3. Installation:

a. Install as shown on plans and in accordance with manufacturer's instructions.
b. Provide standard colors and finishes for Landscape Architect to select.

H. Family Grill
1. Manufacturer: Kay Park
1301 Pine Street
Jonesville, IA 50647
Phone: 319.987.2313 / Fax: 319.987.2900
www.kaypark.com

2. Unit Type:
a. Model # SB16, vandal resistant pedestrian grill, surface mount. Provide this grill or approved equal.

3. Installation:
a. Install as shown on plans and in accordance with manufacturer's instructions.
b. Provide standard colors and finishes for Landscape Architect to select.

I. Group Grill
1. Manufacturer: Kay Park
1301 Pine Street
Jonesville, IA 50647
Phone: 319.987.2313 / Fax: 319.987.2900
www.kaypark.com

2. Unit Type:
a. Model # SB3628 U, vandal resistant pedestrian grill, surface mount. Provide this grill or approved equal.

3. Installation:
a. Install as shown on plans and in accordance with manufacturer's instructions.
b. Provide standard colors and finishes for Landscape Architect to select.

J. Detectable warning surface:
1. Manufacturer: ADA Solutions, Inc.
One Survey Circle – 2nd Floor
North Billerica, Massachusetts 01862
Phone: 1.800.372.0519
Fax: 978.262.9125
www.adatile.com

2. Unit Type:
a. Composite Panel Paver System, Cast-in-place 24”x36” paver unit
b. Submit manufacturer’s standard selection.
c. Provide this warning surface or approved equal..

3. Installation:
a. Install in accordance with manufacturer's instructions.

b. Depth of product: 1-1/2".
c. Provide standard colors and finishes for Landscape Architect to select.

K. Parking Bumpers:
1. Type; 2,500-psi compressive strength precast, air-entrained concrete, approximately 6 inches high, 9 inches wide, and 7 feet long.
a. Provide chamfered corners and drainage slots on underside.
2. Installation:
a. Secure wheel stops to hot-mixed asphalt surface with not less than two 3/4-inch-diameter galvanized steel dowels embedded in precast concrete at 1/3 points.
b. Size length of dowel to penetrate at least 1/2 hot-mixed asphalt depth.

J. Hot Coal Bin:
1. Manufacturer: Pilot Rock
1301 Pine Street
Jonesville, IA 50647
Phone: 319.987.2313 / Fax: 319.987.2900
www.kaypark.com

2. Unit Type:
a. Model # HCB/B-1 hot coal bin (23" x 23" x 32-1/2") with 32-gallon galvanized steel can Model # CNG-2310 C with brass padlock Model # PL-1 or approved equal. Hot coal bin to be mounted on concrete slab with concrete anchors Model # BR-4HSA. Provide this hot coal bin or approved equal.

3. Installation:
a. Install as shown on plans and in accordance with manufacturer's instructions.
b. Provide standard colors and finishes for Landscape Architect to select.

K. Bollards:
1. Manufacturer: Bollards to be provided to contractor by Manatee County per their standard.

2. Installation:
a. Per County instructions for direct burial or approved equal.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Installation of all items shall be complete so as to provide fully operational systems unless noted otherwise.

END OF SECTION 129300

SECTION 311000 - SITE CLEARING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF WORK

A. Extent of site demolition is shown on Drawings.

B. Obtain permits as required by Local, State and Federal authorities with jurisdiction over this project.

C. Demolition work includes, but is not limited to:
1. Protection of existing trees and all other items indicated to remain in place.
2. Salvage of items noted to be returned to Owner or relocated.
3. Removal and/or relocation of existing trees and other vegetation, as required or noted.
4. Clearing and grubbing.
5. Removal of below-grade foundations and site improvements to depth to avoid conflict with new construction or site work.
6. Protection of site work and adjacent structures.
7. Disconnection, capping and removal of utilities as noted.
8. Pollution control during demolition.
9. Removal and legal disposal of materials.

1.03 JOB CONDITIONS

A. Existing Utilities:
1. Locate existing underground utilities in areas of work prior to beginning of work. If utilities are to remain in place, provide adequate means of support and protection during demolition operations.

B. Coordination:
1. Prior to commencement of demolition, notify all affected utility company representatives, as well as the Owner. Coordinate shut-off, capping and continuation of utility services as required.

C. Traffic:
1. Conduct demolition operations and removal of debris to insure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
2. Do not close or obstruct streets, walks or other occupied or used facilities without permission from authorities having jurisdiction.
3. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

D. Protections:
   1. Ensure safe passage of persons around areas of demolition. Conduct operations to prevent injury to adjacent buildings, structures, other facilities and persons.
   2. Remove all materials in a manner that will prevent the spread of dust. If necessary, dampen debris with water.
   3. Erect temporary barriers around areas where demolition occurs to prevent the spread of dust and debris.

   4. Provide temporary fences, barricades, coverings, or other protections to preserve existing items indicated to remain and to prevent injury or damage to person or property. Apply protections to adjacent properties as required.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 SITE CLEARING

A. General:
   1. Remove turf and other vegetation, improvements, or obstructions interfering with installation of new construction.

B. Existing Soil:
   1. Existing soil is defined as a sandy surface soil found in a depth of up to 6" deep.
      a. Satisfactory soil is reasonably free of subsoil, clay lumps, stones, and other objects over 2" in diameter, and without weeds, roots, and other objectionable material.
   2. Strip soil to whatever depths encountered in a manner to prevent intermingling with underlying subsoil or other objectionable material.
      a. Remove heavy growths of grass from areas before stripping.
      b. Where trees are indicated to be left standing, stop soil stripping a sufficient distance to prevent damage to main root system.
   3. Stockpile soil in storage piles where directed. Construct storage piles to freely drain surface water. Cover storage piles if required to prevent wind-blown dust.

C. Clearing and Grubbing:
   1. Clear site of all vegetation, except for those indicated to be left standing. Trees and vegetation not noted to be saved are to be removed.
   2. Completely remove stumps, roots, and other debris protruding through the ground surface.
   3. Use only hand methods for grubbing inside drip line of trees indicated to be left standing.

D. Relocation of existing trees:
   1. Employ standard nursery transplanting procedures utilizing an 84" tree spade, minimum, as necessary.
   2. Protect all vegetation from damage.

3. All relocated plant material shall be warranted for healthy growth and survival for a period of one year beyond relocation.
4. Reset as shown on plans or as dictated by Landscape Architect.

3.02 DEMOLITION

A. Work required: Perform all operations of demolition, do all cutting and patching necessary to join new work to existing work, and do all necessary patching and repairing of existing conditions to all existing surfaces where new work is scheduled and/or noted.
   1. Various items of existing construction may interfere with the proposed work. When such items require minor changes in existing work to accomplish the new work, the Contractor affected shall change such items as required at no extra cost to the Owner.
   2. When the items to be removed or changed tie into the new work, the Contractor shall do whatever patching is necessary to the existing items to make the appearance of the reworked areas the same as the original.

3.03 PROTECTION OF EXISTING IMPROVEMENTS

A. Provide protections necessary to prevent damage to existing improvements indicated to remain in place.
   1. Protect improvements on adjoining properties and on Owner's property.
   2. Restore damaged improvements to their original condition, as acceptable to parties having jurisdiction.

3.04 PROTECTION OF EXISTING TREES AND VEGETATION

A. General:
   1. Protect existing trees and other vegetation indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning and bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within dripline, excess foot or vehicular traffic, or parking of vehicles within dripline.
   2. Provide temporary guards to protect trees and vegetation to be left standing.
   3. Water trees and other vegetation to remain within limits of contract work as required to maintain their health during course of construction operations.
   4. Provide protection for roots over 1-1/2" diameter cut during construction operations. Coat cut faces with an emulsified asphalt, or other acceptable coating, formulated for use on damaged plant tissues. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.
   5. Repair or replace trees and vegetation indicated to remain which are damaged by construction operations, in a manner acceptable to Landscape Architect/Engineer. Employ licensed arborist to repair damages to trees and shrubs.
   6. Replace trees which cannot be repaired and restored to full growth status, as determined by arborist.

3.05 DAMAGES

A. Promptly repair damages caused to adjacent facilities by demolition operations at no cost to Owner.

3.06 UTILITY SERVICES

A. Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations.

3.07 RELOCATED ITEMS

A. Carefully remove items indicated to be salvaged and relocated. Store items, at Contractor's premises, until new construction permits its relocation.

3.08 SALVABLE IMPROVEMENTS

A. Carefully remove items indicated to be salvaged, and store on Owner's premises where indicated or directed.

3.09 REUSE OF EXISTING GRAVEL

A. Existing gravel pavements and bases indicated to be removed may be re-used for proposed pavement bases and other backfill needs if authorized by Landscape Architect and the existing material meets all backfill/base requirements as set out in these specifications.

3.10 REMOVAL OF VEGETATION

A. Remove only the trees, shrubs, and other vegetation as specifically indicated on plans. Completely remove stumps, roots, and other debris protruding through ground surface. Large stumps shall be ground to a minimum of 24" below finish grade. Use only hand methods for grubbing inside dripline of trees indicated to be left standing.
   1. Fill depressions caused by vegetation removal operations with satisfactory soil material, unless further excavation or earthwork is indicated.
   2. Place fill material in horizontal layers not exceeding 6" loose depth, and thoroughly compact to a density equal to adjacent original ground.

3.11 REMOVAL OF IMPROVEMENTS

A. Remove existing above-grade and below-grade improvements necessary to permit construction, and other work as indicated.
   1. Remove upper three feet of drainage structures noted to be abandoned. Plug all remaining non-functional drainage lines with concrete or masonry unless noted otherwise. Fill remaining hole with compacted stone to finish subgrade.
   2. Abandonment or removal of certain underground pipe or conduits may be shown on drawings, and is included under work of those sections. Removal of abandoned underground piping or conduit interfering with construction is included under this section.

   3. Remove below-grade foundations and footings as noted on the drawings. Backfill these areas as instructed under backfill provisions of Earthwork section.

3.12 POLLUTION CONTROL

A. Comply with all requirements of local and state authorities having jurisdiction over pollution control issues and as noted on the drawings.

3.13 DISPOSAL OF WASTE MATERIALS

A. Remove all existing fill, trash, and debris to undisturbed soil.
   1. Remove any trash and debris encountered to undisturbed soil.
   2. Burning is not permitted on Owner's property.
   3. Remove waste materials and unsuitable and excess soil from Owner's property and dispose of off site in legal manner.

END OF SECTION 311000

SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Preparing subgrades for slabs-on-grade, walks, pavements, turf and grasses and plants.
2. Excavating and backfilling for structures.
3. Drainage course for concrete slabs-on-grade.
4. Subbase course for concrete walks and pavements.
5. Subbase course and base course for asphalt paving.
6. Subsurface drainage backfill for trenches.
7. Excavating and backfilling trenches for utilities and pits for buried utility structures.

B. Related Sections:
1. Division 03 Section "Cast-in-Place Concrete" for granular course if placed over vapor retarder and beneath the slab-on-grade.
2. Division 31 Section "Site Clearing" for site stripping, grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.

1.3 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
2. Bulk Excavation: Excavation more than 10 feet (3 m) in width and more than 30 feet (9 m) in length.
3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.

G. Fill: Soil materials used to raise existing grades.

H. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material 3/4 cu. yd. (0.57 cu. m) or more in volume that exceed a standard penetration resistance of 100 blows/2 inches (97 blows/50 mm) when tested by a geotechnical testing agency, according to ASTM D 1586.

I. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

J. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.

K. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.

L. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.4 SUBMITTALS

A. Product Data: For each type of the following manufactured products required:

1. Geotextiles.
2. Controlled low-strength material, including design mixture.
3. Warning tapes.

B. Samples for Verification: For the following products, in sizes indicated below:

1. Geotextile: 12 by 12 inches (300 by 300 mm).
2. Warning Tape: 12 inches (300 mm) long; of each color.

C. Qualification Data: For qualified testing agency.

D. Material Test Reports: For each on-site and any borrow soil material proposed for fill and backfill as follows:

1. Classification according to ASTM D 2487.
2. Laboratory compaction curve according to ASTM D 698

1.5 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

B. Preexcavation Conference: Conduct conference at Project site.

1.6 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth moving operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.

B. Utility Locator Service: Notify Sunshine and City of Bradenton for area where Project is located before beginning earth moving operations.

C. Do not commence earth moving operations until temporary erosion- and sedimentation-control measures, specified in Division 31 Section "Site Clearing," are in place.

D. Do not commence earth moving operations until plant-protection measures specified in Division 01 Section "Temporary Tree and Plant Protection" are in place.

E. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

F. Do not direct vehicle or equipment exhaust towards protection zones.

G. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soils: Soil Classification Groups A-1, A-2-4, A-2-5, and A-3 according to AASHTO M 145, or a combination of these groups; free of rock or gravel larger than 3 inches (75 mm) in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

C. Unsatisfactory Soils: Soil Classification Groups A-2-6, A-2-7, A-4, A-5, A-6, and A-7 according to AASHTO M 145, or a combination of these groups.

1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.

E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 8 percent passing a No. 200 (0.075-mm) sieve.

F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.

G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch (25-mm) sieve and not more than 8 percent passing a No. 200 (0.075-mm) sieve.

H. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch (37.5-mm) sieve and 0 to 5 percent passing a No. 8 (2.36-mm) sieve.

I. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch (25-mm) sieve and 0 to 5 percent passing a No. 4 (4.75-mm) sieve.

J. Sand: ASTM C 33; fine aggregate.

K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 GEOTEXTILES

A. Subsurface Drainage Geotextile: Nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:

1. Survivability: Class 2; AASHTO M 288.
2. Grab Tensile Strength: 157 lbf (700 N); ASTM D 4632.
3. Sewn Seam Strength: 142 lbf (630 N); ASTM D 4632.
4. Tear Strength: 56 lbf (250 N); ASTM D 4533.
5. Puncture Strength: 56 lbf (250 N); ASTM D 4833.
6. Apparent Opening Size: No. 40 (0.425-mm) sieve, maximum; ASTM D 4751.
7. Permittivity: 0.5 per second, minimum; ASTM D 4491.
8. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.

B. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters; with elongation less than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:

1. Survivability: Class 2; AASHTO M 288.
2. Grab Tensile Strength: 247 lbf (1100 N); ASTM D 4632.
3. Sewn Seam Strength: 222 lbf (990 N); ASTM D 4632.
4. Tear Strength: 90 lbf (400 N); ASTM D 4533.
5. Puncture Strength: 90 lbf (400 N); ASTM D 4833.
6. Apparent Opening Size: No. 60 (0.250-mm) sieve, maximum; ASTM D 4751.
7. Permittivity: 0.02 per second, minimum; ASTM D 4491.
8. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.

2.3 CONTROLLED LOW-STRENGTH MATERIAL

A. Controlled Low-Strength Material: Self-compacting, low-density, flowable concrete material produced from the following:

1. Portland Cement: ASTM C 150, Type I.
2. Fly Ash: ASTM C 618, Class C or F.
3. Normal-Weight Aggregate: ASTM C 33, 3/8-inch (10-mm) nominal maximum aggregate size.
4. Foaming Agent: ASTM C 869.
5. Water: ASTM C 94/C 94M.
6. Air-Entraining Admixture: ASTM C 260.

B. Produce low-density, controlled low-strength material with the following physical properties:

1. As-Cast Unit Weight: 36 to 42 lb/cu. ft. (576 to 675 kg/cu. m) at point of placement, when tested according to ASTM C 138/C 138M.

2. Compressive Strength: 140 psi (965 kPa) when tested according to ASTM C 495.

C. Produce conventional-weight, controlled low-strength material with 140-psi (965-kPa) compressive strength when tested according to ASTM C 495.

2.4 ACCESSORIES

A. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches (150 mm) wide and 4 mils (0.1 mm) thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches (750 mm) deep; colored as follows:

1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.

B. Protect and maintain erosion and sedimentation controls during earth moving operations.

C. Protect subgrades and foundation soils from frost. Remove temporary protection before placing subsequent materials.

3.2 DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

3.3 EXPLOSIVES

A. Explosives: Do not use explosives.

3.4 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:

    a. 24 inches (600 mm) outside of concrete forms other than at footings.
    b. 12 inches (300 mm) outside of concrete forms at footings.
    c. 6 inches (150 mm) outside of minimum required dimensions of concrete cast against grade.
    d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
    e. 6 inches (150 mm) beneath bottom of concrete slabs-on-grade.
    f. 6 inches (150 mm) beneath pipe in trenches, and the greater of 24 inches (600 mm) wider than pipe or 42 inches (1065 mm) wide.

3.5 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch (25 mm). If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
2. Pile Foundations: Stop excavations 6 to 12 inches (150 to 300 mm) above bottom of pile cap before piles are placed. After piles have been driven, remove loose and displaced material. Excavate to final grade, leaving solid base to receive concrete pile caps.
3. Excavation for Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch (25 mm). Do not disturb bottom of excavations intended as bearing surfaces.

B. Excavations at Edges of Tree- and Plant-Protection Zones:

1. Excavate by hand to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Cut and protect roots according to requirements in Division 01 Section "Temporary Tree and Plant Protection."

3.6 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.7 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches (300 mm) higher than top of pipe or conduit unless otherwise indicated.

1. Clearance: 12 inches (300 mm) each side of pipe or conduit.

C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

1. For pipes and conduit less than 6 inches (150 mm) in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
2. For pipes and conduit 6 inches (150 mm) or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.
3. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.
4. Excavate trenches 6 inches (150 mm) deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

D. Trenches in Tree- and Plant-Protection Zones:

1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.
3. Cut and protect roots according to requirements in Division 01 Section "Temporary Tree and Plant Protection."

3.8 SUBGRADE INSPECTION

A. Notify Architect when excavations have reached required subgrade.

B. If Architect determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Proof-roll subgrade below slabs and pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons (13.6 tonnes) to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph (5 km/h).
2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

D. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.

E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.9 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi (17.2 MPa), may be used when approved by Architect.

1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Architect.

3.10 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.11 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
2. Surveying locations of underground utilities for Record Documents.
3. Testing and inspecting underground utilities.
4. Removing concrete formwork.
5. Removing trash and debris.
6. Removing temporary shoring and bracing, and sheeting.
7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

B. Place backfill on subgrades free of mud or frost.

3.12 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud or frost.

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Trenches under Footings: Backfill trenches excavated under footings and within 18 inches (450 mm) of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings. Concrete is specified in Division 03 Section "Cast-in-Place Concrete."

D. Trenches under Roadways: Provide 4-inch- (100-mm-) thick, concrete-base slab support for piping or conduit less than 30 inches (750 mm) below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of 4 inches (100 mm) of concrete before backfilling or placing roadway subbase course. Concrete is specified in Division 03 Section "Cast-in-Place Concrete."

E. Backfill voids with satisfactory soil while removing shoring and bracing.

F. Place and compact initial backfill of subbase material, free of particles larger than 1 inch (25 mm) in any dimension, to a height of 12 inches (300 mm) over the pipe or conduit.

1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.

G. Controlled Low-Strength Material: Place initial backfill of controlled low-strength material to a height of 12 inches (300 mm) over the pipe or conduit. Coordinate backfilling with utilities testing.

H. Place and compact final backfill of satisfactory soil to final subgrade elevation.

I. Controlled Low-Strength Material: Place final backfill of controlled low-strength material to final subgrade elevation.

J. Install warning tape directly above utilities, 12 inches (300 mm) below finished grade, except 6 inches (150 mm) below subgrade under pavements and slabs.

3.13 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory soil material.
3. Under steps and ramps, use engineered fill.
4. Under building slabs, use engineered fill.
5. Under footings and foundations, use engineered fill.

C. Place soil fill on subgrades free of mud or frost.

3.14 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.15 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 8 inches (200 mm) in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches (100 mm) in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698:

1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches (300 mm) of existing subgrade and each layer of backfill or fill soil material at 95 percent.
2. Under walkways, scarify and recompact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill soil material at 92 percent.

3. Under turf or unpaved areas, scarify and recompact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill soil material at 85 percent.
4. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

3.16 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Turf or Unpaved Areas: Plus or minus 1 inch (25 mm).
2. Walks: Plus or minus 1 inch (25 mm).
3. Pavements: Plus or minus 1/2 inch (13 mm).

C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch (13 mm) when tested with a 10-foot (3-m) straightedge.

3.17 SUBSURFACE DRAINAGE

A. Subsurface Drain: Place subsurface drainage geotextile around perimeter of subdrainage trench. Place a 6-inch (150-mm) course of filter material on subsurface drainage geotextile to support subdrainage pipe. Encase subdrainage pipe in a minimum of 12 inches (300 mm) of filter material, placed in compacted layers 6 inches (150 mm) thick, and wrap in subsurface drainage geotextile, overlapping sides and ends at least 6 inches (150 mm).

1. Compact each filter material layer to 85 percent of maximum dry unit weight according to ASTM D 698 with a minimum of two passes of a plate-type vibratory compactor.

B. Drainage Backfill: Place and compact filter material over subsurface drain, in width indicated, to within 12 inches (300 mm) of final subgrade, in compacted layers 6 inches (150 mm) thick. Overlay drainage backfill with one layer of subsurface drainage geotextile, overlapping sides and ends at least 6 inches (150 mm).

1. Compact each filter material layer to 85 percent of maximum dry unit weight according to ASTM D 698] with a minimum of two passes of a plate-type vibratory compactor.
2. Place and compact impervious fill over drainage backfill in 6-inch- (150-mm-) thick compacted layers to final subgrade.

3.18 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

A. Place subbase course and base course on subgrades free of mud or frost.

B. On prepared subgrade, place subbase course and base course under pavements and walks as follows:

1. Install separation geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
2. Place base course material over subbase course under hot-mix asphalt pavement.
3. Shape subbase course and base course to required crown elevations and cross-slope grades.
4. Place subbase course and base course 6 inches (150 mm) or less in compacted thickness in a single layer.
5. Place subbase course and base course that exceeds 6 inches (150 mm) in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches (150 mm) thick or less than 3 inches (75 mm) thick.
6. Compact subbase course and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

C. Pavement Shoulders: Place shoulders along edges of subbase course and base course to prevent lateral movement. Construct shoulders, at least 12 inches (300 mm) wide, of satisfactory soil materials and compact simultaneously with each subbase and base layer to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

3.19 DRAINAGE COURSE UNDER CONCRETE SLABS-ON-GRADE

A. Place drainage course on subgrades free of mud or frost.

B. On prepared subgrade, place and compact drainage course under cast-in-place concrete slabs-on-grade as follows:

1. Install subdrainage geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
2. Place drainage course 6 inches (150 mm) or less in compacted thickness in a single layer.
3. Place drainage course that exceeds 6 inches (150 mm) in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches (150 mm) thick or less than 3 inches (75 mm) thick.
4. Compact each layer of drainage course to required cross sections and thicknesses to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

3.20 FIELD QUALITY CONTROL

A. Special Inspections: Contractor will engage a qualified special inspector to perform the following special inspections:

1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
2. Determine that fill material and maximum lift thickness comply with requirements.
3. Determine, at the required frequency, that in-place density of compacted fill complies with requirements.

B. Allow inspector to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Architect.

D. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:

1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. (186 sq. m) or less of paved area or building slab, but in no case fewer than three tests.
2. Foundation Wall Backfill: At each compacted backfill layer, at least one test for every 100 feet (30 m) or less of wall length, but no fewer than two tests.
3. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 150 feet (46 m) or less of trench length, but no fewer than two tests.

