Northern Palm Beach County Improvement District
359 Hiatt Drive, Palm Beach Gardens, FL 33418
Phone 561-624-7830 ~ Fax. 561-624-7839
Find us on-line at www.npbcid.org

ENGINEERING STANDARDS MANUAL

Last revised January 24, 2024

This Manual is intended to assist Northern Palm Beach County Improvement District's (NPBCID) District Engineer, Consulting Engineers and Project Engineers in development of Northern financed facilities**.** It is also intended to assist developers, utilities and municipalities seeking plat and/or permit approval to construct improvements within Northern's rights-of-way, easements or to utilize and/or discharge into surface water management systems owned, operated and maintained by Northern. This Manual is intended to be amended and updated periodically to reflect current maintenance needs, changes in materials and construction methodologies, and changes in local and federal regulatory requirements. All information contained in this manual is available in print or on the web.

Comments, questions and suggestions regarding the content of this Manual should be directed to:

Northern Palm Beach County Improvement District
359 Hiatt Drive
Palm Beach Gardens, FL 33418
561-624-7830
www.npbcid.org

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SECTION I - INTRODUCTION

A. Northern History and Organizational Structure

The Northern Palm Beach County Improvement District (NPBCID/Northern) was created by the Florida Legislature in 1959 (Chapter 2000-467, Laws of Florida) for the purpose of reclaiming the lands within its boundaries for water control and water supply purposes and to protect the land within its boundaries from the effects of storm and drainage water. Northern has since received additional authority from the Legislature to provide public infrastructure such as potable water facilities, wastewater management facilities, modern roadway systems, preserves and parks.

Northern is a governmental entity with special taxing authority and has only those specific powers granted to it by the Legislature. It has no police powers (i.e., zoning authority, land use authority or subdivision approval authority). It is a service provider and is subject to all development requirements of the local government in which it is located. Revenues are generated from special assessments levied against only those lands where service is provided. The special assessments are included on the landowners' real property tax bills and are collected annually by the Palm Beach County Tax Collector.

Northern is located in the northeast portion of Palm Beach County and its boundaries extend generally to the Lake Worth Drainage District on the south, Alternate A1A on the east, the Palm Beach County line on the north and the L-8 Canal on the west, excluding, among others, all municipalities and other water control districts in existence at the time Northern was created.

Northern is governed by a five-member Board of Supervisors three of whom are elected by the landowners within Northern's boundaries. Landowners of real property within the District's boundaries, with the exception of landowners who own land not currently subject to the District's levy of assessments or who have not paid those assessments for the previous year, will be qualified to vote in the landowner seat election process. In 2010 the Florida Legislature approved changes to Northern's enabling legislation that allows four out of five seats to be filled by popular vote. The term of office for each Supervisor is four years. If a vacancy occurs, the remaining Supervisors fill the vacancy until the next annual election.

SECTION 2. - ENGINEERING ROLES & SELECTION PROCESS

The following Section is intended to generally describe the duties and responsibilities of Northern's Project Engineers, Consulting Engineers and District Engineer during the development of the Plan of Improvement, Engineer's Report, design, bidding, award and construction. These duties and responsibilities will be further defined as scopes of work in each Project/Consulting Engineer's Contract and subsequent Purchase Orders. This section is further intended to explain the procedure for the selection & delegation of projects to consulting engineers.

A. Water Management Plan/Plan of Improvements

1. District Engineer Responsibility

The District Engineer is responsible for the preparation of the Water Management Plan/Plan of Improvement. When complete, the District Engineer shall deliver and present the signed and sealed Water Management Plan/Plan of Improvement for review by Northern Staff and subsequently at Northern Board meetings, Public Hearings and Bond Validation Hearings. The District Engineer alone shall provide all interpretations of the Water Management Plan/Plan of Improvement and its contents.

Included in the Water Management Plan/Plan of Improvement there shall be a general description of:

- Improvements to be financed by Northern, and then transferred to other Governmental Entities.
- Improvements to be financed and maintained by Northern.
- Improvements to be financed by others and maintained by Northern.

The District Engineer shall:

- Prepare and circulate draft copies of the Plan to Northern Staff, its professional consultants and appropriate landowner(s).
- Compile the most recent information of Northern's policies, requirements and facilities.

For Improvements that are transferred to other government agencies the District Engineer shall:

- Obtain proof from the Project/Consulting Engineer of confirmation from the accepting Governmental Agencies.

Please note, the requirements for acceptance of the improvements should be provided in writing from the accepting Governmental Agencies (see Project/Consulting Engineer).

2. Project Engineer's Responsibility:

The Project Engineer is responsible for:

- Identifying those Improvements that are to be included in the Water Management Plan/Plan of Improvement.

- The conceptual design and certified estimate of the probable cost of construction for those Improvements.
- Providing the legal descriptions, sketches, diagrams and exhibits together with any other data or information necessary for the District Engineer to complete the Water Management Plan/Plan of Improvement.

The Project Engineer shall:

- Assist the District Engineer as necessary and coordinate with the Landowners to identify which Improvements shall be proposed for inclusion in the Water Management Plan/Plan of Improvements.
- Develop the drainage and design requirements/criteria for the project and their impact on existing facilities.
- Obtain information regarding Northern's existing drainage facilities from the District Engineer.
- Provide the requirements necessary for acceptance of the Improvements by other governmental agencies and provide a Letter of Intent of Acceptance from those agencies.
- Prepare the conceptual design and cost estimates for the Improvements.
- If requested, provide the District Engineer additional information as needed for completion of the Water Management Plan/Plan of Improvement.

B. Engineers Report

1. District Engineer's Responsibility:

The District Engineer is responsible for the preparation of the Engineer's Report. The Engineer's Report identifies the extent to which the land within a specific Unit of Development benefits from or is damaged by the implementation of Northern's Plan of Improvements (also known as the **"**determination of benefits**"**). When complete, the District Engineer must deliver and present the signed and sealed Engineer's Report for review by Northern Staff and subsequently at Northern Board meetings, Public Hearings and Bond Validation Hearings. The District Engineer alone must provide all interpretations of the Engineer's Report.

The District Engineer shall:

- Evaluate and quantify the unique impacts of each Improvement included within the Water Management Plan/Plan of Improvement.
- Establish the benefits to the lands due to the proposed Improvements and the proposed Assessment of Benefits methodology.
- Coordinate with Northern Staff, Landowner(s), Project Engineer and others as necessary to define the proposed Improvements and benefits.
- Review all preliminary and/or conceptual Agreements and Permits and advise Northern Staff as to impacts on the proposed Improvements.
- Review the proposed Improvement cost estimates that are signed and sealed and provided by the Project Engineer, and provide comments to Northern Staff.

2. Project Engineer's Responsibility:

The Project Engineer is responsible for the provision of the technical data necessary for the District Engineer to conclude the determination of benefits. This data will include, but is not limited to:

- calculations of pervious vs. non-pervious area
- reports quantifying projected traffic trips
- calculation of water and sewer "equivalent residential connections"
- Any other report quantifying the unique impacts of each Improvement included as a part of the Water Management Plan/Plan of Improvement.

The Project Engineer shall:

- Develop a construction-phasing schedule.
- Obtain from the Landowner(s) and provide all Preliminary Agreements and Permits required for or having impact on the Improvements.
- Provide an assessment of the impacts to Northern.
- If requested, provide the District Engineer additional information as needed for completion of the Engineer's Report.

C. Design and Bidding Phase Services:

1. District Engineer's Responsibility:

Review for constructability only, the Project Engineer's design for proposed Improvements which will be owned, operated and maintained by the District or by other governmental entities. This policy assumes competent internal review by those other governmental entities which will ultimately accept their Improvements. The "review for constructability" will be carried out to the extent necessary to enable the District Engineer to make recommendations to Northern's Staff and ultimately to Northern's Board of Supervisors.

The District Engineer's review of the Project Engineer's Bid Phase Service is limited to that deemed necessary to advise Northern's Staff regarding compliance with Northern policy.

The District Engineer shall:

- Provide Northern's criteria to the Project Engineer for Improvement design purposes.
- Provide general review of Improvement design concepts for conformance with the concepts of the Water Management Plan/Plan of Improvement.
- Review construction plans for general conformance with the concepts of the Water Management Plan/Plan of Improvement.
- Review the proposed utility corridors, alignments and types of property rights, as they relate to Northern facilities, which will be needed to construct the plan.
- Administer the distribution of Bid Documents, including plans, specifications, addenda and pre-bid meeting minutes.

- Coordinate responses to contractor questions with Project Engineer to be included in addenda.

2. The Project Engineer's Responsibility:

The Project Engineer is solely responsible for all work relating to the design and permitting of all Improvements contained within Northern's Water Management Plan/Plan of Improvement. This responsibility includes, but is not limited to, ensuring compliance with all applicable Northern, municipal and county design criteria, together with any and all regional, State and Federal criteria.

Northern's General Counsel shall coordinate with the successful bidder to obtain the necessary documentation, and complete the Contract documents.

The Project Engineer shall:

- Provide the District Engineer with all engineering assumptions, calculations, studies and reports necessary for the design of the Improvements.
- Prepare and submit plans, specifications and bid documents to the District Engineer.
- Apply for and, if not the obligation of the landowner(s), secure all required conceptual and construction permits, properties interests and licenses, plus approvals and provide copies to Northern.
- Engage appropriate sub-consultants (including Survey, Structural, Electrical, Architectural, Environmental, Geotechnical, Landscape and Irrigation services) which may be required to design and administer construction of the Improvements.
- Identify utility corridors, rights-of-way and easements which will be required for implementation of the Water Management Plan/Plan of Improvements and subsequent operation and maintenance of Northern owned Water Management Plan/Plan of Improvements. Obtain the necessary approvals and acceptance from Northern, the Landowner(s), District Engineer, Governmental Entities and Utility Companies as required.
- Prepare the construction plans and specifications, and provide the necessary project specific information, including contract duration and milestones, special conditions, Addenda, etc., to the District General Counsel. (See NPBCID Project Engineer Checklist in Section 4 of this manual.)
- Prepare all technical documentation related to the project.
- Provide original sets of documents, including plans and specifications, to the District Engineer for distribution during the bid process.
- Be responsible for pre-bid conferences, and provide responses to contractor questions to be included in addenda.
- Please note that any improvements not being bonded by Northern must be approved through the Northern permitting process. See Section 4.

D. Construction Phase Services:

1. District Engineer's Responsibility:

The District Engineer shall perform review and oversight tasks as necessary to ensure compliance with Northern policy.

2. Project Engineer's Responsibility:

The Project Engineer will solely be responsible for providing Construction Phase Services and shall report directly to the District Engineer.

The Project Engineer shall:

- Determine the necessity of and conducting pre-construction conferences.
- Coordinate with all necessary governmental entities.
- Review, approval, clarification and interpretation of shop drawings and construction documentation.
- Procure and review testing reports.
- Document and resolve of all construction issues.
- Make recommendations regarding Change Orders and Payment Applications which are due on the Monday two weeks prior to the monthly Northern Board of Supervisors meeting.
- Obtain, review and approve record drawings for improvements.
- Obtain all releases and approvals for all improvements.
- Prepare documentation for conveyance of improvements to other governmental entities
- Prepare certifications of completion for improvements and warrantee inspections.
- Develop a construction administration program.
- Provide a Project Field Representative to monitor and inspect construction activities.
- If necessary, provide testing through sub consultants (geotechnical, surveyors, etc.).
- Copy Northern Staff on all written correspondence, reports, field observations, field orders, testing reports, change orders, etc., in a timely manner.
- Communicate with Northern Staff on a regular basis and as requested.
- Conduct construction coordination meetings and issue meeting notes.
- Coordinate document construction issues and resolve open items.
- Authorize minor changes for construction works not involving a change in time or money.
- Prepare and distribute to Northern Staff monthly project (Contract) status reports, which are due on the Monday, two weeks prior to the monthly Northern Board of Supervisors Meeting.
- Provide Engineer's Estimates, signed and sealed, Probable Construction Cost and any cost analysis as needed during construction administration.

- Schedule and conduct the Improvements one-year correction period walkthrough and follow-up in accordance with the Contract Documents.
- Provide all certifications, Record Drawings (electronic and Autocad formats), operational manuals and warranties to Northern.

E. Procedure for the Selection and Award of Projects to Consulting Engineers:

1. Except in those instances where the provisions of following subparagraph 2 apply, for each project that will require the services of a Consulting Engineer, a general scope of services shall be developed by Staff. In selecting the Consulting Engineer that will be requested to provide a proposal, Staff shall consider the Consulting Engineer's past performance and expertise for the services being requested. Staff will submit the scope of services to the Consulting Engineer and request a proposal for the services.

2. For a project that the fee for services is estimated to exceed $35,000 and/or the basic cost of construction is anticipated to exceed $325,000, Staff will select a minimum of three Consulting Engineer firms that Staff believe have the appropriate expertise. The selected firms will be asked to provide an approach methodology for the subject project's services.

A "Cone of Silence" restriction shall be applied in each instance where Consulting Engineers are requested to submit an approach methodology proposal. It shall prohibit any communication, except for electronic or written correspondence, regarding the request between any Consulting Engineer representative seeking the award and any Northern Board Member or Staff member authorized to rank the proposals or award the project. The Cone of Silence shall terminate at the time the project is awarded to a Consulting Engineer.

Staff shall forward the approach methodology proposals to the Engineering Review Committee. The members of the Engineering Review Committee shall rank the Consulting Engineers based upon: (a) the approach methodology that provides best desired result within the estimated time frame for the project, and (b) a firm's expertise and past performance. Staff shall then proceed to negotiate a Purchase Order that reflects the fee, terms and obligations of the project with the Consulting Engineer receiving the highest ranking. The Purchase Order shall be submitted to Northern's Board of Supervisors for consideration. If Staff is not able to negotiate a Purchase Order with the highest ranked Consulting Engineer, Staff shall then proceed to negotiate the Purchase Order with the next highest ranked Consulting Engineer.

In those instances where there is a tie between the highest ranked Consulting Engineers, the Committee members shall discuss their selection considerations and thereafter do another ranking. If the new ranking results in another tie, the Consulting Engineers which are tied shall be invited to make a presentation to Northern's Board of Supervisors, following which the Board shall vote on the final selection.

3. In the event of an emergency requiring immediate action, the Executive Director may authorize a Purchase Order to a Consulting Engineer or Project Engineer to address the emergency without following the aforementioned award procedures. The Executive Director shall promptly notify the Engineering Review Committee of this action, followed by notification to the Board of Supervisors at the next Board meeting.

SECTION 3 - CONSTRUCTION DOCUMENT SUBMITTALS

Enclosed are copies of the standard documents which may be required by Northern prior to placing a project out to bid. In addition to these documents all permits necessary to perform the work, must be received or sufficiently into the permit process, to ensure that no material modifications to the plans will be required and that all permits and approvals will be received prior to Northern awarding a contract. Drawing standards as indicated within this Section are intended to provide the Project/Consulting Engineers with a uniform and consistent drawing format for Northern Projects. This also provides Northern with required information for subsequent operation, maintenance and permitting activities within each of the Units of Development. A standard certification to Northern is included within this Section.

Note: If a system is to be turned over to another regulatory agency the Engineer shall abide by that agency's standards and details if in conflict with Northern's standards.

A. Draft Surety Protection Letter

[DATE]

Draft Surety Protection Letter

Northern Palm Beach County
Improvement District
359 Hiatt Drive
Palm Beach Gardens, FL 33418
Attention: Executive Director
Re: _____ [name of Contractor]
_____ [name of construction Project]
_____ [Surety Bond No._____]

Please be advised that _____, as Surety on the above captioned Bond (the "Bond"), hereby consents to and acknowledges payments, including final payment, by Northern Palm Beach County Improvement District (the "Owner") to the Contractor on the above captioned construction project (the "Project"). We also advise that we are aware that the Contractor's requests to the Owner for payment involve or have involved a number of vendors (including subcontractors and material men), some of whom have submitted Notices of Non-Payment and who have or may have claims for non-payment under the Bond.

The undersigned Surety hereby acknowledges its obligation to indemnify and hold harmless the Owner from any and all responsibility in connection with legitimate unpaid obligations of the Contractor arising out of the above captioned construction Project.

This letter confirms that the Bond is in full force and effect and is a confirmation of the Surety's existing responsibility and obligations to the Owner under the Bond. However, it should not be interpreted as any additional undertaking beyond that which the Surety has assumed under the Bond.

Thank you for your consideration in this matter.

B. Site Preparation and Non-Interference Agreement (Last Revision Date: December 5, 2003)

SITE PREPARATION AND NON-INTERFERENCE AGREEMENT
(UNIT OF DEVELOPMENT NO. __)

THIS SITE PREPARATION AGREEMENT (the "Agreement") shall be effective as of the _____ day of_____, 20__, (the "Effective Date") and is being entered into by and between NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT, 359 Hiatt Drive, Palm Beach Gardens, Florida 33418, (hereinafter referred to as "Northern"), and _____, (hereinafter referred to as the "Landowner").