E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.21 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, frost, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.22 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 312000

SECTION 321216 – ASPHALT PAVING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 DESCRIPTION OF WORK

A. Extent of asphalt concrete paving work is shown on drawings. Prepared aggregate subbase is specified in earthwork sections.

B. Obtain permits as required by Local, State and Federal authorities with jurisdiction over this project.

1.03 SUBMITTALS

A. Material Certificates
   1. Provide copies of materials certificates signed by material producer and Contractor, certifying that each material item complies with, or exceeds, specified requirements.

1.04 JOB CONDITIONS

A. Weather Limitations
   1. Apply tack coat only when ambient temperature is above 50° F. (10°C), and when temperature has not been below 35° F for 12 hours immediately prior to application.
   2. Do not apply when base is wet or contains an excess of moisture.
   3. Construct asphalt concrete surface course only when atmospheric temperature is above 40° F. (4°C), and when base is dry.
   4. Base course may be placed when air temperature is above 30° F. (-1°C) and rising and the temperature 3 inches below subgrade surface is 32°F (0°C) or higher.

B. Grade Control:
   1. Establish and maintain required lines and elevations.

PART 2 - PRODUCTS

2.01 GENERAL

A. Use locally available materials and gradations which exhibit a satisfactory record of previous installations.

2.02 HOT ASPHALT CONCRETE BASE

A. Meet requirements of "FDOT Standard Specifications".
   1. Coarse aggregate: #5 or #5D.
   2. Use hot asphalt concrete base mixture for base courses 2-1/2" and greater in thickness.

2.03 PREPARED AGGREGATE SUBBASE

A. Crushed concrete, compacted to 92% of maximum.

2.04 SURFACE COURSE

A. Meet requirements of "FDOT Specifications" for No. 11/12 Type Surface Mixture.

2.05 ASPHALT CEMENT

A. Comply with FDOT Specifications.

2.06 TACK COAT

A. Comply with FDOT Standard Specifications.
   1. Emulsified Asphalt, AASHTO M 140 (ASTM D 997) or M 208 (D 2397), SS-1, SS-1h, CSS-1, CSS-1h, diluted with one part water to one part emulsified asphalt.

PART 3 - EXECUTION

3.01 HAC PAVEMENT

A. The following shall comply with FDOT Standard Specifications:
   1. Surface - Type B.
   2. Base -- using coarse aggregate.
   3. Bituminous base -- 5'.

B. Execution:
   1. Remove loose material from compacted subbase surface immediately before applying prime coat.

C. Notify Contractor of unsatisfactory conditions.
   1. Do not begin paving work until deficient subbase areas have been corrected and are ready to receive paving.

3.02 TACK COAT

A. Apply to contact surfaces of previously constructed asphalt or portland cement concrete and surfaces abutting or projecting into asphalt concrete pavement.
   1. Distribute at rate of 0.05 to 0.15 gallon per square yard of surface.
   2. Allow to dry until at proper condition to receive paving.
   3. Comply with FDOT Standard Specifications.

3.03 PLACING MIX

A. General:
   1. Place asphalt concrete mixture on prepared surface, spread and strike off.
   2. Spread mixture at minimum temperature of 230° F. (110° C).
   3. Place inaccessible and small areas by hand. Place each course to required grade, cross-section, and compacted thickness.
   4. Comply with FDOT Standard Specifications.

B. Pavement Placing:
   1. Place in strips not less than 10' wide, unless otherwise acceptable to Landscape Architect/Engineer.

   2. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips.
   3. Complete base course for a section before placing surface course.

C. Joints:
   1. Make joints between old and new pavement, or between successive days work, to ensure continuous bond between adjoining work.
   2. Construct joints to have same texture, density and smoothness as other sections of asphalt concrete course.
   3. Clean contact surface and apply tack coat.

D. Rolling: - General
   1. Begin rolling when mixture will bear roller weight without excessive displacement.
   2. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.

E. Breakdown Rolling:
   1. Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge.
   2. Check surface after breakdown rolling, and repair displaced areas by loosening and filling, if required, with hot material.

F. Second Rolling:
   1. Follow breakdown rolling as soon as possible, while mixture is hot.

2. Continue second rolling until mixture has been thoroughly compacted.

G. Apply surface course material, which shall be #11 type surface mixture one-inch thick, or as noted otherwise.

H. Finish Rolling:
   1. Perform finish rolling of surface course while mixture is still warm enough for removal of roller marks.
   2. Continue rolling until roller marks are eliminated and course has attained maximum density.

I. Minimum Quality Requirements:
   1. Sampling and testing of the individual materials and the final mixture shall be performed to insure conformance with all specification requirements, continuous uniformity and proper workability of the mixture.
      a. Test samples shall be 2000 to 3000 grams in size, taken from the delivery truck or from the pavement area before compaction.
      b. Test for conformance with composition limits and the job mix formula with respect to gradation according to American Association of State Highway and Transportation Officials (AASHTO) document T27 as modified in "FDOT Standard Specifications", and in AASHTO document T30, except decantation through the No. 200 sieve will not be required in either test.
      c. Test for bitumen requirements in accordance with Florida Highway Department Division of Materials and Test.
      d. Perform one of each type test specified for materials from each delivery truck.
      e. Record temperature of material sample and air temperature each time a sample is taken.
      f. Test results shall be reported in writing to Landscape Architect and Contractor within 24 hours after tests are made. Reports of tests shall include the project identification name and number, date of asphalt concrete placement, name of testing service, and location of asphalt concrete batch in pavement.

J. Patching:
   1. Remove and replace paving areas mixed with foreign materials and defective areas.
   2. Cut-out such areas and fill with fresh, hot asphalt concrete.
   3. Compact by rolling to maximum surface density and smoothness.

K. Protection:
   1. After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

L. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.05 FIELD QUALITY CONTROL

A. General -
   1. Test in-place asphalt concrete courses for compliance with requirements for thickness and surface smoothness.
   2. Repair or remove and replace unacceptable paving as directed by Landscape Architect.

B. Thickness:
   1. In-place compacted thickness will not be acceptable if exceeding following allowable variation from required thickness.
      a. Base Course: 1/2", plus or minus.
      b. Surface Course: 1/4", plus or minus.

C. Surface Smoothness:
   1. Test finished surface of each asphalt concrete course for smoothness, using 10' straightedge applied parallel with, and at right angles to centerline of paved area. Surfaces will not be acceptable if exceeding the following tolerances for smoothness.
      a. Base Course Surface: 1/4".
      b. Wearing Course Surface: 3/16".
      c. Check surface areas at intervals as directed by Landscape Architect/Engineer.

END OF SECTION 321216

SECTION 321313 – CONCRETE PAVING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Extent of portland cement concrete paving is shown on drawings, including curbs, gutters, walkways, and pavement.

B. Prepared subbase is specified in "Earthwork" section.

C. Joint fillers and sealers are specified in Division 7.

1.03 SUBMITTALS

A. Provide samples, manufacturer's product data, test reports, and materials' certifications as required in referenced sections for concrete and joint fillers and sealers.

1.04 QUALITY ASSURANCE

A. Codes and Standards:
   1. Comply with provisions of following codes, specifications and standards and local governing regulations except where more stringent requirements are shown or specified.
      a. Florida Department of Transportation "Standard Specifications".
      b. ACI 301 "Specifications for Structural Concrete for Buildings".
      c. ACI 318 "Building Code Requirements for Reinforced Concrete".
      d. Concrete Reinforcing Steel Institute, "Manual of Standard Practice".
      e. Standards of the American Associations of State Highway Officials; referred to in this section by the abbreviation "AASHO".

B. Work specified by reference to the published standards or specifications of a manufacturer or organization shall comply with the requirements of the specifications listed.
   1. In case of conflict between referenced specifications or standards, the one having the more stringent requirements shall govern.

C. Concrete Testing Service:
   1. The Contractor shall engage a qualified testing laboratory to perform material evaluation tests and to test design concrete mixes.
   2. Sample cylinders shall be taken at the site under the direction of the Owner’s representative.
      a. These tests are for Contractor’s, Owner’s and Landscape Architect’s needs.
      b. This does not relieve Contractor from responsibility of verifying material quality and maintaining Contract requirements.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Forms:
   1. Steel, wood, or other suitable material of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal.
   2. Use straight forms, free of distortion and defects.
   3. Use flexible spring steel forms to form radius bends as required.
   4. Coat forms with a nonstraining form release agent that will not discolor or deface surface of concrete.

B. Fiber Reinforcement (in lieu of Welded Wire Mesh):
   1. Provide fiber reinforcement in compliance with FDOT Standard Specifications.

C. Reinforcing Bars:
   1. Deformed steel bars, ASTM A 615, Grade 60 epoxy-coated.

D. Joint Dowel Bars:
   1. Plain steel bars, ASTM A 615, Grade 60, epoxy-coated.
   2. Cut bars true to length with ends square and free of burrs.

E. Concrete Materials:
   1. Portland Cement:
      a. ASTM C 175, Type I, unless otherwise acceptable to Landscape Architect.
      b. Use one brand of cement throughout project, unless otherwise acceptable to Landscape Architect.
   2. Normal Weight Aggregates:
      a. ASTM C 33, and as herein specified.
      b. Provide aggregates from a single source for exposed concrete.
      c. For exterior exposed surfaces, do not use fine or coarse aggregates containing spalling-causing deleterious substances.
   3. Water:
      a. Drinkable.
   4. Air-Entraining Admixture:
      a. ASTM C 260.
      b. Products: Subject to compliance with requirements, provide one of the following:
         i. "Sika Aer"; Sika Corp.
         ii. "MB-VR or MB-AE"; Master Builders.
         iii. "Dorex AEA"; W.R.Grace.
         iv. "Edoco 2001 or 2002; Edoco Technical Products.
   5. Water-Reducing Admixture:
      a. ASTM C 494, Type A, and contain not more than 0.1% chloride ions.
      b. Products: Subject to compliance with requirements, provide one of the following:
         i. "Eucon WR-75"; Euclid Chemical Co.
         ii. "Pozzolith 344"; Master Builders.
         iii. "Plastocrete 160"; Sika Chemical Corp.
         iv. "Chemtard"; Chem-Masters Corp.

6. High-Range Water-Reducing Admixture (Super Plasticizer):
   a. ASTM C 494, Type F or Type G and contain not more than 0.1% chloride ions.
   b. Products: Subject to compliance with requirements, provide one of the following:
      i. "WRDA 19"; W.R.Grace
      ii. "PSP"; Protex Industries Inc.
      iii. "Super P"; Anti-Hydro.
      iv. "Sikament"; Sika Chemical Corp.
      v. "Eucon 37"; Euclid Chemical Co.
      vi. "PSI Super"; Gifford-Hill
      vii. "Pozzolith 400"; Master Builders.
7. Calcium chloride or admixtures containing more than 0.1% chloride ions are not permitted.

F. Expansion Joint Materials:
   1. Comply with requirements of applicable Division 7 sections for preformed expansion joint fillers and sealers.

G. Liquid-Membrane Forming and Sealing Curing Compound:
   1. Comply with ASTM C 309, Type I, Class A unless other type acceptable to Architect.
      a. Moisture loss no more than 0.055 gr./sq. cm. when applied to 200 sq.ft./gal.
   2. Products: Subject to compliance with requirements, provide one of the following:
      a. "Masterseal"; Master Builders
      b. "J-20 Acrylic Cure"; Dayton Superior
      c. "AR-30"; W.R.Meadows
      d. "Spartan-Cote"; The Burke Co.
      e. "Kure-N-Seal"; Sonneborn-Contech.
      f. "L&M Cure"; L & M Construction Chemicals
      g. "Hardtop"; Gifford-Hill.