W I T N E S S E T H :

WHEREAS, Northern has previously created or is in the process of creating its Unit of Development No. __ and one aspect of its implementation of public works for this Unit of Development is its intent to award a contract to a contractor (the "Contractor") for the installation and/or construction of those works, facilities and improvements described and identified in attached Exhibit "A" (the "Improvements"); and

WHEREAS, the installation and/or construction of the Improvements is dependent upon the Landowner's timely preparation and provision to the Contractor of an acceptable site for the installation and/or construction of the Improvements; and

WHEREAS, the Landowner acknowledges that its failure to timely provide an acceptable site to the Contractor may prevent the Contractor from timely commencing its implementation and/or construction of the Improvements, which may result in the Contractor being entitled to seek reimbursement and/or claims from Northern for damages, including but not limited to economic losses and/or delay damages; and

WHEREAS, the Landowner further acknowledges that any interference by it or its employees, agents or contractors (together the "Landowner Group") with the Contractor's implementation and/or construction of the Improvement or damage by them to any Improvement during or following installation may result in the Contractor being entitled to seek reimbursement and/or claims for damages including but not limited to economic losses, delay damages and/or property damages from Northern.

NOW, THEREFORE, in consideration of the mutual covenants and promises hereinafter set forth, the sufficiency of consideration for which is hereby acknowledged, Northern and the Landowner agree as follows:

ARTICLE I. RECITALS. The recitals set forth above are hereby deemed true and correct to the best of the knowledge of the parties hereto and are incorporated herein by this reference.

ARTICLE II. TERM OF AGREEMENT. The parties agree that this Agreement shall continue in full force and effect from its Effective Date through and including the last date that the Contractor would be entitled to seek claims or damages from or against Northern as a result

of: (A) the Landowners failure to timely provide an acceptable site to the Contractor for the installation and/or construction of the Improvements, (B) as a result of the Landowner Groups interference with the Contractors implementation and/or construction of the Improvements or (C) the Landowner Groups damage to an Improvement.

ARTICLE III. SITE PREPARATION AND PROVISION. The Landowner does hereby agree to timely provide on behalf of Northern and the Contractor an acceptable site in accordance with the timeframes and specifications set forth in attached Exhibit "B".

ARTICLE IV. NON-INTERFERENCE. The Landowner for itself and the Landowner Group does hereby agree that it and they shall not interfere with the Contractor's implementation and/or construction of the Improvements nor cause any damage to an Improvement during or following same's installation and/or construction.

ARTICLE V. INDEMNIFICATION. If, however, the Landowner or the Landowner Group should, for whatever reason, fail to comply with the requirements set forth in Articles III and IV then in such event the Landowner shall be obligated to indemnify, defend and hold Northern harmless of, from and against any and all liability, loss, claims, demands, liens, damages, penalties, fines, judgments, interest, costs and/or expenses (including, without limitation, reasonable attorneys fees and litigation costs if incurred) which are directly or indirectly incurred, arise out of, relate to, or result from such failure.

ARTICLE VI. NOTICE OF CLAIM. Northern does hereby agree that within ten (10) days of its receipt of a written claim from the contractor that any of the conditions above exist or for obligations or damages for which the Landowner has herein indemnified Northern, that it shall provide written notice of such claim to the Landowner.

ARTICLE VII. MISCELLANEOUS.

A. Notice Format. All notices required or permitted under this Agreement shall be in writing (including telex, facsimile or telegraphic communication) and shall be (as elected by the party giving such notice) hand delivered by prepaid express overnight courier or messenger service, telecommunicated, or mailed by registered or certificated mail (postage prepaid), return receipt requested, to the following addresses:

As to NORTHERN: **Northern Palm Beach County Improvement District**
359 Hiatt Drive
Palm Beach Gardens, Florida 33418
Attn: Executive Director
Telephone: (561) 624-7830
Facsimile: (561) 624-7839
with a copy to:
Caldwell, Pacetti, et al
One Clearlake Centre
250 South Australian Avenue, Suite 600
West Palm Beach, FL 33401
Telephone: (561) 655-0620
Facsimile: (561) 655-3775

As to LANDOWNER:

B. Entire Agreement. This Agreement constitutes the entire understanding and agreement between the parties with respect to the subject matter hereof.

C. Binding Effect. All of the terms and provisions of this Agreement, whether so expressed or not, shall be binding upon, inure to the benefit of, and be enforceable by the parties and their respective legal representatives, successors, and permitted assigns.

D. Assignability. This Agreement may not be assigned without the prior written consent of all parties to this Agreement.

E. Severability. If any part of this Agreement is contrary to, prohibited by or deemed invalid under applicable law or regulation, such provision shall be inapplicable and deemed omitted to the extent so contrary, prohibited or invalid, but the remainder hereof shall not be invalidated thereby and shall be given full force and effect so far as possible.

F. Governing Law and Venue. This Agreement and all transactions contemplated by this Agreement shall be governed by, and construed and enforced in accordance with, the laws of the State of Florida without regard to any contrary conflicts of law principle. Venue of all proceedings in connection herewith shall lie exclusively in Palm Beach County, Florida, and each party hereby waives whatever its respective rights may have been in the selection of venue.

G. Waiver of Jury Trial. The parties hereby waive any rights any of them may have to a jury trial in any litigation arising out of or related to this Agreement and agree that they shall not elect a trial by jury. The parties hereto have separately, knowingly and voluntarily given this waiver of right to trial by jury with the benefit of competent legal counsel.

H. Headings. The headings contained in this Agreement are for convenience of reference only, and shall not limit or otherwise affect in any way the meaning or interpretation of this Agreement.

I. Effective Date. The effective date of this Agreement shall be as of the date it has been executed by both the parties hereto.

J. Enforcement of Remedies. The failure of any party to insist on the strict performance of any of the terms and conditions hereof shall be deemed a waiver of the rights to remedies that the party may have regarding that specific instance only, and shall not be deemed a waiver of any subsequent breach or default in any terms or conditions.

K. Construction. The parties acknowledge that each has shared equally in the drafting and preparation of this Agreement and, accordingly, no Court or Administrative Hearing Officer construing this Agreement shall construe it more strictly against one party than the other and every covenant, term and provision of this Agreement shall be construed simply according to its fair meaning.

L. Attorneys Fees. With the exception of legal expenses which are required to be paid pursuant to above Article V, it is hereby understood and agreed that in the event any lawsuit in the judicial system, federal or state, is brought to enforce compliance with this Agreement or interpret same, or if any administrative proceeding is brought for the same purposes, each party to said action shall be responsible for its own attorney's fees and costs, including appellate fees and costs.

IN WITNESS WHEREOF, the parties have executed this Agreement on the dates hereinafter written.

Executed by NORTHERN this _____ day of_____ , 20__.

NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT

[SEAL]

ATTEST: By:_____
Signature

_____ _____
Secretary Print

_____
Title

Executed by the LANDOWNER this _____day of_____, 20__.

_____

By: _____

Exhibit "A"
[Description of Northern Improvements]

Exhibit "B"
[Site Preparations Timeline]

Timeline Required Site Preparation

C. Irrevocable Standby Letter of Credit (Last Revision Date: December 5, 2003)

IRREVOCABLE STANDBY LETTER OF CREDIT NO.

ISSUE DATE:

BENEFICIARY
NORTHERN PALM BEACH COUNTY
IMPROVEMENT DISTRICT
359 HIATT DRIVE
PALM BEACH GARDENS, FL 33418

APPLICANT

ISSUING BANK

AMOUNT:

EXPIRATION DATE:

FOR THE ACCOUNT OF _____

WE HEREBY ESTABLISH OUR IRREVOCABLE STANDBY LETTER OF CREDIT NO. _____ IN THE BENEFICIARY'S FAVOR FOR AN AMOUNT NOT EXCEEDING IN THE AGGREGATE USD $ _____(U.S. DOLLARS) AVAILABLE BY YOUR DRAFT(S) DRAWN ON US AT SIGHT BEARING THE CLAUSE, "DRAWN UNDER IRREVOCABLE STANDBY LETTER OF CREDIT NO. AND ACCOMPANIED BY:

1.) A STATEMENT PURPORTEDLY SIGNED BY AN AUTHORIZED REPRESENTATIVE OF NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT IN THE FORM OF ANNEX "A" ATTACHED HERETO, APPROPRIATELY COMPLETED.

SPECIAL CONDITION:
THE AMOUNT AVAILABLE FOR DRAWING(S) HEREUNDER MAY BE REDUCED BY THE ISSUING BANK UPON THE ISSUING BANK'S RECEIPT OF A STATEMENT PURPORTEDLY SIGNED BY AN AUTHORIZED REPRESENTATIVE OF NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT IN THE FORM OF ANNEX "B" ATTACHED HERETO, APPROPRIATELY COMPLETED.

THIS IRREVOCABLE STANDBY LETTER OF CREDIT WILL EXPIRE ON THE EARLIER TO OCCUR OF:

A.) _____, 20 ___

OR

B.) THE DATE UPON WHICH WE RECEIVE A STATEMENT PURPORTEDLY SIGNED BY AN AUTHORIZED REPRESENTATIVE OF NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT IN THE FORM OF ANNEX "C" ATTACHED HERETO, APPROPRIATELY COMPLETED.

PAGE TWO OF IRREVOCABLE STANDBY LETTER OF CREDIT NO. _____.

THIS IRREVOCABLE STANDBY LETTER OF CREDIT, TOGETHER WITH THE ATTACHED ANNEXES "A", "B" AND "C", SETS FORTH IN FULL THE TERMS OF OUR UNDERTAKING, AND SUCH UNDERTAKING SHALL NOT IN ANY WAY BE MODIFIED, AMENDED OR AMPLIFIED BY REFERENCE TO ANY DOCUMENT OR INSTRUMENT REFERRED TO HEREIN OR IN WHICH THIS LETTER OF CREDIT IS REFERRED TO OR TO WHICH THIS LETTER OF CREDIT RELATES AND ANY SUCH REFERENCE SHALL NOT BE DEEMED TO INCORPORATE HEREIN BY REFERENCE ANY DOCUMENT OR INSTRUMENT.

WE HEREBY AGREE THAT EACH DRAFT DRAWN AND PRESENTED IN COMPLIANCE WITH THE TERMS OF THIS IRREVOCABLE STANDBY LETTER OF CREDIT WILL BE DULY HONORED BY US IF PRESENTED TO US AT OUR OFFICE LOCATED AT:

ADDRESS: _____

ATTENTION: _____

DURING REGULAR BUSINESS HOURS ON ANY DATE OR DATES ON OR BEFORE THE EXPIRATION DATE WITH THE CUTOFF TIME FOR PRESENTATION OF DRAFTS ON SAID EXPIRATION DATE TO BE 3:00 P.M. LOCAL TIME.

EXCEPT SO FAR AS OTHERWISE EXPRESSLY STATED, THIS DOCUMENTARY CREDIT IS SUBJECT TO THE "UNIFORM CUSTOMS AND PRACTICE FOR DOCUMENTARY CREDITS: (CURRENT REVISION), INTERNATIONAL CHAMBER OF COMMERCE, PUBLICATION NO. 500.

THIS IRREVOCABLE STANDBY LETTER OF CREDIT IS AVAILABLE BY SIGHT PAYMENT AT THE COUNTERS OF THE (*name and address of Bank Branch*).

BANK AUTHORIZED SIGNATURE

TITLE

PAGE THREE OF IRREVOCABLE STANDBY LETTER OF CREDIT NO.

ANNEX "A"

RE: (*name of bank*) Irrevocable Standby Letter of Credit No. _____.

The undersigned representative of Northern Palm Beach County Improvement District hereby certifies to Bank with reference to Irrevocable Standby Letter of Credit No. _____ issued by _____ Bank in favor of the undersigned Beneficiary that:

(1) The undersigned has approved for payment invoice(s) received by it in respect to construction or implementation of Improvements pursuant to that particular project identified as _____

(2) The undersigned has forwarded such invoices(s) to the Applicant of the Irrevocable Standby Letter of Credit No. _____ and payment of such invoice(s) has not been remitted in full within ten (10) business days after the due date of such invoices(s).

(3) (A) The amount of the approved and unpaid invoice(s) which is/are due and payable on the date of this Annex "A" is $ _____, and
(B) The draft accompanying this Annex "A" is in such amount.

(4) Upon our receipt of the amount demanded by this Annex "A",

(A) We will apply the same directly to the payment of the approved and unpaid invoice(s) referred to in paragraph (3) of this Annex "A", and
(B) No portion of said amount will be applied by us for any other purpose.

In witness whereof, the undersigned, as an authorized representative of Northern Palm Beach County Improvement District, has executed and delivered this Annex "A" as of the _____ day of
_____ , 20 .

NORTHERN PALM BEACH COUNTY
IMPROVEMENT DISTRICT

BY:
Signature
_____ (DISTRICT SEAL)
Print Name

President
Title

END OF ANNEX "A"

PAGE FOUR OF IRREVOCABLE STANDBY LETTER OF CREDIT NO. _____.

ANNEX "B"

RE: (*name of bank*) Irrevocable Standby Letter of Credit No. _____.

The undersigned representative of Northern Palm Beach County Improvement District hereby certifies to _____ Bank with respect to the above referenced Irrevocable Standby Letter of Credit No. _____that a progress payment has been paid by (*name of Applicant*) to Northern Palm Beach County Improvement District in the amount of _____ ($_____U.S.D). Therefore, Irrevocable Standby Letter of Credit No_____ should be reduced by an amount equal to the hereinabove specified paid progress payment amount.

In witness whereof, the undersigned, as an authorized representative of Northern Palm Beach County Improvement District, has executed and delivered this Annex "B" as of the ____ day of _____, 20 ____.

NORTHERN PALM BEACH COUNTY
IMPROVEMENT DISTRICT

BY: _____
Signature

_____
Print Name

_____ (DISTRICT SEAL)

President_____
Title

END OF ANNEX "B"

PAGE FIVE OF IRREVOCABLE STANDBY LETTER OF CREDIT NO. _____.

ANNEX "C"

RE: (*name of bank*) Irrevocable Standby Letter of Credit No. _____.

The undersigned representative of Northern Palm Beach County Improvement District hereby certifies to _____ Bank with reference to Irrevocable Standby Letter of Credit No. _____issued by _____ Bank in favor of the undersigned, that Northern Palm Beach County Improvement District hereby agrees to its cancellation.

In witness whereof, the undersigned, as an authorized representative of Northern Palm Beach County Improvement District, has executed and delivered this Annex "C" as of the _____ day of _____, 20 ____.

NORTHERN PALM BEACH COUNTY
IMPROVEMENT DISTRICT
BY: _____
Signature

_____ (DISTRICT SEAL)
Print Name

President_____
Title

END OF ANNEX "C"

D. Blanket Water Management Easement (Last Revision Date: December 5, 2003)

IRREVOCABLE STANDBY LETTER OF CREDIT NO.

ISSUE DATE:

BENEFICIARY

NORTHERN PALM BEACH COUNTY
IMPROVEMENT DISTRICT
359 HIATT DRIVE
PALM BEACH GARDENS, FL 33418

APPLICANT

ISSUING BANK

AMOUNT:

EXPIRATION DATE:

FOR THE ACCOUNT OF _____

WE HEREBY ESTABLISH OUR IRREVOCABLE STANDBY LETTER OF CREDIT NO. _____ IN THE BENEFICIARY'S FAVOR FOR AN AMOUNT NOT EXCEEDING IN THE AGGREGATE USD $ _____(U.S. DOLLARS) AVAILABLE BY YOUR DRAFT(S) DRAWN ON US AT SIGHT BEARING THE CLAUSE, "DRAWN UNDER IRREVOCABLE STANDBY LETTER OF CREDIT NO. AND ACCOMPANIED BY:

1.) A STATEMENT PURPORTEDLY SIGNED BY AN AUTHORIZED REPRESENTATIVE OF NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT IN THE FORM OF ANNEX "A" ATTACHED HERETO, APPROPRIATELY COMPLETED.

SPECIAL CONDITION:
THE AMOUNT AVAILABLE FOR DRAWING(S) HEREUNDER MAY BE REDUCED BY THE ISSUING BANK UPON THE ISSUING BANK'S RECEIPT OF A STATEMENT PURPORTEDLY SIGNED BY AN AUTHORIZED REPRESENTATIVE OF NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT IN THE FORM OF ANNEX "B" ATTACHED HERETO, APPROPRIATELY COMPLETED.

THIS IRREVOCABLE STANDBY LETTER OF CREDIT WILL EXPIRE ON THE EARLIER TO OCCUR OF:

A.) _____, 20 ___

OR

B.) THE DATE UPON WHICH WE RECEIVE A STATEMENT PURPORTEDLY SIGNED BY AN AUTHORIZED REPRESENTATIVE OF NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT IN THE FORM OF ANNEX "C" ATTACHED HERETO, APPROPRIATELY COMPLETED.

PAGE TWO OF IRREVOCABLE STANDBY LETTER OF CREDIT NO. _____.

THIS IRREVOCABLE STANDBY LETTER OF CREDIT, TOGETHER WITH THE ATTACHED ANNEXES "A", "B" AND "C", SETS FORTH IN FULL THE TERMS OF OUR UNDERTAKING, AND SUCH UNDERTAKING SHALL NOT IN ANY WAY BE MODIFIED, AMENDED OR AMPLIFIED BY REFERENCE TO ANY DOCUMENT OR INSTRUMENT REFERRED TO HEREIN OR IN WHICH THIS LETTER OF CREDIT IS REFERRED TO OR TO WHICH THIS LETTER OF CREDIT RELATES AND ANY SUCH REFERENCE SHALL NOT BE DEEMED TO INCORPORATE HEREIN BY REFERENCE ANY DOCUMENT OR INSTRUMENT.

WE HEREBY AGREE THAT EACH DRAFT DRAWN AND PRESENTED IN COMPLIANCE WITH THE TERMS OF THIS IRREVOCABLE STANDBY LETTER OF CREDIT WILL BE DULY HONORED BY US IF PRESENTED TO US AT OUR OFFICE LOCATED AT:
ADDRESS: _____
ATTENTION: _____
DURING REGULAR BUSINESS HOURS ON ANY DATE OR DATES ON OR BEFORE THE EXPIRATION DATE WITH THE CUTOFF TIME FOR PRESENTATION OF DRAFTS ON SAID EXPIRATION DATE TO BE 3:00 P.M. LOCAL TIME.

EXCEPT SO FAR AS OTHERWISE EXPRESSLY STATED, THIS DOCUMENTARY CREDIT IS SUBJECT TO THE "UNIFORM CUSTOMS AND PRACTICE FOR DOCUMENTARY CREDITS: (CURRENT REVISION), INTERNATIONAL CHAMBER OF COMMERCE, PUBLICATION NO. 500.

THIS IRREVOCABLE STANDBY LETTER OF CREDIT IS AVAILABLE BY SIGHT PAYMENT AT THE COUNTERS OF THE (*name and address of Bank Branch*).

BANK AUTHORIZED SIGNATURE

TITLE

PAGE THREE OF IRREVOCABLE STANDBY LETTER OF CREDIT NO._____

ANNEX "A"

RE: (*name of bank*) Irrevocable Standby Letter of Credit No. _____.

The undersigned representative of Northern Palm Beach County Improvement District hereby certifies to Bank with reference to Irrevocable Standby Letter of Credit No. _____ issued by _____Bank in favor of the undersigned Beneficiary that:

(1) The undersigned has approved for payment invoice(s) received by it in respect to construction or implementation of Improvements pursuant to that particular project identified as _____
_____

(2) The undersigned has forwarded such invoices(s) to the Applicant of the Irrevocable Standby Letter of Credit No. _____ and payment of such invoice(s) has not been remitted in full within ten (10) business days after the due date of such invoices(s).

(3) (A) The amount of the approved and unpaid invoice(s) which is/are due and payable on the date of this Annex "A" is $_____, and
(B) The draft accompanying this Annex "A" is in such amount.

(4) Upon our receipt of the amount demanded by this Annex "A",

(A) We will apply the same directly to the payment of the approved and unpaid invoice(s) referred to in paragraph (3) of this Annex "A", and
(B) No portion of said amount will be applied by us for any other purpose.

In witness whereof, the undersigned, as an authorized representative of Northern Palm Beach County Improvement District, has executed and delivered this Annex "A" as of the _____ day of _____, 20___.

NORTHERN PALM BEACH COUNTY
IMPROVEMENT DISTRICT

BY: _____
Signature

_____ (DISTRICT SEAL)
Print Name

President_____
Title

END OF ANNEX "A"

PAGE FOUR OF IRREVOCABLE STANDBY LETTER OF CREDIT NO. _____.

ANNEX "B"

RE: (*name of bank*) Irrevocable Standby Letter of Credit No. _____.

The undersigned representative of Northern Palm Beach County Improvement District hereby certifies to _____ Bank with respect to the above referenced Irrevocable Standby Letter of Credit No. _____that a progress payment has been paid by (*name of Applicant*) to Northern Palm Beach County Improvement District in the amount of _____ ($ _____ U.S.D). Therefore, Irrevocable Standby Letter of Credit No_____ should be reduced by an amount equal to the hereinabove specified paid progress payment amount.

In witness whereof, the undersigned, as an authorized representative of Northern Palm Beach County Improvement District, has executed and delivered this Annex "B" as of the ____ day of _____, 20 ____.

NORTHERN PALM BEACH COUNTY
IMPROVEMENT DISTRICT

BY: _____
Signature

_____
Print Name

_____ (DISTRICT SEAL)

President_____
Title

END OF ANNEX "B"

PAGE FIVE OF IRREVOCABLE STANDBY LETTER OF CREDIT NO. _____.

ANNEX "C"

RE: (*name of bank*) Irrevocable Standby Letter of Credit No. _____.

The undersigned representative of Northern Palm Beach County Improvement District hereby certifies to _____ Bank with reference to Irrevocable Standby Letter of Credit No. _____issued by _____ Bank in favor of the undersigned, that Northern Palm Beach County Improvement District hereby agrees to its cancellation.

In witness whereof, the undersigned, as an authorized representative of Northern Palm Beach County Improvement District, has executed and delivered this Annex "C" as of the _____ day of _____, 20 ____.

NORTHERN PALM BEACH COUNTY
IMPROVEMENT DISTRICT

BY: _____
Signature

_____ (DISTRICT SEAL)
Print Name

____President_____
Title

END OF ANNEX "C"

E. High Level Maintenance Agreement
(Prepared by Northern's General Counsel)

F. Electronic File Standards

1. CADD Standards

- AutoCAD 2000 or newer software.

- DWG file format (AutoCAD 2000 or newer), .pdf format and also on CD.

- Coordinate System shall be based on the North American Datum 1983
  - (NAD83) – (1990 Adjustment,) – Florida East Zone with Units in Feet.

  - Elevation shall be based on NGVD 29 (Feet).

- Layering Policy

  - It is mandatory that all CAD drawings be assembled with a layer for each specific item group, such as: Lot lines, utility easements, drainage easements, conservation areas, water management tracts etc. A "translation" file should accompany the drawing file if the layer names are not intuitive.

  - Items specifically granted to Northern shall be placed on separate layers, which begin as follows: NPBCID Drainage Easement, NPBCID Access Easement, NPBCID Pump Station Tract etc.

- Text format/font - Standard default text for AutoCAD such as Simplex, Romanesque, (AutoCAD provided fonts) may be used. Custom fonts shall <u>not</u> be used.

- Pen assignments – a CTB file of pen assignments shall be submitted with each drawing file.

- Final AutoCAD drawings shall be converted to an Adobe PDF portable document format and submitted with digital drawing files.

- Units – English units using decimal feet. Angular measurement shall be in surveyor units (i.e. N75˚ 20' 30"E).

- File transfer - CD ROM unless otherwise approved.

- Aerials shall be in TIFF format with an accompanying World File, Florida State Plane Coordinate System 1983 (1990 Adjustment). Northern has the latest Palm Beach County aerials on file. Please contact the District Engineer if these files are needed.

G. Drawing Standards

1. Cover Sheet shall include the following information
   a. Project Name
   b. Vicinity Map
   c. Location Map
   d. Sheet Location Map (may be provided on a separate sheet)
   e. Index of Sheets
   f. Drawing Number
   g. Revisions – Description and Date
   h. Unit #_____ NPBCID Project #_____
   i. NPBCID Name in Title
   j. NPBCID Engineering Certification Note (See Section H)
   k. Underground Utility Location Detail (Sunshine Note)

2. General Information shall be shown on all sheets
   a. Scale
   b. North Arrow
   c. Key Maps
   d. Title Block/Border on Each Sheet
   e. Legend
   f. Show Easements/Tract/Right-of-Way Boundaries
   g. Minimum 2 Benchmarks
   h. Sheet Number
   i. Date

3. Project Information Specific to the Development and Unit of Development (may be shown on several sheets)
   a. Developer
   b. Unit Boundary/Project Boundary
   c. Improvements (Bonded)
   d. Ultimate Ownership
   e. Earthwork (Excavation and Embankment)
   f. Haul Routes
   g. Stock Pile Areas
   h. Dewatering Plan (if necessary)
   i. Special Construction Considerations
      (1) Preserves
      (2) Conservation Areas
      (3) NPDES (general details)
      (4) General Notes

4. Master Geometry/Horizontal Control Sheet shall be included for each Project and include Vertical Control (source of benchmark and location should be shown) and Benchmarks (minimum of 2 per project).

5. Master Paving & Drainage Plan shall include**:**
   a. Basin area, acreage
   b. Primary system
   c. Interconnects
   d. Control structures/pump stations
   e. Basin information in table form
      (1) Maximum/minimum finished floor
      (2) Maximum/minimum road crown
      (3) Minimum property line elevation
      (4) Control elevation
      (5) Basin divide location and elevation (if applicable)
      (6) Drainage area map
   f. Pump station operation protocol (as applicable)

6. Paving and Drainage Plans shall include:
   a. Existing and proposed elevations
   b. Existing and proposed structures
   c. Property line should be bold
   d. Label adjacent lots, streets, buildings, etc.
   e. All existing features should be shown different than proposed features (i.e., dashed or screened lines)
   f. Benchmark
   g. Either station/offset or northing/easting coordinates on all proposed features
   h. Details and design criteria consistent with local governing agencies.
   i. Lake/retention area cross sections

7. Water and Wastewater shall be in accordance with the applicable utility provider.

H. General Requirements

1. All construction-drawing sheets shall be 24” by 36”.

2. Final drawings shall be on reproducible media.

3. One set of 11”x 17” and one set of 24” x 36” size drawings of the final construction plans shall be provided to the District. The 11” x 17” plan is to be plotted to scale with all notes and text legible.

4. Electronic drawing files refer to AutoCAD Standards and Layering Policy. See Section III, F.

5, Upon completion of work, the Project/Consulting Engineer shall provide final record information to the District in an electronic format. See Section 3 F.

6. Design of Roads shall comply with the current edition of the Florida Department of Transportation's Design Standards.

7. All Signing and Pavement Markings shall be in accordance with the latest edition of "Palm Beach County Typical for Pavement Markings, Signing and Geometrics", and the "Manual on Uniform Traffic Control Devices (MUTCD)", and the Florida Department of Transportation, Standard Specifications for Road and Bridge Construction, latest edition.

8. All drainage systems shall be designed and constructed for ultimate thoroughfare requirements.

I. Certification to Northern

The following Statement of Certification must be included on the cover sheet of the construction plans and signed and sealed by the Design Engineer.

"The undersigned does hereby certify (the term "certify" is used as defined in Chapter 61G15-18.011(4) Florida Administrative Code) in favor of Northern Palm Beach County Improvement District that, in my professional opinion, these plans comply with the requirements of Northern Palm Beach County Improvement District and other applicable governmental entity(s) requirements. Northern Palm Beach County Improvement District is hereby authorized and entitled to rely upon same for construction of public improvements."

SECTION 4 - PROJECT MANUAL/BIDDING PROCESS

The following section outlines the requirements for the production of Northern financed construction documents (Project Manual), bidding criteria and contract award. The following general criteria shall be used in the assembly of construction contracts for Northern financed projects:

Invitation to Bid, Instructions to Bidders, Contract Agreement, Supplementary Conditions and Bid Form shall follow the standard format used by the Engineers Joint Construction Document Council (EJCDC) and shall be assembled by Northern's General Legal Counsel, with project specific requirements being supplied by the Project/Consulting Engineer.

A. Bid Award Process

1. Following completion of the Design Phase, the **Project/Consulting Engineer shall** be responsible for preparing and compiling all engineering technical specifications and defining all of the project specific contract requirements such as time for substantial completion, final completion, milestones, etc., necessary to complete the project. These project specific items should be coordinated with the District's General Counsel, Northern Staff and the District Engineer.

   All Bidding Documents, plus addenda if any, shall be prepared and bid in accordance with Northern's current published Standards/requirements (see the Project Engineer Checklist for Preparation of Northern Project Manual at the end of this section.) It is to be understood that although others will or may be reviewing and/or commenting on the Bidding Documents any such review, comments or lack thereof, shall in no way relieve or release the Project/Consulting Engineer from its responsibilities or obligations regarding the content and nature of the Bidding Documents and subsequent administration of the bidding and award process. It is further understood that the Project/Consulting Engineer is entitled to rely upon the District's current published Standards for its provision of bidding phase services. Once the Project/Consulting Engineer has compiled all necessary technical information as identified above, it will be forwarded to the District Engineer, Northern Staff and the District's General Counsel.

2. Upon receipt of the technical information from the Project Engineer, the **District's General Counsel shall** prepare the contract documents including the agreement, instructions to bidder's etc., and forward these to the District Engineer.

3. Upon receipt of the technical information from the Project Engineer, and the Contract Documents from the District General Counsel, the **District Engineer shall** compile the Project Manual and forward a draft Project Manual to Northern Staff, the District General Counsel and the Project/Consulting Engineer for review and comment.

4. Upon concurrence by all parties of the construction documents format and content the **Project/Consulting Engineer shall** sign and seal one (1) set of the Project Manual and construction plans in favor of Northern, following which, said items are to be returned to Northern**.**

5. Upon receipt of the above from the Project/Consulting Engineer, the **District Engineer shall** advertise the project for bidding and distribute all plans to prospective bidders. The District Engineer shall advertise the project for bid in accordance with the District's Standards and requirements. Confirmation of the advertisement shall be sent (via hand delivery or fax transmittal) to Northern, the Project/Consulting Engineer and District General Counsel.

6. The **District Engineer shall** prepare and package all of the necessary Bidding Documents, including subsequent addenda thereto if issued, and distribute or make them available to all potential or interested bidders in accordance with Northern's requirements. All Bidders will be instructed to return their sealed Bid to the location where they were picked up. The sealed Bids shall thereafter be opened at the time and place specified in the Bid advertisement.

7. The **Project/Consulting Engineer shall** coordinate a Pre-Bid conference to be held within one (1) or two (2) weeks after the initial Bid advertisement. The Project/Consulting Engineer shall maintain an accurate written record of the meeting and forward it to the attendees, Northern and District Engineer within five (5) business days following the meeting. Bidders will be instructed to contact the Project/Consulting Engineer for answers to any questions relating to the Project. The Project/Consulting Engineer shall record all questions and answers and provide a written response to all known potential Bidders, with a copy sent the District Engineer and Northern Staff at the time of such response.

8. The **Project/Consulting Engineer shall** prepare all necessary addenda to the bidding documents and before distribution forward same to Northern Staff, the District Engineer and the District General Counsel for review and comment.
    a) The **District Engineer and District General Counsel shall** promptly review and provide comments, if any, to the Project/Consulting Engineer within three (3) business days following receipt.
    b) Upon addressing all said comments, if any, to the satisfaction of Northern, the **Project/Consulting Engineer shall** forward the Addendum to the District Engineer for distribution to all potential bidders, Northern and the District General Counsel.

9. The **Project/Consulting Engineer shall** coordinate and supervise the Bid Openings and provide Award Recommendation and bid tabulation to Northern and District

Engineer within five (5) business days following a Bid Opening. The Bid Openings shall be held at the location and time indicated in the Project's Bid advertisement.

a) The **Project/Consulting Engineer shall**, in the presence of the District Engineer and Northern Staff, open the sealed bids at the time and place indicated in the Bidding Documents.
b) The **District Engineer shall**, upon such opening, provide one of each duplicate of the bid to Northern and the Project/Consulting Engineer.

10. Following approval by Northern of the Project/Consulting Engineer's recommendation, the **District Engineer shall** prepare the Contract Documents and issue a Notice of Award to the successful Bidder. The Notice of Award shall indicate the date Northern approved the Award and the amount of the Award. In addition, six (6) sets of the Contract Documents shall be provided to the successful Bidder. Five (5) of the sets are to be executed and returned to the District Engineer for transmittal to the District's General Counsel. The sixth set is for the successful Bidder's insurance agent. The Notice of Award shall contain instructions to the successful Bidder regarding execution of the Contract Documents, provision of bonds and insurance and such other instructions as are necessary for the proper execution and completion of the Contract Documents.

11. Once the five (5) sets of executed Contract Documents are returned to Northern Staff, the District Engineer shall examine the Contract Documents for completeness and, once satisfied, forward them to the District's General Counsel for final approval and execution. Once executed, two (2) sets of Contract Documents will be returned to the Project/Consulting Engineer.

    a) The **Project/Consulting Engineer shall** be responsible for returning the Contractor's executed Project Manual to the Contractor along with a Notice to Proceed.

. 12. Concurrent with issuance of a Notice to Proceed, the **Project/Consulting Engineer shall** provide Northern with one (1) set of 11" x 17" construction drawings.

13. Technical Specifications shall use the Construction Specifier Institute (CSI) Master Format 16 Division Index as follows:

Division 1	General Requirements
Division 2	Site-work
Division 3	Concrete
Division 4	Masonry
Division 5	Metals
Division 6	Wood and Plastics
Division 7	Thermal and Moisture Protection
Division 8	Doors and Windows

Division 9	Painting and Finishes
Division 10	Specialties
Division 11	Equipment
Division 12	Furnishings
Division 13	Special Construction
Division 14	Conveying Devices
Division 15	Mechanical
Division 16	Electrical

(Note: Division 4 through 16 is not covered in this Manual and will be handled on a project-by-project basis.)