H. Bonding Compound: Polyvinyl acetate or acrylic base, rewettable type.
   1. Products: Subject to compliance with requirements, provide one of the following:
      a. "J-40 Bonding Agent"; Dayton Superior Corp.
      b. "Weldcrete"; Larsen Products
      c. "Intralok"; W.R.Meadows
      d. "Everbond"; L & M Construction Chemicals
      e. "EucoWeld"; Euclid Chemical Co.
      f. "Hornweld"; A.C.Horn
      g. "Sonocrete"; Sonneborn-Contech
      h. "Acrylic Bondcrete"; The Burke Co.

I. Epoxy Adhesive:
   1. ASTM C 881, 2-component material suitable for use on dry or damp surfaces.
   2. Provide material "Type", "Grade", and "Class" to suit project requirements.
   3. Products: Subject to compliance with requirements, provide one of the following:
      a. "Sikadur Hi-Mod"; Sika Chemical Corp.
      b. "Euco Epoxy 463 or 615"; Euclid Chemical Co..
      c. "Patch and Bond Epoxy"; The Burke Co.

J. Expansion Joint Cap:
   1. Removable joint filler cover as provided by Greenstreak or W.R.Meadows, Inc. (Sealtight Snap Cap) or equal.

2.02 CONCRETE MIX, DESIGN, AND TESTING

A. Prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 301.
   1. If trial batch method is used, use an independent testing facility acceptable to Landscape Architect/Engineer for preparing and reporting proposed mix designs.
      a. The testing facility shall not be the same as used for field quality control testing unless otherwise acceptable to Landscape Architect/Engineer.

B. Design mix to produce normal-weight concrete consisting of portland cement, aggregate, water-reducing or high-range water-reducing admixture (superplasticizer), air-entraining admixture, and water to produce the following properties:
   1. Compressive Strength (28-Day): 4000 psi, minimum at 28 days, unless otherwise indicated.
   2. Slump Limit at Point of Placement: 8 inches minimum for concrete containing high-range water-reducing admixture (superplasticizer); 3 inches for other concrete.
   3. Air Content: 6.0 percent, +/- 1%.
   4. Water-cement Ratio: 0.45.

C. Submit written reports to Landscape Architect/Engineer of each proposed mix for each class of concrete at least 15 days prior to start of work.
   1. Do not begin concrete production until mixes have been reviewed by Landscape Architect/Engineer.

D. During Hot Weather:
   1. During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C94 may be required.
   2. When air temperature is between 85^{o} F (30^{o} C) and 90^{o} F (32^{o} C), reduce mixing and delivery time from 1 1/2 hours to 75 minutes, and when air temperature is above 90^{o} F (32^{o} C), reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.01 SURFACE PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete.

B. Proof-roll prepared subbase surface to check for unstable areas and verify need for additional compaction. Do not begin paving work until such conditions have been corrected and are ready to receive paving.

3.02 FORM CONSTRUCTION

A. Set forms to required grades and lines, braced and secured. Install forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after concrete placement.

B. Check completed formwork and screeds for grade and alignment to following tolerances:
   1. Top of Forms: Not more than 1/8 inch in 10 feet.
   2. Vertical Face on Longitudinal Axis: Not more than 1/4 inch in 10 feet.

C. Clean forms after each use and coat with form release agent as required to ensure separation from concrete without damage.
   1. Slope step treads at 1/4 inch per foot to drain.

3.03 REINFORCEMENT

A. Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials which reduce or destroy bond with concrete.

C. Accurately position, support and secure reinforcement against displacement by formwork, construction, or concrete placement operations.
   1. Locate and support reinforcing by metal chairs, concrete bricks, runners, bolsters, spacers, and hangers, as required.

D. Place reinforcement to obtain at least minimum coverage for concrete protection.
   1. Arrange, space and securely tie bars (weld where notes) and bar supports to hold reinforcement in position during concrete placement operations.
   2. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

3.04 CONCRETE PLACEMENT

A. Preplacement Inspection:
   1. Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast-in.
   2. Do not place concrete until subbase and forms have been checked for line and grade.
   3. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work.
   4. Moisten forms immediately before placing concrete where form coatings are not used.
   5. Moisten subbase if required to provide a uniform dampened condition at time concrete is placed.
   6. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

B. Coordinate the installation of joint materials and moisture barriers with placement of forms and reinforcing steel.

C. Comply with ACI 304 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete", and as herein specified.
   1. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness.
   2. If a section cannot be placed continuously, provide construction joints as herein specified.
   3. Deposit concrete as nearly as practicable to its final location to avoid segregation.
   4. Form new concrete to match existing profiles where noted and make a smooth transition where the new construction work meets existing materials.
   5. All surfaces shall be carefully pitched to drain and free of any low spots permitting ponding of water.
      a. Pitch as directed.

D. Place concrete by methods that prevent segregation of mix.
   1. Consolidate concrete along face of forms and adjacent to transverse joints with internal vibrator.
   2. Keep vibrator away from joint assemblies, reinforcement, or side forms.
   3. Use only square-faced shovels for hand-spreading and consolidation.
   4. Consolidate with care to prevent dislocation of reinforcing, dowels, and joint devices.

E. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.

F. Use bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

G. Maintain reinforcing in proper position during concrete placement operations.

H. Transverse joints as far as possible. If interrupted for more than 1/2 hours, place a construction joint.

I. When adjacent pavement lanes are placed in separate pours, do not operate equipment on concrete until pavement has attained sufficient strength to carry loads without injury.

J. Cold Weather Placing:
   1. Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with ACI 306 and as herein specified.
   2. When air temperature has fallen to or is expected to fall below 40 deg. F (4 deg. C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg. F (20 deg. C), and not more than 80 deg. F (27 deg. C) at point of placement.

K. Do not use frozen materials or materials containing ice or snow.
   1. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

L. Do not use calcium chloride, salt and other materials containing antifreeze agents or chemical accelerators, unless otherwise accepted in mix designs.

M. Hot Weather Placing:
1. When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.
2. Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 deg. F (32 deg. C).
   a. Mixing water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated to total amount of mixing water.
   b. Use of liquid nitrogen to cool concrete is Contractor's option.
3. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.
   a. Fog spray forms, reinforcing steel and subgrade just before concrete is placed.

N. Use water-reducing retarding admixture (Type D) when required by high temperatures, low humidity, or other adverse placing conditions.

3.05 JOINTS

A. General:
1. Construct contraction, construction, and isolation joints true to line with faces perpendicular to surface plane of concrete.
2. Construct transverse joints at right angles to the centerline, unless indicated otherwise.
3. When joining existing paving, place transverse joints to align with previously placed joints, unless indicated otherwise.

B. Weakened-Plane (Contraction) Joints:
1. Provide weakened-plane (contraction) joints, sectioning concrete into areas as shown on Drawings.
2. Construct weakened-plane joints for a depth equal to at least 1/4 of the concrete thickness, but not less than 2", as follows:
   a. Tooled Joints:
      i. Form weakened-plane joints in fresh concrete by grooving and finishing each edge of joint with a radiused jointer tool. (To be used for sidewalks only.)
   b. Sawed Joints:
      i. Form weakened-plane joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades.
      ii. Cut 1/8-inch-wide joints into hardened concrete when cutting action will not tear, abrade, or otherwise damage surface and before development of random contraction cracks.

C. Construction Joints:
1. Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than 1/2 hour, unless paving terminates at isolation joints.
2. Construct joints as shown or, if not shown, use standard metal keyway-section forms.

3. Where load transfer-slip dowel devices are used, install so that one end of each dowel bar is free to move.

D. Expansion Joints:
   1. Provide premolded joint filler for expansion joints abutting concrete curbs, catch basins, manholes, inlets, structures, walks, and other fixed objects, unless otherwise indicated.
   2. Locate expansion joints at a maximum of 50 feet o.c. for each pavement lane unless indicated otherwise.
   3. Extend joint fillers full width and depth of joint, not less than 1/2 inch or more than 1 inch below finished surface where joint sealant is indicated.
      a. Place top of joint filler flush with finished concrete surface when no joint sealant is required.
   4. Utilize "removable expansion board cap" during placement of all expansion joints.
      a. Set top of removable cap flush with finish grade of concrete.
      b. After curing of concrete, remove cap and install sealant per Division 7.
   5. Furnish joint fillers in one-piece lengths for full width being placed wherever possible. Where more than one length is required, lace or clip joint filler sections together.

E. Fillers and Sealants:
   1. Comply with requirements of applicable Division 7 sections for preparation of joints, materials, installation, and performance.

3.06 CONCRETE FINISHING

A. After striking-off and consolidating concrete, smooth surface by screeding and floating.
   1. Use hand methods only where mechanical floating is not possible.
   2. Adjust floating to compact surface and product uniform texture.

B. After floating, test surface for trueness with a 10-foot straightedge.
   1. Distribute concrete as required to remove surface irregularities, and refloat repaired areas to provide a continuous smooth finish.

C. Work edges of slabs, gutters, back top edge of curb, and formed joints with an edging tool, and round to 1/2-inch radius, unless otherwise indicated.
   1. Eliminate tool marks on concrete surface.
D. After completion of floating and when excess moisture or surface sheen has disappeared, complete troweling and finish surface as follows:
   1. Broom finish by drawing a fine-hair broom across concrete surface perpendicular to line of traffic.
   2. Repeat operation if required to provide a fine line texture acceptable to Architect.
   3. On inclined slab surfaces, provide a coarse, non-slip finish by scoring surface with a stiff-bristled broom, perpendicular to line of traffic.

E. Do not remove forms for 24 hours after concrete has been placed.
   1. After form removal, clean ends of joints and point-up any minor honeycombed areas.
   2. Remove and replace areas or sections with major defects, as directed by Architect.

3.07 CURING

A. Protect and cure finished concrete paving.
   1. Use membrane-forming curing and sealing compound.

3.08 REPAIRS AND PROTECTION

A. Repair and replace broken or defective concrete, as directed by Architect.

B. Drill test cores where directed by Architect when necessary to determine magnitude of cracks or defective areas.
   1. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to paving with epoxy adhesive.

C. Protect concrete from damage.
   1. Exclude traffic from paving for at least 14 days after placement.
   2. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.

D. Sweep concrete pavement and wash free of stains, dicolorations, dirt, and other foreign materials just before final inspection.

END OF SECTION 321313

SECTION 321373 – CONCRETE PAVING JOINT SEALANT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of contract, including General and Supplementary Conditions, and Division 1 specification sections, apply to the work of this section.

1.02 DESCRIPTION OF THE WORK

A. The extent of each form and type of joint sealer is indicated by provisions of this section.

B. The applications for joint sealers as work of this section include the following:
   1. Expansion, Construction and Contraction joints between concrete units.
   2. Expansion joints between masonry units.
   3. Expansion joints in horizontal concrete flatwork.

C. General Performance:
   1. Except as otherwise indicated, joint sealers are required to establish and maintain airtight and waterproof continuous seals on a permanent basis, within recognized limitations of wear and aging as indicated for each application.
   2. Failures of installed sealers to comply with this requirement will be recognized as failures of materials and workmanship.

1.03 SUBMITTALS

A. Product Data:
   1. Submit manufacturer's product specifications, handling/installation/curing instructions, and performance tested data sheets for each elastomeric product required.

1.04 JOB CONDITIONS

A. Weather Conditions:
   1. Do not proceed with installation of liquid sealants under unfavorable weather conditions.
   2. Install elastomeric sealants when temperature is in lower third of temperature range recommended by manufacturer for installation.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. General:
   1. Manufacturers listed in this article include those known to produce the indicated category of

prime joint sealer material, either as a nominally pure generic product or an as equivalent-performance modification thereof or proprietary product.

B. Manufacturer:
   1. Subject to compliance with requirements, provide products of one of the following:
   2.. Manufacturers of Elastomeric Sealants (Liquid):
      a. Dow Corning Corp.; Midland, MI
      b. W.R.Meadows, Inc.; Elgin, IL
      c. Pecora Corp.; Harlesville, PA
      d. Sonneborn/Contech, Inc.; Minneapolis, MN
      e. Tremco, Inc.; Cleveland, OH
      f. Toch/Carboline Co.; St.Louis, MO

2.02 MATERIALS

A. General Sealer Performance Requirements:
   1. Provide colors indicated or, if not otherwise indicated, as selected by Landscape Architect from manufacturer's standard colors.
   2. Select materials for compatibility with joint surfaces and other indicated exposures, and except as otherwise indicated select modulus of elasticity and hardness or grade recommended by manufacturer for each application indicated.
   3. Where exposed to traffic, select nontracking materials of sufficient strength and hardness to withstand stilletto heel traffic without damage or deterioration of sealer system.

B. Miscellaneous Materials:
   1. Joint Primer/Sealer:
      a. Provide type of joint primer/sealer recommended by sealant manufacturer for joint surfaces to be primed or sealed.
   2. Sealant Backer Rod:
      a. Provide compressible rod stock of polyethylene foam, polyurethane foam, polyethylene jacketed polyurethane foam, butyl rubber foam, neoprene foam or other flexible, permanent, durable nonabsorbtive material as recommended by sealant manufacturer for compatibility with sealant.
   3. Expansion Board Cap:
      a. Provide removable cap (i.e. Zip-Strip) on all concrete flatwork expansion joints to facilitate sealant installation.
      b. Install 1/2" x 1/2" cap as integral part of all expansion joints.
      c. Remove cap immediately prior to sealant installation.

2.03 INSPECTION

A. Installer must examine substrates, (joint surfaces) and conditions under which joint sealer work is to be performed, and must notify Contractor in writing of unsatisfactory conditions.

B. Do not proceed with joint sealer work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

PART 3 - EXECUTION

3.01 JOINT PREPARATION

A. Clean joint surfaces immediately before installation of gaskets, sealants.
   1. Remove dirt, insecure coatings, moisture and other substances which could interfere with seal of sealant.
   2. Etch concrete and masonry joint surfaces as recommended by sealant manufacturer.

B. Prime or seal joint surfaces where indicated, and where recommended by sealant manufacturer.
   1. Confine primer/sealer to areas of sealant bond.
   2. Do not allow spillage or migration onto adjoining surfaces.

3.02 INSTALLATION

A. Comply with manufacturer's printed instructions except where more stringent requirements are shown or specified, and except where manufacturer's technical representative directs otherwise.

B. Set joint filler units at depth or position in joint as indicated to coordinate with other work, including installation of bond breakers, backer rods and sealants.
   1. Do not leave voids or gaps between ends of joint filler units.

C. Install sealant backer rod for liquid-applied sealants, except where shown to be omitted or recommended to be omitted by sealant manufacturer for application indicated.

D. Employ only proven installation techniques, which will ensure that sealants are deposited in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of joint bond surfaces equally on opposite sides.
   1. Except as otherwise indicated, fill sealant rabbet to a slightly concave surface, slightly below adjoining surfaces.
   2. Where horizontal joints are between a horizontal surface and vertical surface, fill joint to form a slight cove, so that joint will not trap moisture and dirt.

E. Install liquid-applied sealant to depths as shown or, if not shown, as recommended by sealant manufacturer but within the following general limitations, measured at center (thin) section of beads; (not applicable to sealants in lapped joints):
   1. For sidewalks, pavements and similar joints sealed with elastomeric sealants and subject to traffic and other abrasion and indentation exposures, fill joints to a depth equal to 75% of joint width, but neither more than 5/8" deep nor less than 3/8" deep.
   2. For normal moving joints sealed with elastomeric sealants but not subject to traffic, fill joints to a depth equal to 50% of joint width, but neither more than 1/2" deep nor less than 1/4" deep.

3.03 LOCATION OF CAULKING AND SEALANTS

A. Carefully study the drawings and furnish and install the proper materials at each point where called for on the drawings and herein, plus at all other points where sealant is essential in main

taining the continued integrity of the watertight barrier. The following listings are included as a guide only.

B. Locations of joints filled with sealants:
   1. All joints so noted in all concrete site improvements and the joint between the concrete slabs and dissimilar materials.
   2. Any other exterior joints between dissimilar materials where the joining of the two surfaces leaves a gap between the meeting materials or components as may be dictated by the various methods of construction - to make watertight.
   3. Any other exterior locations which are noted "caulked" or "sealant" and not specifically listed herein, or included in the work of any other sections of the specifications.

3.04 JOINT DESIGN

A. All sealant joints shall conform to the following criteria:
   1. No joint less than 1/4" in width or depth.
   2. Joints up to 1/2" in width shall have equal depth.
   3. Joints over 1/2" in width shall have depth equal to 1/2 the width.

B. Provide backer rod as specified to limit depth of joints.
   1. In shallow joints where use of backer rod is restricted, provide bond-breaker tape.

C. Spillage:
   1. Do not allow sealants or compounds to overflow or spill onto adjoining work, or to migrate into voids of exposed finishes.
   2. Clean adjoining surfaces by whatever means may be necessary to eliminate evidence of spillage.

D. Recess exposed edges of joint fillers slightly behind adjoining surfaces, unless otherwise shown, so that compressed units will not protrude from joints.

E. Pavement and Sidewalk Joints:
   1. Provide approved foam, bituminous and/or fiber expansion joint fillers at all areas indicated to receive an expansion joint (EJ), or as otherwise detailed.
      a. Install non-bituminous joint filler material between limestone units and any other material.
   2. Employ the use of expansion board cap to ensure proper depth of sealants.
   3. Provide multi-component polyurethane sealant on top of joint filler where indicated, and at the right-of-way lines, where new pavement meets vertical surfaces.

F. Miscellaneous Above Grade Joints (other than pavement):
   1. Provide polyurethane joint filler or backer rod, as indicated with single-component polyurethane sealant.

3.05 CURE AND PROTECTION

A. Cure sealants in compliance with manufacturer's instructions and recommendations, to obtain high early bond strength, internal cohesive strength and surface durability.

1. Advise Contractor of procedures required for cure and protection of joint sealers during construction period, so that they will be without deterioration or damage (other than normal wear and weathering) at time of substantial completion.
2. Cure and protect sealants in a manner which will minimize increases in modulus of elasticity and other accelerated aging effects.
3. Replace or restore sealants which are damaged or deteriorated during construction period.

END OF SECTION 321373

SECTION 328400 – UNDERGROUND IRRIGATION SYSTEM

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Products specified and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to the work of this section.

1.02 SCOPE

A. The work covered by this specification shall include the furnishing of all labor, materials, tools and equipment necessary to perform and complete the installation and renovation of the NSA automatic irrigation system as specified herein. Any incidental work not shown or specified which can reasonably be determined to be part of the work and necessary to provide a complete and functional system.

B. The work covered by this specification also includes irrigation design/built standards and guidelines for development of irrigation plans.

C. The work covered by this specification also includes all permits, federal, state and local taxes and all other costs, both foreseeable and unforeseeable at the time of construction.

D. No deviation from these specifications, the accompanying product attachments, or agreement is authorized or shall be made without prior written authorization signed by the Owner or his duly appointed representative.

1.03 QUALITY ASSURANCE

A. Installer Qualifications: A firm specializing in irrigation work with not less than five (5) years of experience in installing irrigation systems similar to those required for this project.

B. Coordination: Coordinate and cooperate with other contractors to enable the work to proceed as rapidly and efficiently as possible.

C. Inspection of Site: The Contractor shall acquaint himself with all site conditions, including underground utilities before construction is to begin. Contractor shall coordinate placement of underground materials with contractors previously working underground in the vicinity or those scheduled to do underground work in the vicinity. Contractor is responsible for minor adjustments in the layout of the work to accommodate existing facilities.

D. Protection of Existing Plants and Site Conditions: The Contractor shall take necessary precautions to protect site conditions to remain. Should damages be incurred, this Contractor shall repair the damage to its original condition at his own expense. Any disruption, destruction, or disturbance of any existing plant, tree, shrub, or turf, or any structure shall be completely restored to the

satisfaction of the Owner and his representatives, solely at the Contractor's expense.

E. Protection of Work and Property: The Contractor shall be liable for and shall take the following actions as required with regard to damage to any of the Owner's property.

1. Any existing building, equipment, piping, pipe coverings, electrical systems, sewers, sidewalks, roads, grounds, landscaping or structure of any kind (including without limitation, damage from leaks in the piping system being installed or having been installed by Contractor) damaged by the Contractor, or by his agents, employees, or subcontractors, during the course of his work, whether through negligence or otherwise, shall be replaced or repaired by Contractor at his own expense in a manner satisfactory to Owner, which repair or replacement shall be a condition precedent to Owner's obligation to make final payment under the Contract.

2. Contractor shall also be responsible for damage to any work covered by these specifications before final acceptance of the work. He shall securely cover all openings into the systems and cover all apparatus, equipment and appliances, both before and after being set in place to prevent obstructions on the pipes and the breakage, misuse or disfigurement of the apparatus, equipment or appliance.

3. All trenching or other work under the leaf canopy of any and all trees shall be done by hand or by other methods so that no branches are damaged in any way.

   Trenching around existing plant material shall be done by hand so as to minimize root disturbance.

   Buildings, walks, walls, and other property shall be protected from damage. Open ditches left exposed shall be flagged and barricaded by the Contractor by approved means. The Contractor shall restore disturbed areas to their original condition.

4. The Contractor shall be responsible for requesting the proper utility company to stake the exact location of any underground lines including but not limited to electric, gas, telephone service, water, and cable.

   The Contractor shall take whatever precautions are necessary to protect these underground lines from damage. In the event damage does occur, all damage shall be completely repaired to its original condition, at no additional cost to the Owner.

5. The Contractor shall request the Owner, in writing, to locate any private utilities (i.e., electrical service to outside lighting) before proceeding with any excavation. If, after such requests and necessary staking, private utilities which were not staked are encountered and damaged by the Contractor, they shall be repaired by the Owner at no cost to the

Contractor. If the Contractor damages staked or located utilities, they shall be repaired at the Contractor's expense.

F. Codes and Inspections: The entire installation and renovation shall comply fully with all local and state laws and ordinances and with all established codes arrange for all necessary inspections and shall pay all fees and expenses in connection with same, as part of the work under this Contract. Upon completion of the work, he shall furnish to the "Owner" all inspection certificates customarily issued in connection with the class of work involved.

G. The Contractor shall keep on his work, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Owner, or Owner's representative.

H. The superintendent shall represent the Contractor in his absence and all directions given to him shall be as binding as if given to the Contractor.

I. The Owner or designated individual shall have full authority to approve or reject work performed by the Contractor. The Owner’s Authorized Representative shall also have full authority to make field changes that are deemed necessary.

J. Final Acceptance: Final acceptance of the work may be obtained from the Owner upon the satisfactory completion of all work. Acceptance by the Owner’s Representative and/or Owner in no way removes the Contractor of his responsibility to make further repairs, corrections and adjustments to eliminate any deficiencies which may later be discovered.

K. Guarantee: All work shall be guaranteed for one year from date of final acceptance against all defects in material, equipment and workmanship to the satisfaction of the Owner. Repairs, if required, shall be done promptly, within 72 hours at no cost to the Owner.

1. The guarantee shall also cover repair of damage to any part of the premises resulting from leaks or workmanship, to the satisfaction of the Owner. The Contractor shall not be responsible for work damaged by others. Repairs, if required, shall be done promptly. The guarantee shall state the name of the Owner, provide full guarantee terms, effective and termination date, name and license number of Contractor providing guarantee, address, and telephone number. It shall be signed by the chief executive of the Contractor of his liability under the guarantee. Such warranties shall only supplement the guarantee.