B. Bid Advertisement Requirements

The Bid Advertisement must be publicly posted to comply with Florida State Statutes as applicable to Northern. These requirements are subject to change at any time due to court opinions and legislative changes. Therefore, it is preferable to consult with the District's General Counsel prior to finalizing and posting any advertisement publicly.

1. Criteria for Advertisements

CONTRACT AMOUNT	MINIMUM ADVERTISEMENT
Up to $300,000	No specified time (2 weeks suggested)
$300,000 - $500,000	21 Day Bid Opening 5 Day from First Advertisement to Pre-Bid Meeting
$500,000 and Greater	30 Day Bid Opening 5 Day from First Advertisement to Pre-Bid Meeting

2. Invitation to Bid

Bid Openings must be advertised in the Palm Beach Post for two (2) consecutive Sundays. Written notice is required for submittal to the Palm Beach Post the Thursday before advertisement.

3. Distribution: Contract Documents are to be sent to the following:

ORGANIZATION	NO. OF MANUALS
Northern	1
Legal Counsel	1
District Engineer	1
Project / Consulting Engineer	1
Contractor's Insurance Co.	1
Contractor	1
Dodge Report	1 If Requested
Minority Business Development Co. (MBDC)	1 If Requested
Construction Marketing Data	1 If Requested

C. Project Engineering Checklist

PROJECT/CONSULTING ENGINEER
CHECKLIST FOR PREPARATION
OF NORTHERN PROJECT MANUAL

The following information should be provided or confirmed, as applicable, when requesting the preparation of a NPBCID Project Manual:

1. Title of Project _____

2. Description of Project:_____

3. NPBCID Project Number _____

4. Unit of Development Number and Name _____

5. If applicable, Bid Opening time, date and location:_____
_____

6. The name, address, phone, and fax number of the Project Engineering firm, plus name of contact engineer.

7. The name, address, phone, and fax number of the party preparing the checklist.

8. Confirmation that the works, which are the subject of the Project Manual, are authorized works in this Unit's Plan of Improvements.

9. Engineer's estimate of cost of construction $_____ Please provide copy to NPBCID and District Engineer.

10. Confirmation that NPBCID currently has sufficient and available funds on hand to pay the estimated cost of carrying out the works which are the subject of the Project Manual and advise as to the nature of the source of funds (i.e., bond funds, Landowner/Developer advanced funds or Letter of Credit security, or combination thereof and, if a combination, the percentage of funds from each source).

11. List and confirm that all necessary real property interests (fee simple or easements) have been acquired by NPBCID or identify, plus provide legal description and sketch, of any that are still needed for any purpose including construction site, access, drainage, staging, utilities, temporary storage of fill, etc.

12. Confirmation that the applicable Site Preparation and Non-Interference Agreement have been executed by the Landowner/Developer.

13. Identification and provision of all specifications or exhibits that are to be included in the Project Manual.

14. Whether the works which are the subject of the Project Manual are subject to receipt of an NPDES Permit and if so, confirmation that the specifications provide for the preparation and submission of NPDES Permit Application and Pollution Prevention Plan.

15. Title, preparer's name and certification date of any drawings for the Project.

16. Confirmation of receipt of appropriate number of signed and sealed drawings/plans certified in favor of NPBCID.

17. Amount to be charged for provision of a Project Manual to a potential Bidder.

18. Provision of the Unit Price Schedule or Lump Sum Schedule of Values and/or alternates.

19. Will a Pre-Bid Conference be held? If so, is it optional or mandatory, plus when and where will it be held?

20. How many days until substantial completion of the Project _____?

21. How many days until final completion of the Project _____?

22. What are the retainage percentages and when is the retainage to be released?

23. Is a liquidated damage provision to apply and, if so, at what dollar amount per diem?

24. Will a Trench Safety Affidavit be required?

25. Are there any unusual insurance requirements, for example – pollution insurance and, if so, the amount of required coverage?

26. Identify who should be listed as a Certificate Holder and/or Additional Insured on the Contractor's Certificate of Insurance.

27. Provision of a list of all permits that are required for the work and indicate: (a) which have already been received, plus there date of issuance, and (b) those that still need to be obtained and whether the Contractor or NPBCID is to obtain same.

28. The division of responsibilities between the Project Engineer and other engineering consultants, if any.

29. Whether there will be other work in progress at or about the jobsite and, if so, the nature of same.

30. Which aspects of the Project, if any, are to be conveyed to another governmental entity and, if so, the entity's name, address and contact person?

D. Requirements and Procedures

1. **Personal Conflicts of Interest**. No employee, officer, or agent of Northern may participate in the selection, award, or administration of a contract supported by a Federal Assistance award if he or she has a real or apparent conflict of interest. Such a conflict would arise when the employee, officer, or agent, any member of his or her immediate family, his or her partner, or an organization which employs or is about to employ any of these parties, has a financial or other interest in or a tangible personal benefit from a firm considered for award.

2. **Gifts**. The officers, employees, and agents of Northern must neither solicit nor accept gratuities, favors, or anything of monetary value from contractors or parties to subcontracts. Northern's Procurement Officer will set standards for situations in which the financial interest is de minimus, not substantial, or the gift is an unsolicited item of nominal value.

3. **Violations**. Consistent with 2 C.F.R. §200.318(c)(1), Northern employees who do not report gifts exchanged over the de minimus value established by Northern's Procurement Officer will be in violation of subsection (2) above and may be disciplined, including dismissal. Penalties for a contractor may be termination of the contract.

4. **Advance Contracts for Future Work Supported under the Stafford Act**. Northern may award advance contracts before an incident occurs for the potential performance of work under a Stafford Act emergency or major disaster. These types of contracts are eligible for reimbursement when used to support response and recovery efforts pursuant to a financial assistance award but must be awarded in accordance with these additional requirements and procedures of Northern Purchasing Policy Manual

5. **Lease/Purchase Analysis**. Northern will conduct an analysis of lease versus purchase alternatives, and any other appropriate analysis to determine the most economical approach in accordance with 2 C.F.R. §200.318(d). The awarding Federal agency or State pass through agency will review any costs used in the comparison for reasonableness, realistic current market conditions, and based on the expected useful service life of the asset. With respect to Federal Assistance under the Stafford Act, FEMA will only reimburse Northern for the most cost effective strategies from the comparisons.

6. **Value Engineering**. Where appropriate, Northern will use value engineering clauses in contracts for construction projects of sufficient size to offer reasonable opportunities for cost reductions consistent with C.F.R. §200.318(g).

7. **Responsible Contractors**. Northern will award contracts only to responsible contractors possessing the ability to perform successfully under the terms and conditions of a proposed requirement consistent with 2 C.F.R. §200.318(h). Consideration shall be given to such matters as contractor integrity, compliance with public policy, record of past performance, Federal or State debarment, and financial and technical resources.

8. **Suspended and Debarred Parties**. Northern will search SAM.gov (GSA, System for Award Management) to determine if a selected vendor or contractor is suspended or debarred from receiving Federal Assistance before agreements are completed.

9. **Full and Open Competition**. Northern will conduct procurement transactions in a manner providing full and open competition consistent with the standards of 2 C.F.R.

§200.319. Northern will publicize Request for Proposals and will obtain solicitation from adequate sources which Northern considers to be no less than three quotes consistent with 2 C.F.R. §200.320(c)(ii).

10. **Prohibitions in Soliciting for Goods and Services**.

a) **Excessive Qualifications**. Placing unreasonable requirements on firms and vendors in order for them to qualify to do business with Northern. 2 C.F.R. §200.319(a)(1).
b) **Unnecessary Experience**. Requiring unnecessary experience. 2 C.F.R. §200.319(a)(2).
c) **Unnecessary Bonding**. Requiring excessive bonding. 2 C.F.R. §200.319(a)(2).
d) **Improper Qualification**. Using improper prequalification procedures that conflict with 2 C.F.R. §200.319(d).
e) **Specifying Only a Brand Name**. Northern solicitations shall not specify only a "brand name" product instead of allowing "an equal" product to be offered and describing the performance or other relevant requirements of the procurement. When it is impractical or uneconomical to write a clear and accurate description of the technical requirements of the property or services to be acquired, Northern may use a "brand name or equal" description as a means to define the performance or other salient requirements of procurement. Should Northern determine that only a brand name product is acceptable to fulfill a requirement, that determination must be documented and justified in the same manner as a noncompetitive procurement. The specific features or salient characteristics of the named brand which must be met by offers must be clearly stated. 2 C.F.R. §200.319(a)(6) and (c)(1).
f) **Retainer Contract**s. Making a noncompetitive solicitation only to a person, vendor or firm on retainer contract where that award is not for property or services specified for delivery under the scope of work of the retainer contract. 2 C.F.R. §200.319(a)(4).
g) **In-State, Local, or Tribal Geographic Preferences**. Imposing prohibited in-state, local, or tribal geographic preferences that conflict with 2 C.F.R. §200.319(b). An exception to this requirement is the solicitation of architectural and engineering services where geographical considerations may yield the most qualified firms.
h) **Organizational Conflicts of Interest**. Allowing entities to submit bids or proposals in response to the solicitation where there would be a prohibited organizational conflict of interest. 2 C.F.R. §200.319(a)(5).
i) **Unequal Access to Information**. Northern will not disclose non-public information as part of the solicitation process or to incumbent vendor or contractors that may provide competitive advantage in procurement competition.

j) **Vendor Participation in Drafting Scope Prohibited**. Vendors and contractors who assist the Northern in the development of Northern procurement solicitations, including Statements of Work, are prohibited from participating in the competition for the related contracts.

11. **Prohibited Contracts**. Time and Material Contracts without reasonable specified ceilings are prohibited or when another acceptable type of contract can be executed like a Firm Fixed Price Contract. Cost Plus a Percentage of Cost Contracts are prohibited. Sole Source Contracts must be avoided if the amount of the contract exceeds Northern's simplified acquisition threshold. Some exceptions to these prohibitions are allowed for exigency purposes such as during the incident period of a disaster.

12. **Contract Provisions for all Federally Supported Contracts**. All contracts supported with Federal Assistance must include clauses found at 2 C.F.R. §200.326. These provisions include but are not limited to access to records, anti-lobbying requirements, conflict of interest clause, and termination for cause.

13. **Additional FEMA Contract Requirements**.

a) Northern shall require a Change Clause in FEMA related contracts that describes how, if at all, changes can be made by either party to alter the method, price, or schedule of the work without breaching the contract.
b) Northern contracts relevant to work supported by the U.S. Department of Homeland Security (DHS) shall include a provision that contractors shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific DHS or FEMA pre-approval.
c) Northern contracts shall include a provision in its contract that the contractor acknowledges that 31 USC, Chapter 38 (Administrative Remedies for False Claims and Statements) applies to contractor actions pertaining to the contract.
d) To encourage contracting with small and minority business, plus women's business enterprises, Northern shall: (i) place qualified small and minority businesses and women's business enterprises on its solicitation lists, (ii) when economically feasible, divide total requirements into smaller tasks or quantities, (iii) when the requirements permits, establish delivery schedules that will encourage them to participate and (iv) if subcontracts are to be let by the prime contractor, require the prime contractor for FEMA related contracts to take the above steps.
e) Additional procurement guidance specific to FEMA can be obtained from the ***"FEMA PROCUREMENT GUIDANCE FOR RECIPIENTS AND SUBRECIPIENTS UNDER 2 C.F.R PART 200 (UNIFORM RULES) SUPPLEMENT TO THE PUBLIC ASSISTANCE PROCUREMENT DISASTER ASSISTANCE TEAM (PDAT) FIELD MANUAL."***

Attachments.

Checklist for Reviewing Procurements Under Grants by Non-Federal Entities (States, local and tribal governments, Institutions of Higher Education, Hospitals, and private non-profit organizations) – 2 CFR pt. 200 (09-26-16)

Extract, US OMB, 2 CFR Part 200, §§200.317 thru 200.326 (Procurement Standards).

USDHS OIG, Highlights: Audit Tips For Managing Disaster-Related Project Costs (07-01-16)

SECTION 5 – PURCHASE ORDER POLICY

A. General:

1. The District shall issue a Purchase Order for all services to be provided by a contractor, engineer or other professional unless an exception for doing so is specified in an existing contract.

2. The Executive Director may authorize deviations from this policy, including but not limited to, issuing purchase orders under emergency conditions (e.g. flooding, hurricanes or imminent likelihood of danger to lives or properties).

B. Bidding and Solicitation of Proposals:

1. Solicitation of proposals from Engineers, Architects, and other Design Professionals, shall be in accordance with the Consultants Competitive Negotiation Act (CCNA) and District Policy including the "Selection and Delegation of Project and Consulting Engineers" procedures as outlined in Section II E of this Manual.

2. Solicitation of bids or proposals from contractors and other service providers shall be in accordance with the following:

   a. Where applicable, an engineer's estimate of probable construction costs shall be obtained prior to solicitation of such bids or proposals.

   b. Where the estimate of probable construction cost is equal to or greater than $300,000, Staff in cooperation with the District Engineer and District General Counsel, shall formally bid the project accordance with Florida law.

      (1) Under no circumstance may a project be intentionally split up into separate tasks of less than the $300,000 to avoid placing the project out for bid.

   c. Where the estimate of probable construction cost is greater than $25,000 and less than $300,000, Staff shall:

      (1) Solicit prices from Approved Annual Contractors or obtain an acceptable purchasing agreement from another special district, municipality or county for usage pursuant to section 189.4221, Florida Statutes.

(2) The District will endeavor to obtain a minimum of three quotes from Contractors with the required expertise to perform the proposed work. The District will develop a scope of work and a bid package that may include, expected quantities, descriptive unit line items, schedule of values and specifications related to the proposed work as well as any additional information (location map, engineering plans, existing field conditions, project schedule, etc.) to assist in the preparation of responsive quotes. A letter and/or electronic correspondence received by Staff from a Contractor declining to quote the work may, if approved by a District Engineer or the Executive Director, suffice as one of the three (3) quotes. All quotes must be submitted utilizing the attached proposal form (Exhibit "B") in order to be considered for approval unless otherwise specified in the District request. The Contractor with the lowest quote will be issued a purchase order for the work.

d. Where the estimate of probable construction cost is less than $25,000, Staff shall:

(1) Solicit prices from Approved Annual Minor Contractors or obtain an acceptable purchasing agreement from another special district, municipality or county pursuant to section 189.4221, Florida Statutes.

(2) The District will obtain a quote from a Contractor with the required expertise to perform the proposed work. The District will develop a scope of work, that may include expected quantities, descriptive unit line items, schedule of values and specifications related to the proposed work as well as any additional information (location map, engineering plans, existing field conditions, project schedule, etc.) to assist in the preparation of responsive quotes. If the Contractor fails to provide a quote within the time frame specified in the District's request, Staff shall select another Contractor to provide a quote based on the same scope of work. Upon receipt and acceptance of the quote, a purchase order will be issued for the work as approved and issued by the Executive Director or District Engineer.

C. Issuance:

1. The Executive Director or District Engineer may approve/execute Purchase Orders for projects not exceeding $25,000.

2. Purchase Orders equal to or greater than $25,000 must be approved by the District's Board of Supervisors before issuance.

D. Insurance and Bonding:

1. Unless otherwise authorized by the District's Board of Supervisors all vendors must provide insurance in accordance with the District's typical contractor insurance requirements.

2. Unless otherwise authorized in accordance with the policies contained herein, all Contractors performing construction related activities shall provide chapter 255.05 F.S., payment and performance bonds and in an amount equal to 100% of the Purchase Order amount.

   a. For projects less than $25,000 the payment and performance bond requirements may be waived if the following conditions are adhered to:

      (1) District Staff (as authorized by the Executive Director) and the District Engineer must both concur that due to the nature and scope of the project the bond requirements may be waived, **or** the vendor has no requirement under an existing contract to provide said bonds, **or** the District's Board of Supervisors have authorized said waiver, and
      (2) The District has a minimum of 200% of the estimated probable construction cost secured and available in unencumbered funds, and
      (3) There will be only one payment made to the Contractor and said payment shall not be made until such time as the work is complete and accepted by the District.

   b. For construction projects equal to or greater than $25,000 the payment and performance bond requirements may be waived by the District's Board of Supervisors;

      (1) Only if the District's Board of Supervisors authorizes said waiver, and
      (2) The District has a minimum of 200% of the estimated probable construction cost secured and available in unencumbered funds, and
      (3) There will be only one payment made to the contractor and said payment shall not be made until such time as the work is complete and accepted by the District, and
      (4) The contract cost does not exceed $200,000

E. Change Orders:

1. All Change Orders must be directly related to the scope of work as shown in the original Purchase Order.

2. Changes in scope can only be approved by the Board of Supervisors.

3. The Executive Director may issue Change Orders provided:
   a. Said Change Order does not exceed or cause a Purchase Order to exceed $25,000.00, and

   b. Said Change Order does not total more than 10% of the original cost of the Purchase Order , cumulatively or

   c. Said Change Order does not increase the time of the Purchase Order by more than a total of 90 days, cumulatively.