2. If, within ten (10) days after mailing of written notice by the Owner to the Contractor requesting repairs or replacement resulting from a breach of warranty, the Contractor shall neglect to make or undertake with due diligence to make the same, the Owner may make such repairs at the Contractor's expense; provided, however, that in the case of emergency where, in the judgment of the Owner, delay would cause serious loss or damage, repairs or replacement may be made without notice being sent to the Contractor, and Contractor shall pay the cost thereof.

L. The Contractor shall provide full coverage in all irrigated areas where landscape planting renovation occurs and shall be responsible for additional heads and components as required, installed at his own cost.

M. On-site Observation: At any time during the installation of the irrigation system by the Contractor, the Owner or Owner's Representative may visit the site to observe work underway. Upon request, the Contractor shall be required to uncover specified work as directed by the Owner or material, workmanship or method of installation not meet the standards specified herein, the Contractor shall replace the work at his own expense.

N. Workmanship: All work shall be installed by qualified, skilled personnel, proficient in the trades required, in a neat, orderly, and responsible manner with recognized standards of workmanship. The Contractor shall have had considerable experience and demonstrated ability in the installation of sprinkler irrigation systems of this type.

1.04 SUBMITTALS

A. All materials shall be those specified and/or approved by the Owner.

B. Drawings: Upon award of bid an irrigation renovation design showing a general layout shall be submitted prior to final design. Final design must be approved before starting construction and will include plan layout and details illustrating location and type of heads, valves, piping circuits, controls, and accessories. If requested by the Owner, provide design calculations demonstrating how system component sizes were derived.

C. Product Data: After the award of the Contract and prior to beginning work, the Contractor shall submit for approval by the Owner, two copies of the complete list of materials, manufacturer's technical data, and installation instructions which he proposes to install.

D. Commence no work before approval of material list and descriptive material by the Owner.

E. Record Drawings: The Contractor shall record on reproducibles, all changes that may be made during actual installation and renovation of the system. Location of remote control valves and isolation valves shall include dimensions from two (2) permanent points of reference (building corner, street corner, fence line, etc.).

1. Immediately upon installation of any piping, valves, wiring, sprinklers, etc., in locations other than shown on the Final drawings or of sizes other than indicated, the Contractor shall clearly indicate such changes on a set of black/white prints. Records shall be made on a daily basis. All records shall be neat and subject to the approval of the Owner.

2. The Contractor shall also indicate on the record prints the location of all wire splices, original or due to repair, that are installed underground in a location other than the controller pedestal, remote control valve box, power source or connection to a valve-in-head sprinkler.

3. These drawings shall also serve as work progress sheets. The Contractor shall make neat and legible notations thereon daily as the work proceeds, showing the work as actually installed. These drawings shall be available at all times for review and shall be kept in a location designated by the Owner's Representative.

4. Progress payment request and record drawing information must be approved by Owner before payment is made.

5. If in the opinion of the Owner or his representative, the record drawing information is not being properly or promptly recorded, construction payment may be stopped until the proper information has been recorded and submitted.

6. Before the date of the final site observation and approval, the Contractor shall deliver one set (copies) of reproducible record drawing plans and notes to the Owner. Record drawing information shall be approved by the Owner prior to final payments, including retentions.

F. Operations and Maintenance Manuals: The Contractor shall prepare and deliver to the Owner or his designated representative within ten (10) calendar days prior to completion of construction, a hard cover binder with three rings containing the following information:

1. Index sheet stating the Contractor's address and business telephone number, list of equipment with name(2) and address(es) of local manufacturer's representative(s).

2. Catalog and parts sheets on every material and equipment installed under this Contract.

3. Complete operating and maintenance instruction on all major equipment.

4. Demonstrate to and provide the Owner's maintenance personnel with instructions for major equipment and show evidence in writing to the Owner, or his designated representative at the conclusion of the project that this service has been rendered.

1.05 EXPLANATION OF AS-BUILT DRAWINGS

A. The As-Built Drawings titled “Training Equipment Center Irrigation Plans” are provided to give the Contractor an understanding of the irrigation system, its operation and design layout. The as-built plans allow the Contractor to identify new two-wire communication cable routing and renovation of sprinkler areas as applicable. The Contractor shall carefully investigate the structural and finished conditions affecting all of the work and plan his work accordingly, furnishing such offsets, fittings and sleeves as may be required to meet such conditions.

B. The as-built drawings are generally diagrammatic and indicative of the work installed. The renovation work shall be installed in such a manner as to avoid conflicts between existing irrigation system components, planting and architectural features.

C. All work called for to complete the irrigation system renovation shall be furnished and installed whether or not specifically mentioned in the specifications.

D. The Contractor shall not willfully install the irrigation system as shown on the drawings when it is obvious in the field that obstructions, grade differences or discrepancies in area dimensions exist that might not have been known in engineering. Such obstructions or differences should be brought to the attention of the Owner. In the event that notification is not performed, the Contractor shall assume full responsibility for any revision necessary.

E. If, in the opinion of the Owner, the labor furnished by the Contractor is incompetent, unskilled, or unreliable, his equipment inadequate, improper or unsafe, or if the Contractor shall fail to continuously and diligently prosecute the construction, the Landscape Architect or Owner shall, in writing, instruct the Contractor to remove all such causes of noncompliance and the Contractor shall promptly comply.

F. The Contractor shall be responsible for full and complete coverage of all irrigation areas. This includes all proposed areas affected by landscape planting renovations. The Owner shall be notified of any necessary adjustments at no additional cost to the Owner. Any revisions to the irrigation system must be submitted and answered in written form, along with any change in Contract price. Layout may be modified, if necessary to obtain coverage. All irrigation sprinkler head spacing not to exceed 50% of the diameter.

PART II: PRODUCTS

2.01 MATERIALS

A. All products shall be as specified and herein these specifications. The materials chosen for the design of the irrigation system have been specifically referred to by the manufacturer to enable the Owner's Representative to establish the level of quality and performance required by the system design. Equipment by other manufacturers may be used only if submittal of manufacturer's technical data and installation instructions are reviewed and approved by the Owner's Representative.

B. Material and equipment shall be supplied by the Contractor. No substitutions shall be allowed without the prior written approval of the Owner/ Owner's Representative. The Contractor shall inspect all materials and equipment prior to installation, and defective materials shall be replaced with the proper materials and equipment. Those items used in the installation found to be defective, improperly installed or not as specified, shall be removed and the proper materials and equipment installed in the proper manner, as interpreted by the Owner/Owner's

C. Representative. The Contractor shall remove all damaged and defective pipe and equipment from the site.

D. Storage and Handling: Use care in handling, loading, storing and assembling components to avoid damage. Store plastic pipe and fittings under cover and protect from sunlight before using. Discolored plastic pipe and fittings shall be rejected.

All metallic pipe and fittings shall be handled, stored, loaded, and assembled with the same care used for plastic components. Metallic components shall be stored in an enclosure to prevent rusting and general deterioration

2.02 PIPING

A. General Provisions: All materials throughout the system shall be new and in perfect condition unless otherwise directed by the Owner.

B. Polyvinyl Chloride Pipe (PVC):

1. Laterals: PVC shall conform to the requirements of ASTM Designation D 2241, Class 1120 or 1220. All lateral piping shall be Class 200.

2. Main Line Under Pressure: PVC shall conform to the requirements of ASTM Designation D 2241, Class 1120 or 1220, Class 200

a. Polyvinyl Chloride Pipe (PVC) Bell End Gasket Type – Pipe 3 inches and larger shall be used or irrigation mainline and any other line under constant pressure. .

b. Polyvinyl Chloride Pipe (PVC) Solvent Weld Type – Pipe 2 inches and smaller shall be used for mainline and any other line under constant pressure.

3. Pipe Markings: All PVC pipe shall bear the following markings:
- Manufacturer's Name
- Nominal Pipe Size
- Schedule or Class
- Pressure Rating of PSI
- NSF (National Sanitation Foundation) Approval
- Date of Extrusion

C. Galvanized Steel or Copper Pipe: Galvanized steel pipe shall be Schedule 40 and conform to the requirements of ASTM Designation A120. Copper pipe shall be seamless, Type "K", drown temper, ASTM B88.

2.03 PIPE FITTINGS

A. Fittings for PVC Pipe: Shall be Schedule 40 PVC with solvent weld joints and conform to the requirements of ASTM Designation D 2467 and D 2464 respectively

B. Fittings for Gasketted Pipe: For gasket pipe up to 8” and couplings up to 12", fittings shall be Schedule 40 rubber ring fittings with sealed bell spigot, O-ring, ring-tite mechanical joint, flanged or IPS threaded. All fittings for gasketted pipe shall be thrust blocked as per detail and of the size recommended by manufacturer of fittings.

All fittings shall bear the manufacturer's name or trademark, material designation, size, applicable IPS schedule and NSF seal of approval.

C. Galvanized Steel and Copper Fittings:

1. Galvanized Steel Pipe: ASTM A 120 Schedule 40 galvanized malleable-iron screwed fittings.

2. For Copper Tubing: Type K copper, ASTM B88 ANSI B 16.22 wrought copper or cast brass, 150 PSI recessed solder joint type fittings.

3. Dielectric Protection: Use dielectric fittings at connection where pipes of dissimilar metal are jointed.

2.04 PVC JOINTS

A. Joints in PVC pipe smaller than 3" shall be solvent welded in accordance with the recommendations of the pipe manufacturer; the solvent cement and primer shall conform to the requirements of ASTM Designation A-2564.

2.05 THREADED CONNECTIONS

A. Threaded PVC connections shall be made up using Teflon tape only.

B. Connection between mainline pipe fittings and automatic or manual control valves shall be made using Schedule 80 threaded fittings and nipples.

2.06 SOLVENT CEMENT

A. General: Provide solvent cement and primer for PVC solvent weld pipe and fittings recommended by the manufacturer. Pipe joints for solvent weld pipe to be belled end. Pipe joints for gasketted pipe to be intrical ring type. Insert gaskets will not be accepted.

B. Thrust Blocks: Main line piping 2 1/2" or greater in diameter shall have thrust blocks sized and placed in accordance with the pipe manufacturer's recommendations or, in the absence of specified recommendations by the pipe manufacturer. 3000 PSI concrete thrusts shall be properly installed at tees, elbows, 45's, crosses, reducers, plugs, caps and valves.

2.07 PIPE AND WIRE SLEEVES

A. Sleeves to be installed:

1. The Contractor shall install irrigation system pipe and wire sleeves conforming to the following:

a. All pipe sleeves shall extend a minimum of 36" beyond the edges of pavement.

b. All pipe sleeves to be installed beneath future road surfaces shall be PVC pipe Schedule 40 as per FDOT specifications.

c. All pipe sleeves to be installed beneath existing road surfaces shall be high density polyethylene (HDPE) directional bores. All sleeves are to be two times the pipe diameter that it carries. Directional bores shall conform to FDOT specifications.

d. All irrigation system wires shall have separate PVC Schedule 40 or HDPE directional bore sleeves.

e. All pipe sleeves shall be installed at the minimum depth specified for mainlines, lateral lines, and electric wire.

f. Contractor shall coordinate all pipe sleeve locations and depths prior to initiating installation of the irrigation system.

2.08 SPRINKLER HEADS

A. Sport Field Rotary Pop-up: The sprinkler shall be Hunter I-40 or equal. The gear driven type rotor shall be capable of covering 45 to 65 feet radius at 60-70 PSI., with a discharge rate of 8.0 GPM to 25.0 GPM. The sprinkler shall be available in full and part circle. The part circle sprinkler arc shall be adjustable in 1 degree increments from 40 degree to 360 degree.