4. The District's Engineering Review Committee may issue Change Orders provided:

   a. Said Change Orders do not total more than 10% of the original cost of the Purchase Order , cumulatively or,

   b. Said Change Order does not increase the time of the Purchase Order by more than a total of 90 days, cumulatively.

   c. All Change Orders approved by the Engineer Review Committee must be presented to the Board of Supervisors for ratification within 30 days of their approval.

5. Any proposed Change Order that will increase the time or money totals beyond the above-specified amounts must be presented to the Board of Supervisors for approval.

F. Protocol for obtaining quotes from Contractors without an existing contract or through the utilization of section 189.4221, Florida Statutes.

1. When a given project is outside the scope of services offered by the District's Annual Contractors, and in accordance with section B above, Staff may solicit bids from vendors not currently under contract with the District. Staff may also solicit bids from Contractors which have an acceptable purchasing agreement with another special district, municipality or county pursuant to section 189.4221, Florida Statutes. Staff should ensure that the vendors are prepared to submit the appropriate PBC Occupational License, insurance and payment/performance bonds. It is suggested that these items be listed as part of the bid request. When utilizing a purchasing agreement pursuant to section 189.4221, Florida Statutes, the obtaining of a letter from the other agency acknowledging the use of their purchasing agreement is recommended; however a copy of the subject purchasing agreement must be obtained and the vendor's

written acceptance of the terms of the District's contract for the proposed project is required.

2. A Notice of Award will be sent to the vendor of choice to start the contract process but the vendor may not commence the work until a separate Notice to Proceed is issued. Prior to issuance of the Notice to Proceed, the vendor may be required to execute a project manual/contract.

3. Any District Staff member authorized to sign a Purchase Order may also execute the project manual/contract if required for the District if the work is for less than $25,000.00, otherwise the matter must first go before and be approved by the Board.

4. Staff should schedule a minimum of one month for completion and execution of the project manual/contract process, if one is required.

G. Requirements and Procedures

1. **Personal Conflicts of Interest**. No employee, officer, or agent of Northern may participate in the selection, award, or administration of a contract supported by a Federal Assistance award if he or she has a real or apparent conflict of interest. Such a conflict would arise when the employee, officer, or agent, any member of his or her immediate family, his or her partner, or an organization which employs or is about to employ any of these parties, has a financial or other interest in or a tangible personal benefit from a firm considered for award.

2. **Gifts**. The officers, employees, and agents of Northern must neither solicit nor accept gratuities, favors, or anything of monetary value from contractors or parties to subcontracts. Northern's Procurement Officer will set standards for situations in which the financial interest is de minimus, not substantial, or the gift is an unsolicited item of nominal value.

3. **Violations**. Consistent with 2 C.F.R. §200.318(c)(1), Northern employees who do not report gifts exchanged over the de minimus value established by Northern's Procurement Officer will be in violation of subsection (2) above and may be disciplined, including dismissal. Penalties for a contractor may be termination of the contract.

4. **Advance Contracts for Future Work Supported under the Stafford Act**. Northern may award advance contracts before an incident occurs for the potential performance of work under a Stafford Act emergency or major disaster. These types of contracts are eligible for reimbursement when used to support response and recovery efforts

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Extract, US OMB, 2 CFR Part 200, §§200.317 thru 200.326 (Procurement Standards).

USDHS OIG, Highlights: Audit Tips For Managing Disaster-Related Project Costs (07-01-16)

EXHIBIT "A"
INSURANCE REQUIREMENTS

Below is shown the MINIMUM acceptable insurance to be carried under this Agreement:

I. Commercial General Liability:

(A) Bodily Injury Limit:
$1,000,000 Each Occurrence $1,000,000 Annual Aggregate
Property Damage Limit:
$1,000,000 Each Occurrence
$1,000,000 Annual Aggregate

(B) or a Combined Single Limit of Bodily Injury and Property Damage:
$1,000,000 Each Occurrence
$1,000,000 Annual Aggregate

(C) The Commercial General Liability shall include Contractual Liability.

II. Comprehensive Automobile Liability:

(A) Bodily Injury Limit:
$ 500,000 Each Person $1,000,000 Each Occurrence
Property Damage Limit:
$ 500,000 Each Person

(B) or a Combined Single Limit of Bodily Injury and Property Damage Liability:
$1,000,000 Each Person
$1,000,000 Each Occurrence

III. Workers Compensation and Employers Liability:
Statutory Limits
$100,000 Each Accident
$500,000 Disease-Policy Limit
$100,000 Disease-Each Employee

IV. Umbrella Excess Liability Insurance:

(A) $1,000,000 Each Occurrence
$1,000,000 Annual Aggregate

(B) The aforementioned umbrella coverage shall be no more restrictive than coverage required for the underlying policies. V. Notice of Cancellation:

The Insurance afforded above may not be terminated or reduced unless (30) thirty days prior written notice of such termination or reduction is mailed to Northern (unless terminated for non-payment in which event ten (10) days' notice is required).

VI. Insurance Certificate:

Northern Palm Beach County Improvement District shall be listed as an additional insured for the above Commercial and Umbrella Liability insurance coverage and a certificate of insurance reflecting same shall be delivered to Northern Palm Beach County Improvement District prior to commencement of construction of the project.

EXHIBIT "B"
QUOTE REQUEST FORM

Northern Palm Beach County Improvement District
359 Hiatt Drive, Palm Beach Gardens, FL 33418
Phone 561-624-7830 ~ Fax. 561-624-7839

REQUEST FOR QUOTE/PROPOSAL

TO: _____

OF: _____

FROM: _____

DATE: _____

PROVIDED TO VENDOR VIA: **E-MAIL:** _____

HAND DELIVERY: _____

U.S. MAIL: _____ **PICK-UP:** _____

FAX NO.: _____

ON DATE SHOWN ABOVE

TOTAL NUMBER OF PAGES INLCUDING THIS ONE: _____

PROJECT NAME: _____

_____

UNIT OF DEVELOPMENT NO. _____

Northern Palm Beach County Improvement District
359 Hiatt Drive, Palm Beach Gardens, FL 33418
Phone 561-624-7830 ~ Fax. 561-624-7839

REQUEST FOR QUOTE/PROPOSAL

REQUEST DATE: _____ STAFF LEAD:_____

PROJECT NAME: _____

_____

UNIT OF DEVELOPMENT NO. _____

ATTACHMENTS: PICTURE __ MAP __ AERIAL __ OTHER _____

PROJECT LOCATION: _____

_____

_____

EXISTING CONDITIONS: _____

_____

_____

SCOPE OF WORK: _____

_____

_____

SPECIAL CONDITIONS: _____

_____

_____

Northern Palm Beach County Improvement District
359 Hiatt Drive, Palm Beach Gardens, FL 33418
Phone 561-624-7830 ~ Fax. 561-624-7839

QUOTE/PROPOSAL

REQUEST DATE: _____ STAFF LEAD:_____

PROJECT NAME: _____

_____

We, (I) _____of_____, have
(Representative & Corporation Name)
reviewed the materials and site conditions for the referenced project and, in accordance with my

_____ contract hereby propose the following:
(applicable contract title)

1.) Within 30 calendar days, upon notification to proceed as received by Northern Palm Beach County Improvement District, We (I), will commence the work as outlined in the Scope of Service for a total fee of: $_____.
(As indicated on the attached schedule of values if applicable)

_____ and _____.
(Signature) (Date)

OR

2.) We (I) have reviewed the materials forwarded with this request. By my signature and return of this form we opt not to submit a proposal for this project. Please provide a reason for your choosing not to bid at this time so that we may better utilize your services in future.

_____ and _____.
(Signature) (Date)

Return this form, by FAX **OR** MAIL, no later than _____, _____ AM/PM; indicating an interest to provide service by entering a proposed amount and signing under item #1 **OR** signing at item #2, the election not to participate in this bid.

Should there be any questions concerning the scope of work, please contact:
_____
Northern Palm Beach County Improvement District
359 Hiatt Drive, Palm Beach Gardens, Florida 33418
Office: 561-624-7839, Cell: _____, Fax: 561-624-7839

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SECTION 6. - PLATTING STANDARDS

The following Plat review process shall be used for both Northern financed projects and for projects requiring a Northern Permit. Any proposed Plat within an established Northern Unit of Development shall be required to be submitted for plat approval as a condition for permit approval.

A. Under what conditions must a plat be submitted to Northern?

The developer shall submit a plat application package as outlined in the following section if the proposed lands encumbered by said plat lie within the legal legislative boundary of Northern or utilizes Northern facilities.

B. General Information

1. Application Requirements
   See Page 1 of Plat Application

   NOTE: All dedications are to be included on the Cover Sheet and stated in Northern's acceptance paragraph. If there are no dedications to Northern please use the appropriate dedication language as shown later in this section.

2. Plat Review Process
   See Section II of the Plat Application

3. Electronic File Requirements
   See Section III of the Plat Application

4. Plat Fee Schedule
   See Section IV of Plat Application

C. Plat Application – revised December 15, 2005
See following 3 pages.

Office Use Only:
Date Received: _____
Unit No: _____
Plat No: _____
Permits: _____
Elec. File: _____

Northern Palm Beach County Improvement District

359 Hiatt Dr., Palm Beach Gardens, FL 33418
Phone: 561-624-7830 Fax: 561-624-7839

PROJECT INFORMATION

(PLEASE TYPE OR PRINT ALL APPLICABLE INFORMATION)
Please include 3 copies of the plat and 2 of the relevant boundary survey with your initial submittal.

I. Plat Name: _____
Section/Township/Range: _____ **Target Date for Approval:** _____
Are Any Improvement(s) To Be Dedicated To Northern: Y ☐ N ☐
Has a Permit Application Been Submitted to Northern: Y ☐ N ☐

OWNER/DEVELOPER

NAME	PHONE
COMPANY	FAX
MAILING ADDRESS	E-MAIL
CITY, STATE, ZIP	SECONDARY CONTACT NUMBER

PLATTING SURVEYOR

NAME	PHONE
COMPANY	FAX
MAILING ADDRESS	E-MAIL
CITY, STATE, ZIP	SECONDARY CONTACT NUMBER

ENGINEER

NAME	PHONE
COMPANY	FAX
MAILING ADDRESS	E-MAIL
CITY, STATE, ZIP	SECONDARY CONTACT NUMBER

To whom should we fax the final invoice?
Owner/Developer ( ) Surveyor ( ) Engineer ( ) Other ( ) (note on back)

_____

NOTES: (Is there anything else you feel we need to know?)

II. PLAT REVIEW PROCESS

Upon submittal the complete application package will undergo a first review. Comments on your submittal will be forwarded to the Surveyor. A second review will take place upon receipt of the response to the comments. Be sure to submit 3 copies of the revised plat and other pertinent information as part of the response. Please note that it would be very helpful if all alterations to the plat were highlighted. The process of comment/resubmittal will continue until Northern notifies you that the Plat has been approved for Mylar. At this time you should submit the mylars and an electronic copy (see below) of the mylars for review. Upon satisfactory review of the Mylar an invoice for review, legal and conversion fees will be faxed or mailed to the recipient as authorized on the previous page. Upon receipt of payment the Mylar will be executed and readied for pick-up.

Generally, Northern's Board President is available to execute Plat Mylar's on the 4th Wednesday of the month, January thru October, and the 3rd Wednesday of the month, November and December. We expect the professionals coordinating this effort to schedule the submittals accordingly.

III: ELECTRONIC FILE REQUIREMENTS

Once plats have been approved/accepted, plat information must be submitted to Northern in a format compliant with Northern's GIS needs. Specifically, these files must be submitted as separate ESRI polygon shape files. Plat boundaries, and easements dedicated to Northern, must be extracted from the digital AutoCAD file and converted to individual ESRI shape file format (one polygon shape file for plats, one for easements, one for reservations/preserves, and one for tracts). Polygon shapefiles are to be georeferenced to the Florida East State Plane Feet projection and the NAD83 Datum (FIPS 901). Polygon shapefiles will be named with the unit number and type of feature (i.e. unit11_plat_boundaries; unit24_easements).

In addition, the lines that created the actual polygonal boundaries must be included for quality control and plat dimensioning. Formatting in terms of name construction (i.e. unit11_plat_boundary_lines) and projection and datum will follow that of the polygonal shapefiles.

In accompanying polygon and line shape file database tables, feature specific records must also be included. In plat boundary database tables, the plat/subdivision name and the plat record information (plat book number and corresponding pages) must be included electronically before it's recorded. For easement database tables, the plat name (i.e. Old Palm East), easement name (i.e. 45' Flowage Easement), plat record information (plat book number and corresponding pages), and type of easement, as outlined in the legend description on page V-8 of this manual, (i.e. Platted W.M.E.) must be included. For reservation/preserve database tables, reservation/preserve name, plat record information (plat book number and corresponding pages), and reservation/preserve type must be included. For Northern owned tract database tables, tract name and PCN information (i.e. 52424202030030030), if available, must be included.

Once line and polygon shapefiles have been created and the records attributed properly, files must be submitted to Northern on CD-ROM. These should include polygon shapefiles (for plats, easements, reservations, and tracts). Furthermore, for each shape file, files with the .dbf, .sbn, .sbx, .shp, .shx, and .prj extensions should be included (i.e. unit11_plat_boundaries.dbf, unit11_plat_boundaries.sbn, unit11_plat_boundaries.sbx, unit11_plat_boundaries.shp, unit11_plat_boundaries.shx, unit11_plat_boundaries.prj).

IV. PLAT FEE SCHEDULE

Application Fee:
A fee of $250 is due with your application. Applications can be held until this fee is paid.

For review, approval and execution of a Plat there shall be due and payable a fee to be determined by Northern. The fee is due and payable prior to execution of the Plat by Northern officials.

Review Fees:
At the time the final mylar is approved an invoice for the actual cost of the review will be issued. The plat will not be released until payment is made.

Legal Fees:
All legal fees incurred to date by Northern in connection with the project being platted will be invoiced at this time.

CADD-GIS Conversion Fees:
Northern will assess a "CADD-GIS conversion fee" as determined by Northern on a case by case basis to fulfill the aforementioned Electronic File requirement. If the applicant submits the referenced electronic files in accordance with the aforementioned standards, the entire CADD-GIS conversion fee will be refunded upon review and acceptance of same. If Northern Staff completes this work, any unused balance, less Northern technical and administrative time will be returned to the applicant. This fee is to be submitted with the mylars, (per the invoice) prior to execution of the plat by Northern.
ALL FEES SUBJECT TO CHANGE WITHOUT NOTICE

V: CERTIFICATION

The undersigned, as or on behalf of the Owner, does hereby acknowledges and agree as follows: (i) that the information contained herein is true and correct to the best of their knowledge and belief, (ii) to provide timely and reasonable entry to the proposed platted site for Northern's representatives or consultants (with proper identification as such) for the purpose of making an inspection or analysis of the site, (iv) to pay any and all Plat submittal and issuance fees and costs in accordance with the above Fee Schedule, (v) if signing as an agent for the Owner, that the undersigned is authorized, pursuant to the attached written document, to execute this Plat Application for and on behalf of said Applicant, and (vi) to comply with all conditions/requirements of the Northern plat review process as described/outlined in this Application.

_____ _____

APPLICANT'S SIGNATURE **DATE**

_____

PRINT NAME

_____ _____

OWNER'S SIGNATURE **DATE**

_____

PRINT NAME

D. Sample Dedication Language

1. Fee Simple Absolute Dedications

The following are examples of dedications of water management tracts, preservation tracts and roadway tracts all of which are to be dedicated in fee simple absolute to Northern and thereafter the perpetual maintenance responsibility of Northern or its successors and assigns.

a. *WATER MANAGEMENT TRACT(S) (#), inclusive, as shown hereon, are hereby dedicated, in fee simple absolute, to the Northern Palm Beach County Improvement District for water management and other lawful purposes, said Water Management Tracts being the perpetual maintenance obligation of Northern Palm Beach County Improvement District, its successors and/or assigns, without recourse to the (NAME OF CITY/COUNTY).*

b. The PRESERVATION TRACT(S) (#), inclusive as shown hereon, are hereby dedicated, in fee simple absolute, to the Northern Palm Beach County Improvement District for water management, preservation and other lawful purposes, said Preservation Tract, being the perpetual maintenance obligation of Northern Palm Beach County Improvement District, its successors and/or assigns, without recourse to the (NAME OF CITY/COUNTY).

2. Preservation Tracts Under SFWMD Authority

For Preservation Tract(s) that are subject to SFWMD requirements or a conservation easement with the SFWMD having third party enforcement authority, the following language shall be used in the dedication:
(Listing prohibited activities in the dedication does not preclude citing these same prohibited activities in the Notes on the cover sheet of the plat)

With regards to "Notes" the wording should be similar to the following:" Notes on the plat shall be in conformance with Chapter 177, Florida Statutes and Ordinances of the applicable local government."

a. The PRESERVATION TRACT(S), (#), inclusive, as shown hereon, are hereby dedicated, in fee simple absolute, to the Northern Palm Beach County Improvement District as conservation areas for preservation, water management and other lawful purposes with said Preservation Tract(S) being the perpetual maintenance obligation of Northern Palm Beach County Improvement District, its successors and/or assigns, without recourse to the (NAME OF CITY/COUNTY). The Preservation Tract(s) may not be altered from their natural state except following

approval, in permit form, from the Northern Palm Beach County Improvement District. Activities prohibited without a Northern Palm Beach County Improvement District permit within the PRESERVATION TRACT(S) include, but are not limited to, construction or placing of buildings on or above the ground; dumping soil or other substances such as trash; removal or destruction of trees, shrubs, or other vegetation; excavation, dredging or removal of soil material; or any other activities detrimental to drainage, flood control, water conservation, erosion control, or fish and wildlife habitat, conservation or preservation.

b. ROADWAY TRACT(S) (#), inclusive, as shown hereon, are hereby dedicated, in fee simple absolute, to the Northern Palm Beach County Improvement District for roadway, ingress-egress, utility, drainage and other lawful purposes, said ROADWAY TRACT(S) being the perpetual maintenance responsibility of Northern Palm Beach County Improvement District, its successors and/or assigns, without recourse to (NAME OF CITY/COUNTY).

3. Easement Dedications

The following are examples of dedications of water management easements, water management maintenance easements and ingress/egress easements to Northern. They reflect easements across lands owned and/or maintained by a Property Owners Association. In instances where the easements cross privately owned land, a phrase similar to the following may be used: *"…the lands therein and there under being the perpetual maintenance obligation of the fee simple owner(s) thereof, their heirs, successors and/or assigns…"*

a. *THE WATER MANAGEMENT EASEMENT(S), as shown hereon, are hereby dedicated to the Northern Palm Beach County Improvement District for the installation, construction, operation, inspection, repair, replacement, upgrade and maintenance of water management and other Northern Palm Beach County Improvement District facilities, the lands therein and thereunder being the perpetual maintenance obligation of (NAME OF POA/HOA), its grantees, successors and/or assigns, without recourse to Northern Palm Beach County Improvement District and without recourse to (NAME OF CITY/COUNTY). Northern Palm Beach County Improvement District shall have the right, but not the obligation, to construct, operate, inspect, repair, replace, upgrade and maintain water management and other Northern Palm Beach County Improvement District facilities within these easement areas.*

b. THE WATER MANAGEMENT MAINTENANCE EASEMENT(S), (ALSO FOR WATER MANAGEMENT ACCESS EASEMENTS) as shown hereon, are hereby dedicated to the Northern Palm Beach County

Improvement District for pedestrian or vehicular ingress and egress, including temporary parking or storage usage thereof, to and for the maintenance of adjacent or nearby water management and other Northern Palm Beach County Improvement District facilities, said easements being the perpetual maintenance obligation of (NAME OF POA/HOA), its grantees, successors and/or assigns, without recourse to Northern Palm Beach County Improvement District.

c. *The INGRESS-EGRESS EASEMENT(S), as shown hereon, are hereby dedicated to the Northern Palm Beach County Improvement District for pedestrian and vehicular ingress and egress, plus temporary parking, to and from Northern's water management improvements and other facilities, lands and easements, the lands encompassed by said ingress-egress easement(s) being the perpetual maintenance responsibility of (NAME OF POA/HOA), its grantees, successors and/or assigns, without recourse to Northern Palm Beach County Improvement District.*

d. *The INGRESS-EGRESS EASEMENT(S), including those over ROADWAY TRACTS, (#), inclusive, as shown hereon and all of TRACT (#), as shown hereon, are hereby dedicated to the Northern Palm Beach County Improvement District for pedestrian and vehicular ingress and egress, including temporary parking, to and from Northern's water management improvements and other facilities, lands and easements, the lands encompassed by said ingress-egress easement(s) being the perpetual maintenance responsibility of the (NAME OF POA/HOA), its grantees, successors and/or assigns, without recourse to Northern Palm Beach County Improvement District.*

4. Acceptance and Acknowledgement Statements

The following are examples of Northern's acceptance and acknowledgement statements. These statements shall be dated, signed by the President of the Board of Supervisors and attested by the Secretary of the Board of Supervisors.

a. Acceptance of Tracts or Easements

i. The NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT hereby accepts the fee simple dedication of Tracts ----------and Tracts------as shown hereon and hereby acknowledges the perpetual maintenance obligation of said Tracts.

Dated this ----------day of ----------, 20__

NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT

Attest: ---------- *By: ----------*
_____, Secretary *_____, President*
Board of Directors. *Board of Directors*

ii. The NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT hereby accepts the Water Management Easements, as shown hereon and hereby acknowledges said Northern Palm Beach County Improvement District has no maintenance obligation, in, over, under or upon the lands over which said easements lie; and hereby accepts the right, but not the obligation to construct, operate, repair, replace, upgrade, inspect and maintain its water management facilities lying within said Water Management Easements.

Dated this ----------day of ----------, 20__

NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT

Attest: ---------- *By: ----------*
_____, Secretary *_____, President*
Board of Directors. *Board of Directors*

b. Acknowledgement

In instances where the plat is not dedicating any tracts or easements to Northern and Northern is not incurring any maintenance responsibilities, the following acknowledgements may be used.

i. NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT hereby acknowledges that there are no dedications to, nor any maintenance obligations being incurred, accepted or assumed by Northern Palm Beach County Improvement District on this plat.

ii. *NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT hereby acknowledges there are no dedications to, nor any maintenance obligations being incurred, accepted or assumed by Northern Palm Beach County Improvement District on this plat; and further acknowledges that Northern's existing (NAME) easement as recorded in Official Record Book _____ at Pages _____ through _____ inclusive, Public Records of Palm Beach County, Florida, is shown hereon.*

5. General Comments Regarding Plat Dedication Sheets

a. Any plat of areas under Northern jurisdiction containing dedications of drainage easements which do not involve Northern and/or with dedications of tracts and/or roadways involving drainage facilities which are not part of Northern responsibilities, shall contain a statement *"…and without recourse to the NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT"* in the portion of the dedication identifying the maintenance responsibilities regarding same.

b. The NOTES on any plat containing dedications of ingress/egress easements, water management easements or water management maintenance easements to Northern and/or on any plat containing or contiguous with existing water management or water management maintenance easements, shall contain the following note: *"There shall be no buildings, structures, construction of any kind, trees or shrubs placed in, over, under or upon the ingress/egress easements, water management easements or water management maintenance easements, as shown hereon, including those existing easements as recorded in Official Record Book at Pages ____ through _____ inclusive, Public Records of Palm Beach County, Florida unless and until approved, in permit form, by the NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT."*

c. Each plat shall have a place reserved for the seal of the NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT.

d. The Legend shall include abbreviations as may be used for Northern tracts and easements, as follows:

L.M.E.	=	LAKE MAINTENANCE EASEMENT
U.E.	=	UTILITY EASEMENT
A.E.	=	ACCESS EASEMENT
L.A.E.	=	LIMITED ACCESS EASEMENT
L.B.E.	=	LANDSCAPE BUFFER EASEMENT
D.E.	=	DRAINAGE EASEMENT
S.S.E.	=	SAFE SIGHT EASEMENT
P.A.E	=	PEDESTRIAN ACCESS EASEMENT
P.M. E.	=	PRESERVE MAINTENANCE EASEMENT

W.P.E.	=	WETLAND PRESERVATION EASEMENT.
S.E.	=	SIDEWALK EASEMENT
W.M.A.E.	=	WATER MANAGEMENT ACCESS EASEMENT
I.E.E	=	INGRESS AND EGRESS EASEMENT
P.D.E	=	PUBLIC DRAINAGE EASEMENT
W.M.E	=	WATER MANAGEMENT EASEMENT.
P.P.A.E.	=	PERPETUAL PUBLIC ACCESS
W.M.M.E.	=	WATER MANAGEMENT MAINTENANCE EASEMENT
W.M.M.A.E.	=	WATER MANAGEMENT MAINTENANCE AND ACCESS EASEMENT.

6. Dedications Prior to Adoption of Plan of Improvements

a. *Tract (Roadway Tract), as shown hereon, is hereby being retained by (Owner), for private or public street and other proper purposes not inconsistent with this Plat including, but not limited to, drainage, utilities, landscaping, signage, (if for a private road add - "gate/gatehouse") and pedestrian circulation. Subsequent to the recording of this Plat the Tract (Roadway Tract), together with some or all of the improvements then located therein or thereon, including the right but not the obligation to maintain said tract and improvements, may be conveyed in fee simple absolute (subject to a reservation or dedication of a non-exclusive easement of ingress and egress for Owner, HOA, its successors and/or assigns) to the Northern Palm Beach County Improvement District. Until such conveyance occurs and the right, but not the obligation, to maintain said Tract (Roadway Tract), together with improvements located therein and thereon is accepted by Northern Palm Beach County Improvement District or other Northern Palm Beach County Improvement District approved authority and said acceptance recorded in the public records of Palm Beach County, Florida, said Tract (Roadway Tract) together with all the improvements located therein or thereon, shall be the perpetual maintenance responsibility of (Owner, HOA), its successors and/or assigns, without recourse to Northern Palm Beach County Improvement District and without recourse to the (CITY).*

b. Tracts (Recreational or Preserve Tracts) as shown hereon are dedicated in fee simple absolute to (Owner, HOA), its grantees, successors and/or assigns, for recreational and/or other proper purposes (subject to the possible future grant of the hereafter identified water management easements) and are the perpetual maintenance obligation of said (Owner, HOA), its successors and/or assigns, without recourse to the (CITY). Subsequent to the recording of this Plat exclusive water management easements may be granted to Northern Palm Beach County

Improvement District, together with the easement right, but not the obligation, to construct, install, operate, inspect, repair, upgrade, replace and/or maintain water bodies, drainage culverts and other facilities within said water tracts.

c. *Tracts (Lake Tracts), as shown hereon, are hereby dedicated in fee simple absolute to (HOA), its grantees, successors and/or assigns. Subsequent to the recording of this Plat, said Tracts (Lake Tracts) may be conveyed without encumbrances and in fee simple absolute, together with some or all of the improvements then located thereon, as well as the right, but not the obligation, to maintain said Tracts (Lake Tracts) and the water bodies and improvements located therein or thereon, to the Northern Palm Beach County Improvement District. Until such conveyance occurs, together with such maintenance responsibilities as may be assumed by Northern Palm Beach County Improvement District and said acceptance is recorded in the Public Records of Palm Beach County, Florida, said Tracts (Lake Tracts) shall be the perpetual maintenance responsibility of (Owner, HOA), its grantees, successors and/or assigns, without recourse to the Northern Palm Beach County Improvement District and without recourse to the (CITY).*

d. *The Water Management Easements as shown hereon, (subject to the possible future grant of those hereafter described easements), are hereby dedicated to the (HOA), its grantees, successors and/or assigns, for the construction, operation, repair, replace, upgrade, inspection and maintenance of water management facilities with the lands therein and thereunder being the perpetual maintenance obligation of said Association. Subsequent to the recording of this Plat a part or all of said Water Management Easements may be, subject to written acceptance and the recording thereof in the public records of Palm Beach County, Florida, granted, conveyed or assigned to Northern Palm Beach County Improvement District, together with the right, but not the obligation, to construct, operate, inspect, upgrade, repair, replace and maintain facilities within said easements. Regardless of whether such a conveyance occurs, the lands within a water management easement area shall remain the perpetual maintenance responsibly of said Association, it grantees, successors and/or assigns, without recourse to Northern Palm Beach County Improvement District and without recourse to the (CITY).*

SECTION 7 - PERMITTING

A. Requirements for a Northern Permit

A Northern permit is required prior to commencement of construction activities that involve connection or utilization of Northern works or construction upon or occupation of Northern property or right-of-way (section 3(A) (II) of Chapter 2000-467, Laws of Florida {Northern's Charter} and Florida Statute 298.28.)

B. General Information

1. Application Requirements: See Page 3 of Permit Application
2. Review Process: See Page 4 of Permit Application
3. Permit Fee Schedule: See Page 6 of the Permit Application
4. Permit Denial – Permittee Recourse
   All applicants denied a permit have the right to appeal to the Northern Board of Supervisors. The request for appeal must be submitted in writing to Northern's Senior Engineer at least 14 days prior to any given Board Meeting for inclusion in that Board Meeting. The request for appeal should explain the reasons for the appeal and why the permit should be granted. Meeting agendas are available on Northern's website.
5. Permit Duration
   Upon written notification that the permit review has been completed and all comments have been adequately addressed, the applicant will have 30 days to pay all applicable review and inspection fees, which payment date will be the permit's issuance date. If the permit is not issued within the 30 day payment period, its issuance shall thereupon be cancelled. A signed notice of commencement for the permitted activity must be filed with Northern within 365 days of the permit's issuance date or the permit shall thereupon automatically terminate and a new permit application, as well as payment of new application and review fees, will be required. The notice of commencement should be sent to Northern no sooner than one week prior to commencement.
6. Permit Inspection/Closure
   It is the responsibility of the Permittee, or their designated representative, to schedule the necessary inspections with Northern. Failure to do so may result in the revocation, cancellation and termination of the Permit.
   Upon completion of the Permitted Activity and after its final inspection and acceptance by Northern, the Permittee shall deliver to Northern's office an Engineer's Certification of Completion, (signed and sealed) and final "Record Drawings". The "Record Drawings" shall be in the form of one electronic copy with both PDF and AutoCAD 2000 or newer formats. Failure to provide the final documentation may result in the revocation, cancellation and termination of this Permit.

C. Application

Northern Palm Beach County Improvement District

359 Hiatt Dr., Palm Beach Gardens, FL 33418
Phone: 561-624-7830 Fax: 561-624-7839

Office Use Only:
Date Received: ___
Unit No: _____
Permit No: _____
Plat No: _____

I: PROJECT INFORMATION

(PLEASE TYPE OR PRINT ALL APPLICABLE INFORMATION)

Project Name: _____
Project Description *(ex. Connect 36" RCP outfall to NPBCID Drainage Canal)*_____
_____
_____
_____
Acreage or Lot No.: _____
Proposed Start Date: _____ **Est. Completion Date:**
☐ _____
Plat Required: Y ☐ N **Plat Submitted: Y ☐ N ☐**
Improvement(s) To Be Dedicated To Northern: Y ☐ N ☐

OWNER/PERMITTEE

NAME	*PHONE*	*FAX*
COMPANY	*E-Mail*	
MAILING ADDRESS	*PROJECT ADDRESS (IF NOT MAILING ADDRESS)*	
CITY, STATE, ZIP	CITY, STATE, ZIP	

APPLICANT (if different from Owner)

NAME	PHONE
COMPANY	FAX
MAILING ADDRESS	E-MAIL
CITY, STATE, ZIP	SECONDARY CONTACT NUMBER

ENGINEER

NAME	PHONE
COMPANY	FAX
MAILING ADDRESS	E-MAIL
CITY, STATE, ZIP	SECONDARY CONTACT NUMBER

(If there is another consultant closely involved with this project please enter their name and contact information in one of the above sections with notation.)

II. APPLICATION DETAILS: Before submitting to Northern please check to make sure you have all required items in your submittal package since incomplete submittals will be held until all parts are received in order to provide a comprehensive review. Full submittal includes 1 completed application, 1 each (hardcopy and PDF Document) complete sets of plans including related Utility and Pollution Prevention plans (signed & sealed), check for application fee, 1 each copy of SFWMD or DEP 10-2 and NPDES permits (if applicable), 1 PDF set of drainage and/or water management calculations (signed & sealed), 1 PDF copy engineering cost estimate (signed & sealed), 1 PDF Document copy of proposed plat and boundary survey (if applicable). Plans should include at a minimum: proposed roadway section(s), driveway connection(s), canal or lake sections with drainage connections and related details meeting NPBCID standards (where applicable), District right-of-way and easement lines, dimensions to proposed facilities within the NPBCID easement or right-of-way (encroachments, i.e. fence). All design plans and calculations shall be signed and sealed by an Engineer registered in the State of Florida. Prior to issuance of a permit signed and sealed PDF Documents of the final approved engineering plans and calculations shall be submitted for District Records. The Engineer's signature and seal shall meet the Florida Board of Professional Engineer's latest requirements for electronic signature. PDF Documents shall conform to the following naming convention: PERMIT/PLAT REFERENCE No.-DOCUMENT TYPE-S&S DATE YYYY-MM-DD. *Example: PER-16-111-CIVIL PLANS-2020-01-24*

DRAINAGE

( ) NEW PROJECT ( ) Direct Connection to NPBCID Lake/Canal
( ) Indirect Connection to NPBCID Lake/Canal
( ) MODIFICATION ( ) To Existing NPBCID Permit No. _____
( ) To Existing Drainage System
( ) OTHER: _____

_____

CONSTRUCTION **New Construction for which NPBCID shall own and/or maintain improvements**

( ) DEDICATION OF WATER MANAGEMENT TRACT(S)
( ) DEDICATION OF PRESERVE(S)
( ) OTHER: _____

_____

CANAL CROSSING

( ) BRIDGE ( ) UTILITY ( ) CULVERT ( ) OTHER:_____

R/W ENCROACHMENT

( ) STRUCTURE OVERHANG ( ) LANDSCAPE W/EASEMENT
( ) FENCES/GATE ( ) UTILITIES
( ) IRRIGATION CONNECTION ( ) OTHER: _____
( ) DOCK/SEAWALL

_____

UTILITY TYPE

( ) POLE TO POLE
( ) AERIAL/SUBAQUEOUS
( ) INFRASTRUCTURE CONSTRUCTION WITHIN NPBCID EASEMENT
( ) INFRASTRUCTURE CONSTRUCTION WITHIN NPBCID RIGHT-OF-WAY
( ) OTHER: _____

III: PERMITTING PROCESS

Upon submittal, the Application Package will undergo a first review. Comments on, or denial of, your application will be forwarded to the Engineer of Record or Permittee as deemed appropriate. A second review will take place following receipt of the written response to the comments. Second submittals of revised plans, calculations and other pertinent documents may be made electronically, however plans, calculations, reports, drainage statements, etc. must be signed and sealed by the engineer of record. The process of comment/resubmittal will continue until Northern notifies you that the Permit has been approved, pending payment of remaining fees, or denied for a given reason.