The nozzle shall pop-up 4” when watering and has a heavy duty stainless steel spring for retraction. Nozzles shall be sealed in the down position to prevent entry of foreign material. Part circle nozzles shall be adjustable down to a 25% reduction radius accessible from the top of the sprinkler.
The body of the sprinkler shall be constructed of non-corrosive heavy duty A.B.S. The sprinkler shall be equipped with a rubber cover and all parts of the sprinkler shall be removable through the top of the sprinkler case. Maximum working pressure at the base of the sprinkler shall be 90 PSI.

All sport field rotor sprinklers are to be connected to PVC lateral lines using Rain Bird TSJ swing joints.

B. Rotary Pop-up: The sprinkler shall be Hunter I-20 or equal. The gear driven type rotor shall be capable of covering 30 to 45 feet radius at 40-50 PSI., with a discharge rate of 2.0 GPM to 8.0 GPM. The sprinkler shall be available in full

and part circle. The part circle sprinkler arc shall be adjustable in 1 degree increments from 40 degree to 360 degree.

The nozzle shall pop-up 4” when watering and has a heavy duty stainless steel spring for retraction. Nozzles shall be sealed in the down position to prevent entry of foreign material. Part circle nozzles shall be adjustable down to a 25% reduction radius accessible from the top of the sprinkler.
The body of the sprinkler shall be constructed of non-corrosive heavy duty A.B.S. The sprinkler shall be equipped with a rubber cover and all parts of the sprinkler shall be removable through the top of the sprinkler case. Maximum working pressure at the base of the sprinkler shall be 70 PSI.

All rotor sprinklers are to be connected to PVC lateral lines using flexible PVC.

C. Spray Sprinklers: The sprinkler shall be a Rain Bird 1800 Series or equal fixed spray type designed for in-ground installation. The nozzle shall elevate 6" or 12" (as designated on plan) when in operation. The body of the sprinkler shall be constructed of non-corrosive heavy duty plastic. A filter screen shall be in the nozzle piston. All sprinkler parts shall be removable through the tip of the unit by removal of a threaded cap.

D. Bubblers: The bubbler shall be Rainbird 1400 Series or equal. The pressure compensating bubbler shall have a ½” (FNPT) inlet to accept male adapter and ½” flex pipe.

2.09 AUTOMATIC CONTROL VALVE

The automatic remote control valves shall be Hunter ICV Series or equal. 1" –101G, 1-1/2"- 151G and 2" – 201G. They shall be electric solenoid operated valves. The valves shall be installed either globe or angle configuration. The valve body or bonnet shall be constructed from high strength PVC rated at 200 PSI with flow control. The diaphragm assembly shall be of fabic reinforced rubber. All drip zone valves are to be equipped with a Hunter Accu-Set pressure regulator.

2.10 GATE VALVES

A. Gate valves for 3/4" through 2-1/2" shall be of brass or bronze construction, solid wedge, IPS threads, non-rising stem with wheel operating handle, for a continuous working pressure of 150 PSI.

B. Gate valves for 3" and larger: Iron body, brass or bronze mounted AWWA gate valves, with a clear waterway equal to the full nominal diameter of the valve, rubber gasket for a continuous working pressure of 150 PSI. Valve shall be equipped with a square operating nut.

2.11 AIR RELIEF VALVES

A. A pressure air release valve shall be installed at all high elevations in the irrigation mainline system and approximately at 1800 feet of horizontal mainline segments and at locations as shown per plans. The release valves shall be quick

opening and slow closing, and continuous acting. Internal parts shall be stainless steel, with a cast iron body. Valves shall be the Bermad AR Series, Model 4415M or approved equal.

2.12 VALVE BOXES

A. For gate valves, use AMETEK #181014 box with #181015 locking lid, as per the drawings.

B. For control valves 3/4" through 2", use AMETEK #181014 box with #181015 locking lid.

C. For control wiring splices, use AMETEK #181014 box with #181015 locking lid, as per the drawings

2.13 IRRIGATION COMMUNICATION CABLE

A. The communication cable shall be Hunter 14-2 communication cable model ID1BLU. All connections shall be made using DBY wire connector kits.

2.14 IRRIGATION WIRING

A. Wiring used for connecting the electric control valves to the decoders shall be Type UF, 600 volt, single strand, solid copper with PVC insulation 4/64" thick. Size shall be 14 gauge, red for "hot" or lead wires, and common wire to be 14 gauge, white in color.

2.15 AUTOMATIC CONTROL SYSTEM

A. The automatic control system shall be a Hunter ACC Decoder Controller manufactured by Hunter Industries Incorporated.

B. The controller shall use modular solid-state control technology and be capable of automatic, semi-automatic and manual operations. The controller shall be programmable by the on-board keyboard with large back-lit LCD or by a laptop computer.

C. It shall be housed in a metal cabinet Model ACC-99D. Access to high voltage and 24-volt field wire shall be through a front door panel with a keyed lock. Both the cabinet and interior assemblies shall be UL-approved for outdoor and indoor applications. The controller shall be located within the project’s pump station enclosure.

D. The controller shall be capable of operating at 115 V a.c. (10%) 50/60 Hz and be capable of withstanding an incoming surge or electrical spike of 4.5 kV on the input side.

E. The controller shall work in conjunction with Hunter IDWIRE Communication Cable and Hunter ICD decoders.

F. The controller shall be equipped for a water conservation device. An automatic rain shut-off device, Hunter Mini-Clik shall provide automatic interruption of watering cycle to keep sprinklers from starting or continuing when rainfall exceeds a pre-selected amount.

2.16 NETAFIM TECHLINE CV DRIP TUBING

A. Netafim Techline CV Pressure-Compensation Drip Tubing: The drip tubing shall be a prebonded emitter type. The tubing shall have emitters spaced at 12 inches and in flow rates of 0.9 gallons per hour (GPH). Water distribution shall be via an integrated turbulent flow path emitter. The tubing shall consist of nominal- sized, linear, low-density 5/8 inch polyethylene with an outside diameter (O.D.) of approximately 0.66 inches and an inside diameter (I.D.) of approximately 0.56 inches. The tubing shall be available in a pressure-compensating model. The pressure-compensating type shall be designed to flush at startup, shutdown and during the irrigation cycle to inhibit debris collection.

2.17 NETAFIM TECHLINE FITTINGS

A. Netafim Techline Tubing Fittings: All Techline connections shall be made with approved Netafim Techline insert fittings.

2.18 BACKFLOW PREVENTER

A. Shall comply with requirements and codes of local governing authority regarding backflow prevention.

B. Provide the necessary materials and draining capabilities.

C. Backflow preventer shall be the type suitable for use in high hazard cross connection to potable water system as manufactured by one of the following manufacturer's: Watts, Febco or Wilkins.

1. Reduced pressure backflow preventers shall be ASSE #1013 and labeled accordingly.

2. Double check valve assembly backflow preventers shall be ASSE #1015 and labeled accordingly.

3. In absence of local codes or requirements, provide double check assembly backflow preventer installed in strict accordance with manufacturer's written instructions.

2.19 WATER METER

A. Meter box shall conform to requirements of local utility company.

PART III: EXECUTION

3.01 INSPECTION

A. The Contractor shall examine the areas and conditions under which landscape irrigation system is to be installed and notify the Owner in writing of conditions detrimental to the proper and timely completion of the work. The Contractor shall proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Owner.

3.02 PREPARATION

A. The Contractor shall provide sleeves to accommodate piping under walks or paving. The Contractor shall coordinate with other trades and install to accurate levels prior to paving work. Cutting and patching of paving and concrete will not be permitted. The Contractor shall maintain all warning signs, shoring, barricades, flares and red lanterns, as required by any local codes, ordinances or permits.

3.03 TRENCHING AND BACKFILLING

A. Excavation: The Contractor shall stake out the location of each run of pipe, sprinkler heads, sprinkler valves and isolation valves prior to trenching. Excavation shall be open vertical construction sufficiently wide to provide free working space around the work installed and to provide ample space or backfilling and tamping. Trenches for pipe shall be cut to required grade lines, and compacted to provide accurate grade and uniform bearing for the full length of the line. The bottom of the trenches shall be free of rock or other sharp edged objects. Minimum cover shall be as follows:

1. Pipe and Wire Depth

Pressure Mainline	24” at top of pipe from Finish Grade
Lateral Piping (rotor)	18” at top of pipe from Finish Grade
Lateral Piping (pop-up)	18” at top of pipe from Finish Grade
Control Wiring in conduit	12” at top of pipe from Finish Grade

B. Minimum Clearances: All pipelines shall have a minimum clearance of six inches from each other and from lines of other crafts. Parallel lines shall not be installed directly over one another. No lateral line shall be installed in the main-line trench.

3.04 INSTALLATION OF PIPING

A. PVC Pipe and Joints: The Contractor shall not install solvent wild pipe when air temperature is below 40ø F. Installation shall be in accordance with the manufacturer's instructions.

1. Only the solvent recommended by the pipe manufacturer shall be used. All PVC pipe and fittings shall be installed as outlined and instructed by the pipe manufacturer, and it shall be the Contractor's full responsibility

to make arrangements with the pipe manufacturer for any field assistance that may be necessary. The Contractor shall assume full responsibility for the correct installation.

3.05 BACKFILLING PROCEDURES

Initial backfill on PVC lines shall be pulverized native soil, free of foreign matter. Within radius of 4" of the pipe shall be clean soil or sand. Plant locations shall take precedence over sprinkler and pipe locations. The Contractor shall coordinate the location of trees and shrubs with the routing of lines and final head locations.

A. Backfill and Compaction: The Contractor shall leave trenches slightly mounded to allow for settlement after the backfilling is completed. The Contractor shall clean the site of the work continuously of excess waste materials as the backfilling progresses, and leave in a neat condition. No trenches shall be left open for a period of more than 48 hours. Protect open trenches as required.

The Contractor shall carefully backfill excavated materials approved for backfilling, consisting of earth, loam, sand, and other approved materials, free of rock and debris over 1" in size. Backfill shall be compacted to original density of surrounding soil without dips, sunken areas, or irregularities.

The Contractor shall conform to DOT requirements for methods and required compaction percentages, for roads and paving.

The Contractor shall hand place the first 6" of backfill (or to top of pipe) and have it walked on so as to secure the position of the pipe and wire.

No wheel rolling will be allowed. The Contractor shall remove rock or debris extracted from backfill materials and dispose of offsite. The Contractor shall fill any voids left in backfill with approved backfill materials.

B. Existing Lawns: Where trenching is required across existing lawns, uniformly cut strips of sod 6" wider than trench. The Contractor shall remove sod in rolls of suitable size for handling and keep moistened until replanted. The Contractor shall replant sod within 48 hours after removal, roll and water generously. The Contractor shall resod any areas not in healthy condition equal to adjoining lawns 10 days after replanting.

C. Seeded Area: Trenching will be required across existing seeded areas, primarily roadway edging.

D. Pavements: Jack and bore or directional bore piping under paving materials as per local regulatory codes. No cutting and patching of pavement will be permitted.

3.06 VALVES

A. Isolation Valves: Shall be sized corresponding to adjacent pipe size. Specified valve boxes shall be installed flush with finish grade in such a manner that surface forces applied to their exposed area will not be transmitted to the piping

in which the valve is installed nor any other piping, wiring or other lines in the vicinity of said valves.

B. Gate Valves: Install where shown on drawings in valve boxes.

C. Electric Control Valves: Shall be installed in specified valve boxes. The valve shall have 6" of 3/4" pea gravel installed below the bottom of the valve. If the valve box does not extend to the base of the valve, a valve box extension shall be installed. Electric control valves shall be installed where shown and grouped together where practical. The Contractor shall place no closer than 24" to walk edges, bikeway edges, buildings and walls. The Contractor shall adjust the valve to provide flow rate or rated operating pressure required for each sprinkler circuit.

3.07 CONDUIT AND SLEEVES

Conduit and Sleeves for Control Wiring and Main/Lateral Pipe: The Contractor shall provide and install where necessary. Contractor shall coordinate locations of previously installed sleeves with the General Site Contractor.