If approved, an invoice for Permitting/Inspection Fees will be faxed, e-mailed or mailed to the Engineer of Record and/or the Permittee. Upon receipt of payment Northern Officials will execute the Permit and a copy will be faxed, emailed or mailed to the Engineer of Record and/or Permittee.

At this point the permit moves into the inspection/usage stage. The Permittee is required to notify Northern or the District Engineer at least 48 hours prior to the start of construction so that permitted activities can be monitored. Notification is made using the District's Notice of Construction Commencement Form provided with the issued permit. Upon completion of the Permitted Activity and after its final inspection and acceptance by Northern, the Permittee shall provide to Northern's office PDF Documents of each of the Engineer's Certification of Completion, (signed and sealed) and final "Record Drawings" (signed and sealed) and one electronic copy of the "Record Drawings" in AutoCAD 2000 or newer formats . The Engineer's signature and seal shall meet the Florida Board of Professional Engineer's latest requirements for electronic signature. PDF Documents shall conform to the following naming convention: PERMIT REFERENCE No.-DOCUMENT TYPE-S&S DATE YYYY-MM-DD. Example: *PER-16-111-Record Drawings-2020-01-24.* Failure to provide the final documentation may result in the revocation, cancellation and termination of this Permit. Upon approval and acceptance of the Record Drawings by the District Engineer or Northern the permit file will be closed.

ALL ASPECTS OF THE PERMITTING PROCESS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

IV: CERTIFICATION

The undersigned, as or on behalf of the Applicant, does hereby and, where applicable, agree as follows: (i) that the information contained herein is true and correct to the best of their knowledge and belief, (ii) to provide entry to the project site for Northern's representatives or consultants (with proper identification as such) for the purpose of making an inspection or analysis of the project site, (iv) to pay any and all Permit submittal and issuance fees and costs in accordance with the attached Fee Schedule, and (v) if signing as an agent for the Applicant, that the undersigned is authorized, pursuant to the attached written document, to execute this Permit Application for and on behalf of said Applicant.

APPLICANTS SIGNATURE **DATE**

PRINT NAME

OWNER/PERMITTEE SIGNATURE **DATE**

PRINT NAME

To whom should we forward the invoice:
Applicant ( ) Owner/Permittee ( ) Engineer ( )

V.FEE SCHEDULE

Submittal Fee:
Single Family Residential Lot: $250.00 all others: $500.00 including POA's, Governmental Agencies, Utility Companies, Developers, etc.

Review Fees:
Permit review fees are based on actual engineering costs associated with the permit review process. If during the review process, the review fees exceed $2,000.00 prior to permit approval, an interim invoice will be issued to the Permittee. For review fees less than $2,000.00 an invoice for the actual cost of review will be sent prior to permit issuance.
There will be a $250.00 administrative fee due for any permit modification requests submitted subsequent to the issuance of the permit plus any applicable review fees.

Legal Fees:
All legal fees incurred by Northern in connection with the project being permitted will be invoiced in conjunction with review fees.

Inspection/Usage Fees:

The invoice referenced above will also include a minimum inspection fee of $250.00 or 3% of Engineer's Cost Estimate for construction, whichever is greater. The cost estimate is to be based on Northern permitted activities and affected facilities. This fee will cover Northern's cost to inspect permitted activities, attend project meetings and deal with any other miscellaneous items that come up before the permit is closed. Please note that the Permittee is required to submit a signed and sealed cost estimate from their Engineer of Record with the initial submittal. When the permit is complete and has been closed by Northern all remaining inspection fees will be returned to the Permittee. Please allow 4 to 6 weeks from the time of closure for delivery of the check.
If additional inspection fees or other related fees to the permit above the $250.00 or 3% of the cost of construction are incurred, the Permittee will be invoiced for the remaining balance and that balance must be paid prior to permit close out.

WAIVER OF FEES

The following types of permit submittals are granted an automatic waiver:

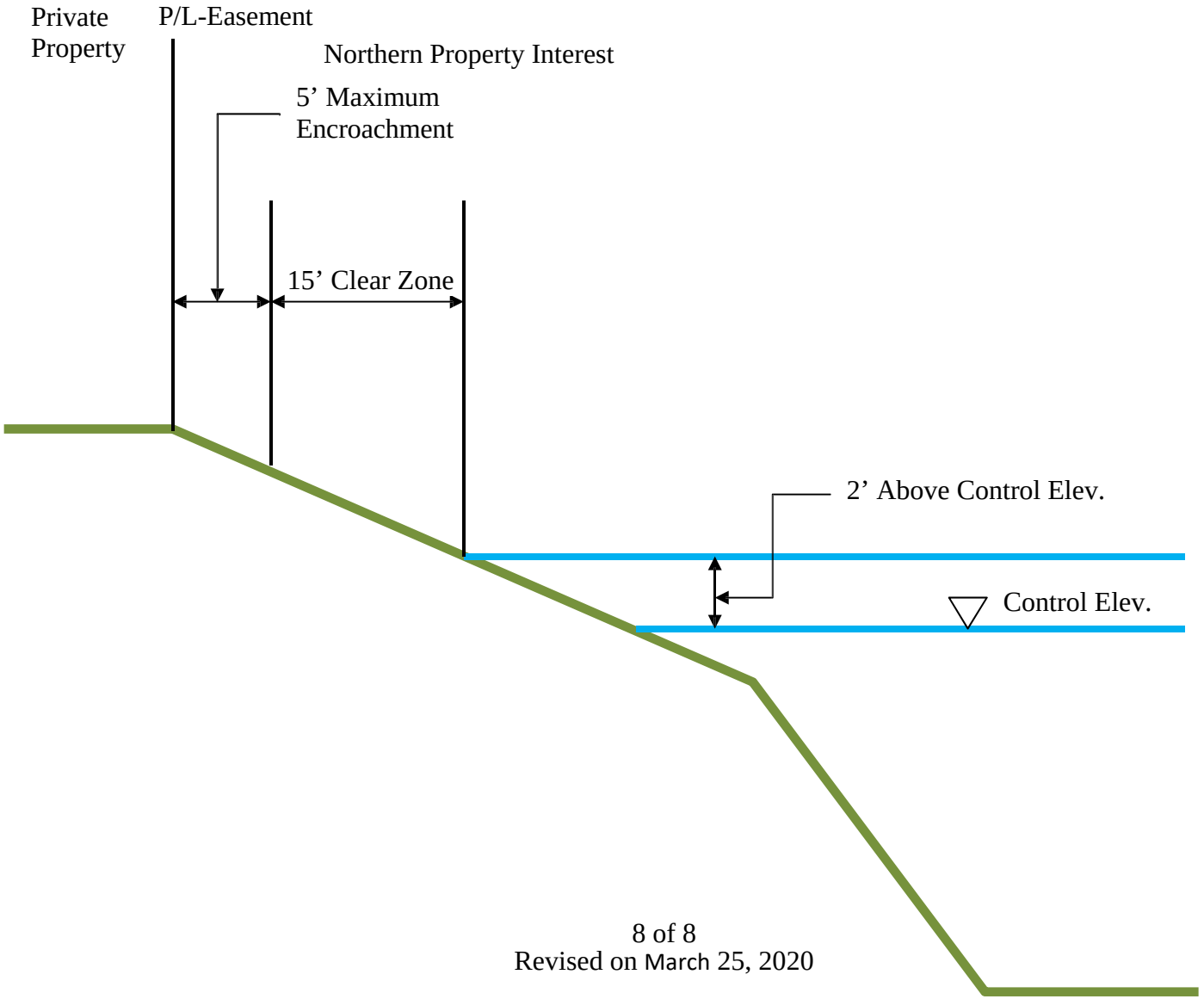
a. All permit submittals to address prospective or remedial erosion control within a Northern property interest shall be exempt from payment of Northern's standard permit fees and charges.

THE PERMIT WILL NOT BE ISSUED UNTIL FULL PAYMENT IS RECEIVED.
ALL FEES SUBJECT TO CHANGE WITHOUT NOTICE

Effective March 28, 2012, requests for above ground encroachments within a Northern water management tract, easement, or other real property interest by applicants other than another utility provider will be subject to the criteria indicated on the attached cross section identified as "Maximum Encroachment Criteria". The applicant will be responsible for providing survey data from a Florida licensed Land Surveyor substantiating that the proposed encroachment will be in compliance with said Criteria. If the survey data confirms that compliance with the stated Criteria will be met, the applicant will then be required to apply for a construction permit in accordance with Northern's established permitting program for the proposed improvements. Northern reserves the right to record its permits or a Notice thereof in the public records of Palm Beach County."

D.Maximum Encroachment Criteria

- Maximum above ground encroachment is 5’.
- Minimum clear zone of 15’ after allowance for 2’ rise in lake level from control.



Northern Palm Beach County Improvement District

Erosion Control Grant Program

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Exhibit D: Cross-Sections / Diagrams of Approved Repair Methods - Articulating Concrete Block Revetment

Exhibit E: Cross-Sections / Diagrams of Approved Repair Methods - Bulkhead or Retaining Wall

Exhibit F: Cross-Sections / Diagrams of Approved Repair Methods - Geo-Fabric / Geo-Textile

Exhibit G: Cross-Sections / Diagrams of Approved Repair Methods – Rip-Rap

Exhibit H: Cross-Sections / Diagrams of Approved Repair Methods - Slope Reconstruction

Exhibit I: Cross-Sections / Diagrams of Approved Repair Methods – GEOWEB Slope Stabilization

I. Introduction

Northern Palm Beach County Improvement District ("Northern") has encountered sporadic erosion issues over the years and regularly repairs erosion that materially diminishes the capacity of Northern's water management system or creates a potential life safety issue. These kinds of problems tend to occur rapidly and generally result from overland flows eroding lake or canal slopes above the water line. However, there are other examples of erosion that occur very slowly and do not diminish the capacity or the capability of Northern's water management systems.

Northern's Staff and Consultants discussed their erosion policy recommendations with Northern's Legal Committee. General Counsel presented its legal opinion regarding erosion and legal ramifications associated with erosion related corrective measures. The District Engineer and Staff discussed Northern's obligation/authority to address erosion, the financial ramifications of restoration and the criteria to determine the necessity of restoration. The Committee asked Staff to develop criteria to determine which areas qualify for repair and establish a second set of criteria that can be used to prioritize erosion areas for repair.

The goal of this Erosion policy is to implement an erosion control program for individual landowners that complies with legal, health, safety and maintenance requirements as well as being fiscally responsible to the landowners within an impacted Unit of Development.*

**Note: Northern Palm Beach County Improvement District consists of multiple "Units of Development" Each "Unit" represents a distinct geographic area within Northern's jurisdictional boundaries.*

II. Management Commitment and Involvement/Policy Statement

Staff is committed to providing high quality service to its constituents. It is the policy of Northern to promptly repair erosion sites that materially diminish the capacity of Northern's water management system or create a potential life safety issue. Northern's Operations and Engineering Department will monitor and report erosion sites throughout Northern's storm water management system. When a Unit's annual budget is prepared, funds will be budgeted for ongoing preventative erosion repairs and restorative maintenance and contingencies.

Northern's Staff and Consultants will present immediate and long-term erosion concerns that materially diminish the capacity of Northern's water management system or create a potential life safety issue to Northern's Board, as well as the estimated financial costs associated with them. The primary responsibility for the coordination, implementation, maintenance and control of erosion has been assigned to the Engineering and Operations Departments. Staff and Consultants will establish and maintain an effective erosion control program and assist in the implementation of this program.

This policy statement serves to express Northern's Staff and Consultants' commitment to and involvement in developing and managing an effective erosion control program.

III. Responsibilities

A. Northern Palm Beach County Improvement District

Northern responds immediately to erosion which impedes the ability of the surface water management system to provide protection to land and improvements. There are areas that experience erosion that do not impede the system, are not included on Northern's priority group and are not repaired by Northern. The owners of property not included in Northern's priority group may seek to obtain grant funded assistance subject to limitations of that year's budget, if funds are available.

B. Resident/Landowner

A Landowner who wishes to obtain grant assistance for an erosion problem, shall be responsible for the following:

1. Submission of a completed Grant Application to Northern by July 1st of each year, together with the supporting data or documentation specified in the Application.
2. Providing written responses and information requested by Northern in a timely manner.
3. Agreeing to utilize erosion control methods approved and permitted by Northern and its District Engineer.
4. If engineering services are required, the Landowner must agree to use one of Northern's Project Engineers or an Engineer approved by Northern.
5. Upon notification of approval of the Grant Application, submission by November 15 of a permit application and supporting information as required by Northern.
6. Obtaining all necessary permits and approvals, including those of other governmental entities.
7. Provision of a performance bond issued by the landowner's contractor to Northern, if necessary and if so specified in the Agreement.
8. Preparation and submission of a construction activity schedule for the erosion project.
9. Provision and submission of the contractor's licenses to do business and insurance coverages.

Should the landowner fail to fulfill their obligations as specified by June 30th of the following year after notification by Northern of approval of the Grant Application, the grant approval shall thereupon lapse and terminate without further notice. Any further interest in the grant application program will need to be resubmitted. Once the Grant Application

approval is terminated, the landowner will need to begin the Grant Application procedure over again as outlined above.

Grant funds will only be provided on a reimbursement basis as a percentage of total construction costs in accordance with the Erosion Grant Program reimbursement guidelines and budgetary constraints following the Landowner's completion and provision of certification, if applicable, of the approved erosion project.

C. Property Owners Association/Homeowners Association

Landowners and Property Owners Association/Homeowners Association's are encouraged to take responsibility in the following areas:

1. Development of procedures and policies that help alleviate erosion.
2. Assure that erosion control and remedial activities comply with Northern's guidelines.
3. Distribution of erosion control literature to property owners regarding the sources of erosion and associated problems.
4. Development of landscaping installation and location guidelines and projects which include environmentally sound erosion control plans.
5. Monitoring programs to assure that landscape projects are designed to be within the property owner's ability to maintain all aspects of the project, will not interfere with the ability of Northern or the Property Owners Association to maintain adjacent lakes or canals and will compliment and provide support to Northern's Erosion Control Program.
6. Creation of partnerships for erosion projects so that costs can be shared and comprehensive solutions achieved.

IV. Grant Program Administration

Northern's Erosion Grant Program is to assist landowners with erosion repair and control activities. The Erosion Grant Program includes the following:

A. Grant Application (See Exhibit A: Grant Application)
The property owner or their authorized agent must sign and complete the attached Erosion Grant Application and thereafter submit it to Northern for consideration. All spaces must be filled in or marked as "n/a". Applications will not be considered until such time as the application is deemed complete by Northern's Staff.

The Erosion Control Grant Program is only available for individual landowners. Property owners associations, homeowners associations, corporations and equivalent companies, or any other form of ownership other than individual landowners, do not qualify to apply for the Erosion Control Grant Program.

B. Application Review Procedure (See Exhibit B: Application Review Procedure)
All grant applications will be reviewed by the District in accordance with the Application Review Procedure. The evaluation matrix which is included as part of the procedure, will be used to establish reimbursement percentages.

C. Grant Agreement (See Exhibit C: Grant Agreement)
The property owner must complete, execute and return the Grant Agreement to Northern within 30 days of written notification from Northern of its approval of a grant. Should the owner fail to do so, the grant approval shall thereupon terminate without further notice.

D. Erosion Control Program Guidelines
The District will consider those erosion control repair measures identified in Section VI and approved by the District Engineer. Other measures may be considered if submitted by an engineer licensed in the State of Florida.

E. Property Owners Association/ Homeowners Association/Architectural Review Board

The applicant must obtain and submit written approval from all appropriate agencies including the master property owners association, homeowner association and architectural review board as may be applicable. Failure to obtain this approval will void the grant. Should the applicant fail to do so, the grant approval shall terminate. Any further consideration of the project will not occur until the project is resubmitted pursuant to the provisions of Erosion Control Policy.