The Contractor shall coordinate installation of sleeves with work of other disciplines.

3.08 CONTROLS

A. The Contractor shall program the controller to correspond with station settings as shown on the as-built plans. Automatic controller shall be provided and installed by the Contractor per manufacturer recommendations. All zones will be labeled on the controller.

B. Controller and decoders, where shown on plan, shall be equipped with lightning protection and grounded to a standard 5/8" copper clad steel ground rod driven a minimum of 8' into the ground and clamped.

3.09 CONTROL WIRE

A. Control wiring between the Hunter Decoder and electric valves shall be buried in main line trenches or in separate trenches. Electrical connection at valve will allow for pigtail so solenoid can be removed from valve with sufficient slack to allow ends to be pulled 12" above ground for examination and cleaning.

B. An expansion loop shall be provided at every valve at 100' o.c. Expansion loop shall be formed by wrapping wire at least eight times around a 3/4" pipe and withdrawing pipe.

C. Electrical connections to electric control valves shall be made with King greased filled wire nuts.

Power Connections: Electrical connections to power and signal wires shall be made using 3M 82-A2 power cable splice kits.

3.11 COMMUNICATION CABLE

Communication cable between the controller and electric valves shall be buried in main line trenches or in separate trenches. Electrical connection at valve and decoder will allow for pigtail so solenoid can be removed from valve with sufficient slack to allow ends to be pulled 12" above ground for examination and cleaning.

Electrical connections to receivers shall be made with DBY connector kits.

3.12 SPRINKLER HEADS

A. General Provisions:

1. Sprinkler heads shall be installed as designated on the shop drawings. Heads shall be installed on flexible PVC or swing joints as indicated per installation details. Top to be flush with finish grade or top of curb, unless otherwise indicated.

2. Spacing of heads shall not exceed the maximum indicated on the shop drawings (unless directed by the Owner). In no case shall the spacing exceed the maximum recommended by the manufacturer.

B. Head Types:

1. Sport Field Rotary Sprinkler Heads: Shall be installed on 1” Rain Bird TSJ swing joints and be set with top of head flush with finish grade, unless otherwise indicated.

2. Pop-up- Rotary Sprinkler Heads: Shall be installed on ¾” flexible PVC and be set with top of head flush with finish grade, unless otherwise indicated. Heads installed at curb shall have 9" between perimeter of head and concrete. Heads placed at edge of pavement having no curb shall be installed 9" from edge of pavement.

3. Spray Pop-up Sprinkler Heads: Shall be installed on flexible PVC and be set with top of head flush with finished grade. Sprinkler heads placed adjacent to curbs will be installed 9" from concrete. Sprinkler heads placed adjacent to pavement having no curb shall be installed 9" from the edge of pavement.

4. Bubblers: Shall be installed on flexible PVC and placed at the center of the tree root ball. If two bubblers are required per tree they shall be set 180° apart.

3.13 NETAFIM TECHLINE CV IRRIGATION LINE INSTALLATION

A. Techline CV is designed for use in surface and sub-surface applications utilizing a grid design, the result being a complete wetted area within the grid. Techline CV

drip irrigation tubing shall be installed with the top of the tubing at 3" below grade specified.

B. Techline CV shall have dripper flow rates of 0.9 gallons per hour with drippers spaced at 12" intervals. The drippers are designed to regulate flow at the specified output from 15 PSI to 70 PSI with maximum recommended pressure of 50 PSI when using unclamped insert fittings. The dripper tubing shall be spaced 12' on center except as indicated on the details for slopes.

C. It is necessary to use Techline CV insert fittings for all Techline CV drip tubing connections to ensure the integrity of the connection. Techline CV drip tubing has an I.D. of 0.56".

D. Install drip tubing as detailed on the drawings and as specified. Use only Teflon tape on all threaded connections.

3.14 BACKFLOW PREVENTER

Comply with local codes for installation of backflow preventer. In absence of local codes, install in accordance with manufacturer's written instructions.

3.15 BOOSTER PUMP

A. Naples Electric Booster Pump System - Model: VFD-LP-CENT-10-230-3 or approved equal.

B. PURPOSE:
To provide a complete prefabricated variable frequency drive skid mounted fiberglass enclosed pressure demand centrifugal pump system. The manufacture will manufacture, flow test, and warrant the system to meet all specified operating requirements described below and in system detail. The system shall be Model # VFD-LP-CENT-10-230-3 as manufactured by Naples Electric Motor Works, Inc. of Naples, Fl USA 239-591-1313. The pump system will have a UL Listed Industrial Control Panel. This specification describes the general components and minimal operating requirements and shall not be construed as a manufacturing guide or complete list of required system components.

C. FRAME:
The pump station will have a prefabricated welded 53"x 62" aluminum structural skid. Aluminum supports will be provided for mounting of control enclosure. The frame shall be installed on a 5' 5" x 6'2" x 4" reinforced concrete pad.

D. FIBERGLASS ENCLOSURE:
The pump station will be completely enclosed by a Forest Green fiberglass cover and is manufactured to ASSE 1060 specifications with a minimum 3/16" thick thixotropic resin reinforced with fiberglass strand, protected with 18 to 20 mils of UV isopthalic polyester gel coat. The lockable flip top lid design allows access for

maintenance with an overlapping lid seam design for weatherproofing and vandal resistance.

E. PUMP AND MOTOR:
The pump will be a close coupled centrifugal pump with back pullout design from volute allowing easy removal and repair without disturbing piping connections. The volute case, impeller, and motor adapter bracket will be cast iron type ASTM A48 Class 30. The shaft sleeve will be stainless steel type AISI 416SS. The shaft seal will be a mechanical type with 18-8 SS stainless steel metal parts, “Buna-N” rubber bellows, ceramic stationary seat, and carbon rotating head. The motor will be rated 10 HP, 3450 RPM, 230 volt, 60Hz., 3 phase.

F. PUMP PREFORMANCE:
The required pump performance with a minimum of 50PSI supply pressure is as follows: 1) Discharge pressure of 90 psi, 2) maximum flow of 120 GPM, 3) minimum flow of 50 GPM.

G. IRRIGATION PUMP CONTROLS:
The Variable Frequency Drive and all electronic control circuitry will be mounted in a fiberglass NEMA 3R rated enclosure with a gasketed lockable-hinged door with stainless steel twist lock latches.

H. OPERATION:
The system utilizes a Variable Frequency Drive to operate as a pressure demand start reduced flow retirement. The station maintains a fixed discharge pressure that compensates for varying flow demands within the capabilities of the pump.

I. SOFT/START STOP
The system soft starts to the operating pressure and soft stops at retirement via a programmable ramp time. System starting and stopping can be either pressure demand no-flow retirement or clock start from the irrigation controller.

J. LOW PRESSURE PROTECTION:
The system will shut down if the pressure drops below a preset pressure for 30 seconds and a low-pressure fault will be indicated. The system will remain off until reset.

K. HIGH PRESSURE PROTECTION:
The system will shut down if the pressure rises above a preset pressure for 30 seconds and a high pressure fault will be indicated. The system will remain off until reset.

L. DRIVE FAULT:
The drive has numerous overload and safety faults including phase loss, low/high voltage, high current, internal heat sink overheat, ground fault, short circuit fault, the system will shut off and the fault will appear on the operator display. All key parameters will also be recorded at the time of fault and the last 10 faults are stored.

M. OVER HEAT PROTECTION:
The system has a thermal sensor in the volute of the pump, which sends a signal to the VFD before high temperature damages equipment.

N. PROTECTION EQUIPMENT:
NEMA Type 3R fused disconnect with type R current limiting fuses.
Silicon Oxide Varistor voltage surge protection per phase.
Thermostat controlled cooling fan for control enclosure.

O. VARIABLE FREQUENCY DRIVE:
VFD with the following features; overload capacity nominal 110% for 60 sec 150% peak, power loss ride-thru: 2 sec, auto restart after power loss or reset table fault, feedback signal loss detection, 32 bit microprocessor logic, LCD keypad display, 5 lines x 16 characters back lit with copy function, non-volatile memory/program retention, elapsed time monitor, RS-422/485 port: Modbus protocol, meter functions: Volt, amp, kilowatt, MTBF 28 years.

P. PRESSURE TRANSMITTER:
A 4-20ma pressure transducer will provide a feedback signal to the VFD PI control for constant pressure control. The transmitter is CE recognized with 17-4 PH stainless steel housing and meets NEMA 4 (IP65) protection ratings, and is shock rated 200g and vibration rating of 20 g 50-2000Hz. Pressure range is 0-100 PSI with a 300 PSI over pressure rating.

Q. HYDROMETER:
Will provide total and rate display +/- 2% accuracy within its rated flow range at 10 to 225 psi. with normally closed solenoid valve.

R. IRRIGATION CONTROLLER:
Controller will be Hunter Acc-99D with 99 station 2 wire.

S. DISCHARGE PIPE MANIFOLD:
The pipe discharge manifold shall be constructed of galvanized steel pipe with roll groove fittings. A butterfly valve will be provided on headers 4” or greater and a bronze ball valve on anything smaller. A 2-gallon capacity pressure tank will be installed on the pump skid under the cover and connected to the header.

T. SUCTION LINE:
The minimum size suction line shall be 3” diameter or larger as required for a maximum of 5 feet per second velocity flow. Any above ground pipe exposed to sunlight shall be schedule 40 galvanized steel with roll-grooved fittings. All suction pipes shall be Yelomine grooved pipe.

U. WARRANTIES:
The pumping station components will be warranted by the manufacturer for a period of one year from date of manufacture.

3.16 COMPLETION

A. Flushing: Before sprinkler heads are set, the Contractor shall flush the lines thoroughly to make sure there is no foreign matter in the lines.

The Contractor shall flush the main lines from dead end fittings for a minimum of five minutes under a full head of pressure.

B. Testing: The Contractor shall notify Owner's Representative and Owner forty-eight (48) hours in advance of testing.

Prior to backfilling of main line fittings, Contractor shall fill the main line piping with water, in the presence of the Owner/Owner's Representative, taking care to purge the air from it by operating all the sprinkler control valves one or more times and/or such other means as may be necessary. A small, high pressure pump or other means of maintaining a continuous water supply shall be connected to the main line and set so as to maintain 125 PSI in the main line system for two (2) hours without interruption. When this has been accomplished and while the pressure in the system is still 125 PSI, leakage testing shall be performed in accordance with AWWA Standard C-600. Pressure readings shall be noted and make up water usage shall be recorded. Should the rate of make up water usage indicate significant leakage, the source of such leakage shall be found and corrected and the system then retested until the Owner/Owner's Representative is satisfied that the system is reasonably sound. Lateral line testing shall be conducted during the operating testing of the system by checking visually the ground surface until no leaks in this portion of the system are evident. Leaks shall be repaired or paid for by the Contractor at any time they appear during the warranty period.

C. Adjustment and Coverage of System: Coordinate pressure testing with adjustments and coverage test of system so both may occur at the same time. The Contractor shall balance and adjust the various components of the system so that the overall operation of the system is most efficient. This includes a synchronization of the controllers, adjustments to pressure regulators, pressure relief valves, part circle sprinkler heads, and individual station adjustments on the controllers.

3.17 WARRANTY

A. The Contractor shall fully warrant the landscape irrigation system for a period of one (1) year after the written final acceptance and will receive a written confirmation from the Owner that the warranty period is in effect.

B. During the warranty period, the Contractor will enforce all manufacturer's and supplier's warranties as if made by the Contractor himself. Any malfunctions, deficiencies, breaks, damages, disrepair, or other disorder due to materials, workmanship, or installation by the Contractor and his suppliers shall be immediately and properly corrected to the proper order as directed by the Owner

C. Any damages caused by system malfunction shall be the responsibility of the Contractor who shall make full and immediate restoration for said damages.

END OF SECTION 328400