V. Qualifying Erosion Areas

In those Units of Development where an erosion grant program has been budgeted, Staff and the District Engineer shall prepare, on an annual basis, a prioritized inventory of grant applications. Grant funding will not be considered if erosion control activities have been assumed by a third party either contractually or by Northern's permit. This grant program is not retroactive. Grants must be approved and permits acquired prior to the installation of improvements. The applications shall be ranked based on the following criteria, once the following information is obtained:

A. Determination of legal authority and maintenance responsibility

1. Northern's Plan of Improvements shows that Northern is responsible for management of the affected surface water system;
2. Proof of legal access to the affected area;
3. Receipt of all other governmental authorizations and permits, if any;
4. Proof of Northern's and applicant's real property interest in lake/canal and adjacent affected area;

B. Erosion Priority List Criteria. The following elements will be utilized in a matrix identified in paragraph C below to rank areas needing erosion repair or bank reconstruction:

1. Potential Health/Safety Issues – bank slopes, adjacent activities, etc.
2. Impact to Public Property Interest - roads, drainage structures, etc.
3. Impact to Private Property Interest – homes, decks, fences, etc.
4. Accessibility Issues – is access to structures and other District facilities hindered?
5. Impact to System Functionality – are flow ways obstructed or storage capacity diminished?
6. Permit/Compliance Issues – compliance with 4:1 Slope Standard
7. Cost Benefit of construction, including engineering, legal, and administration.
8. Continuity: does the project involve a continuous shoreline with POA, HOA, or through multiple, adjacent property owners.

C. Grant Program Matrix. Applications submitted for consideration will be ranked "A – Highest Priority", "B- Medium Priority", or "C-Low Priority". Applications will also be considered for contiguous shoreline remediation with varying reimbursement categories as reflected in the following matrix:

Board of Supervisors Reimbursement Guidelines

Priority	A	B	C
More than 300' of Contiguous Shoreline	50%	40%	30%
Less than 300' of Contiguous Shoreline	40%	30%	20%

Notes: The percentage reflects Northern's maximum potential reimbursement amount to qualified landowners, subject to budgetary constraints.

VI. Approved Repair Methods and Standards

Northern's District Engineer and Staff have identified the following recommended repair methods and standards in descending order of preference. Detailed specifications and/or cross-sections are provided in Exhibits D-H. The repair methods are as follows:

A. Articulating Concrete Block Revetment (Exhibit D)

Concrete blocks connected by heavy cables. Articulated concrete block revetment is very effective as an erosion control system but is costly to install and must be installed with heavy equipment. Accordingly there must be unobstructed reasonable access that will support heavy equipment and equipment staging areas. The mat must be underlayed with filter fabric or other similar type geotextile material and the spaces between the blocks filled with gravel.

B. Bulkheads or Retaining Wall (Exhibit E)

Bulkheads or Retaining Walls may differ substantially in cost and material depending on their height and aesthetic requirements. Small shallow walls (less than 3' exposed height) may be made of high density plastic and installed with light equipment. Larger, deeper walls may be made of aluminum, steel or concrete piers and panels. Obviously the larger the wall the more costly and complicated the installation. These systems must be designed by a licensed engineer, and their construction certified by a licensed engineer upon their completion.

C. Geo-Fabric / Geo Textile (Exhibit F)

Geo-Fabric or Geo-textiles are an effective means of addressing areas that need additional stabilization beyond merely the placement of fill and sod. The material is generally anchored at the top of the bank and gravel, seed, or sod is placed over the material. The material shall be synthetic and is

designed to provide a structural base for natural growth and slope stabilization.

D. Rip-Rap (Exhibit G)

Rip-Rap refers to the use of large aggregate and can consist of broken concrete, natural rock, or sand-cement bags. Installation must be in accordance with District standards. Broken concrete in accordance with FDOT minimum standards and stone material shall be evenly graded and must range in size from stones of 60 lb or more down to smaller material to be used to fill in gaps. Sand-cement rip-rap can be installed using light equipment however; cement and stone aggregate must employ heavy construction methods to deliver the material to the site and place it.

E. Slope Reconstruction (Exhibit H)

Complete slope reconstruction is an option, however; it may not prove practical where erosion is significant or extends to the bottom of the water body. Slope reconstruction includes using fill that is either brought to the site or excavated from the existing water body and resodding the slope. This method includes the use of heavy equipment and access must be available to the site. The design must not exceed a 4 horizontal to one vertical slope from two feet below the water's edge to two feet above the water's edge.

VII. Legal

A. Grant Agreement (See Exhibit B: Grant Agreement).The Grant Agreement must be complete and fully executed to be considered by the Board.

B. License and Insurance Requirements. All work must be performed by an insured contractor that is properly licensed by the State of Florida, Palm Beach County and/or applicable municipality.

C. Real Property Interest. The Resident/Landowner must provide proof that Northern and the applicant have a real property interest in the affected areas. The Erosion Control Grant Program is only available for individual landowners. Property owners associations, homeowners associations, corporations and equivalent companies, or any other form of ownership other than individual landowners, do not qualify to apply for the Erosion Control Grant Program.

D. Maintenance Obligation. The following conditions apply:

1. Existing easements must be identified and Northern must be responsible for maintenance of the easement area.

2. Property owned and/or maintained by a property owners association or homeowners association does not qualify for assistance through the Erosion Grant Control Program.
3. The applicant must utilize erosion control methods identified in this program and permitted by Northern for the subject property.

Exhibit A: Grant Application

NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT
EROSION CONTROL GRANT APPLICATION
FISCAL YEAR _____

This Grant Application must be completely filled out with appropriate statements in the space provided. Do not exceed the space provided for responses to each question. Completed Grant Applications, together with all herein requested documentation, must be submitted no later than 3 P.M. on July 1, 2013 to:

Kimberly Leser, P.E. District Engineer
Northern Palm Beach County Improvement District
359 Hiatt Drive
Palm Beach Gardens, FL 33418

1. **Property Owner**:

   Name: _____

   Address: _____

   _____

   Phone:_____

   Contact Person**:**_____

   Contact Person's Phone No.: _____Email:_____

2. **Provide a brief description of the project and erosion site. Please include a lot survey and 5 photographs of the location and three copies of each photograph.**

3. **Type of Erosion Control method proposed (refer to Northern Approved Repair Methods):**

4. **Estimated total project cost:** $_____
   Provide a minimum of two construction cost quotes from licensed contractors.

5. Does the applicant have funds available and budgeted to pay for the applicant's share of the Project's cost? Yes_____ No_____

6. Please specify Contractor's name and contact information:

   Name:_____

   Address:_____

   _____

   Phone:_____

   Cellular Telephone:_____

   Fax:_____

   Email:_____

7. Please specify Engineer's name and contact information, if applicable:

   Name:_____

   Address:_____

   _____

   Phone:_____

   Cellular Telephone:_____

   Fax:_____

   Email:_____

8. In addition to the Northern Palm Beach County Improvement District permit, please also identify all permits required for this Project. Include application dates (if applied for), status, and permit contact information. If received, attach a copy.

   _____

   _____

   _____

9. Is this Project being taken in response to permit conditions issued or enforcement actions taken against the applicant? Yes_____ No_____

   If yes, explain:_____

   _____

10. Has the applicant received funding from Northern for this project or another project within the past five (5) years? Yes_____ No_____

    If yes, provide date, amount, and project description including location:_____

    _____

    _____

    _____

11. Is the Project expected to be complete and operational by July 31st, _____? Yes_____ No_____

12. The applicant must obtain and submit written approval from all appropriate agencies including the master property owners association / homeowner association / architectural review board as maybe applicable. Failure to obtain this approval will void the grant. Should the applicant fail to do so, the grant approval shall terminate. Any further consideration of the project will not occur until the project is resubmitted pursuant to the provisions of Erosion Control Program. Has applicant obtained written approval? Yes_____ No_____If so, please provide a copy.

13. The applicant acknowledges receipt of a copy of the Erosion Control Grant Program, and accepts the terms and conditions set forth there in and agrees that, if approved, reimbursement will be a percentage of the applicant's total construction cost, all of which shall be as determined pursuant to criteria and policy concepts outlined in the Erosion Control Grant Program.

    Applicant's Signature:_____

    Date:_____

Exhibit B: APPLICATION REVIEW PROCEDURE

Erosion Control Grant Program, December, 2008

1. All applications to be considered for the upcoming fiscal year shall be submitted to Northern Palm Beach County Improvement District offices no later than July 1st for consideration in the upcoming fiscal year beginning on October 1st.

2. All applications will be reviewed by NPBCID Staff to determine the completeness of the applications and accuracy of the cost estimate. Applications which are deemed incomplete will be returned to the applicant with a request for additional information. Although complete applications will be forwarded to the District Engineer for review, a completed application does not create any right or entitlement to an erosion control grant. All applications must be deemed complete by August 31st in order to be considered for the upcoming fiscal year.

3. Budgets for the respective units which are subject to the Erosion Control Grant Program will be established on a preliminary basis subject to Board of Supervisors approval.

4. The application will be reviewed by the District Engineer for compliance with the Erosion Control Grant Policy as well as any other applicable District standards including the proposed method of remedial works or repair. Upon review by the District Engineer, additional information may be requested from the applicant.

5. The District Engineer and NPBCID Staff will jointly evaluate the applications and may determine and use their own estimate of the cost of construction for the subject repair or remedial work and establish a recommended percentage of reimbursement based on the priority matrix in Section V; B & C of the grant program (see attached evaluation form) and available funds, if any, will be allocated in the applicable Unit pending Board approval.

6. The recommended reimbursement percentage, if any, will be submitted to the Engineering Review Committee for discussion and recommendation to the Board of Supervisors.

7. Following review by the ERC, applications will be submitted to the Board of Supervisors for consideration.

8. Following consideration by the Board, the District Engineer will submit their recommendation to Northern. NPBCID Engineering/Operations staff will subsequently send letters of acceptance or denial to the applicants. Letters of acceptance will include a copy of the standard agreement and permitting procedures.

9. Upon completion, certification and acceptance of the work, payment for the reimbursement will be submitted to the Board of Supervisors for disbursement.

Exhibit C: Agreement

GRANT AGREEMENT

This Grant Agreement (the "Agreement") shall be effective as of the ____ day of _____, 200_, and is being entered into by and between NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT, a Florida special district, 359 Hiatt Drive, Palm Beach Gardens, Florida 33418, hereinafter referred to as "Northern", and _____ whose mailing address is _____ hereinafter referred to as the "Recipient".

ARTICLE 1 - PROJECT DESCRIPTION

The Recipient shall fully and timely perform, to the satisfaction of the Northern, all work described in the Grant Application, a copy of which is attached hereto and incorporated herein as Exhibit "A" (said work hereinafter referred to as the "Project"). All work shall be done in strict accordance with Northern's erosion control standards and specifications. To ensure compliance, a mandatory preconstruction meeting with Northern's Director of Operations and Engineering must be held before commencement of the Project.

ARTICLE 2 - TERM

The term of the Agreement shall commence on the date of execution and shall continue until _____.

ARTICLE 3 - TIME OF THE ESSENCE

The Parties hereto agree that time is of the essence in the performance of their respective obligations under this Agreement.

ARTICLE 4 - COMPENSATION\FUNDING PAYMENTS AND REPORTING

A) As consideration for the Recipient's provision of the goods and services required by this Agreement for the Project, Northern shall pay the Recipient the lesser amount of the Project's certified actual costs of construction or $_____.

B) Northern shall make payment to the Recipient upon final completion and acceptance of the Project by Northern's District Engineer. The Recipient shall certify that the Project has been completed in accordance with attached Exhibit "A" to this Agreement, which certification should be accompanied by the Recipient's Contractor's certification of same. The Recipient's request for payment shall reference Northern's Application Number and be submitted to the Northern at the following address:

Northern Palm Beach County Improvement District
Erosion Control Funding Program
359 Hiatt Drive
Palm Beach Gardens, FL 33418
Attn: Kimberly Leser, P.E. District Engineer

C) Northern shall inspect all work and review final reports and the Recipient's certification before authorization of payment is made. Northern shall pay the full amount of the invoice within forty-five (45) days of its receipt and Northern's acceptance of the completed Project, provided the Recipient has performed the work according to the terms and conditions of this Agreement. When requesting payment, the Recipient shall submit an affidavit certifying the costs of construction of the Project, including contractor, engineer and material invoices and evidence of payment of same. Payment may be withheld until the Recipient has submitted in a proper and timely manner all required reports or met all Northern's then applicable administrative requirements until such time as these requirements are met.

ARTICLE 5 - PROJECT MANAGEMENT

The Parties shall direct all matters arising out of or in connection with the performance of this Agreement, other than invoices and notices, to the attention of their hereinafter identified Project Manager for attempted resolution or action. The Project Managers shall be responsible for overall coordination and oversight relating to the performance of this Agreement.

ARTICLE 6 – NOTICES

All notices, demands, or other communications to the Recipient under this Agreement shall be in writing and shall be deemed received if hand delivered or sent by certified mail, return receipt requested, to the address stated below:

_____
_____
_____
Attn: _____

All notices or demands to the Northern under this Agreement shall be in writing and either hand delivered or sent by certified mail, return receipt requested to:

Northern Palm Beach County Improvement District
Erosion Control Funding Program
359 Hiatt Drive
Palm Beach Gardens, FL 33418
Attn: Kimberly Leser, P.E. District
Engineer

The Recipient shall also provide a copy of all notices to Northern's Project Manager. All notices required by this Agreement shall be considered delivered upon receipt. Should either party change its address, written notice of such new address shall promptly be sent to the other party.

All correspondence to Northern under this Agreement shall reference Northern's Application Number.

ARTICLE 7 - TERMINATION

A) If a party fails to fulfill its obligation under this Agreement in a timely and proper manner, the other party shall have the right to terminate this Agreement by giving the other party written notice of the obligation which the party giving such notice deems to be in default. The party alleged to be in default shall have ten (10) calendar days from receipt of notice to correct or dispute the alleged deficiency. If the defaulting party fails to correct the deficiency within said time frame or fails to deliver written notice to the other party that it disputes that there is a deficiency, this Agreement shall terminate at the expiration of the ten (10) day time period. In the event the Recipient's funding becomes unavailable, that shall be good and sufficient cause for Northern to terminate the Agreement.

B) Northern may terminate this Agreement or reduce all or a portion of its financial obligations under this Agreement at any time for convenience upon thirty (30) calendar days advance written notice to the Recipient. Any such termination shall be effectuated by delivery to the Recipient of a Notice of Termination or Reduction, as the case may be, specifying the extent to which Northern's payment amount to the Recipient is reduced or the date upon which such termination becomes effective.

ARTICLE 8 - ATTORNEY'S FEES

If either party initiates legal action, including appeals, to enforce this Agreement, the prevailing party shall be entitled to recover its court costs and a reasonable attorney's fee.

ARTICLE 9 - RECORDS RETENTION

The Recipient shall maintain records and Northern shall have inspection and audit rights as follows:

A. <u>Maintenance of Records</u>. The Recipient shall maintain all financial and non-financial records and reports directly or indirectly related to the negotiation or performance of this Agreement, including supporting documentation for any Project related fees, expenses, research or reports. Such records shall be maintained and made available for inspection for a period of five (5) years from completing performance and receiving final payment under this Agreement.

B. Examination of Records. Northern or its designated agent shall have the right to examine in accordance with generally accepted governmental auditing standards all records directly or indirectly related to this Agreement. Such examination may be made only within five (5) years from the date of final payment under this Agreement and upon provision of reasonable notice, of the time and place.

C. Extended Availability of Records for Legal Disputes. In the event that Northern should become involved in a legal dispute arising from either party's performance under this Agreement, the Recipient shall extend the period of maintenance for all records to the Agreement until the final disposition of the legal dispute, and all such records shall be made available to Northern.

D. Public Records Act. The Recipient acknowledges that all documents generated in association with the Project are public records and the Recipient shall allow public access to all Project documents and materials in accordance with the provisions of Chapter 119, Florida Statutes. Should the Recipient assert any exemptions to the requirements of Chapter 119 and related Statutes, the burden of establishing such exemption, shall be upon the Recipient. In the event Northern becomes a defendant in a public records lawsuit due to the Recipient's failure to produce public records, the Recipient shall hold harmless and indemnify Northern for all costs, expenses and legal fees incurred for or on Northern's behalf as a result of such action.

ARTICLE 10 - STANDARDS OF COMPLIANCE

A) The Recipient warrants and represents that it has no obligation or indebtedness that would impair its ability to fulfill the terms and conditions of the Agreement, and shall abide by all legal, financial, and reporting requirements, as required here

B) The Recipient and its employees, consultants, agents, contractors, subcontractors or assigns, shall comply with all applicable federal, state, and local laws and regulations relating to the performance of this Agreement. Northern undertakes no duty to ensure such compliance, but will attempt to advise the Recipient, upon request, as to any such laws of which it has present knowledge.

C) The Recipient hereby assures that no person shall be excluded on the grounds of race, color, creed, national origin, handicap, age or sex from participation in, denied the benefits of, or is otherwise subjected to discrimination in any activity under this Agreement. The Recipient shall take all measures necessary to effectuate these assurances.

ARTICLE 11 - GOVERNING LAW/VENUE

A) The laws of the State of Florida shall govern all aspects of the Agreement. In the event it is necessary for either party to initiate legal action regarding this Agreement, venue shall be in the Fifteenth Judicial Circuit for claims under state law and in the Southern District of Florida for any claims which are justifiable in federal court.

B) The Recipient shall obtain, at its sole expense, all necessary licenses, authorizations and permits from the appropriate private party or federal, state, municipal or local agency, and other governmental approvals, prior to commencing performance of the Project.

ARTICLE 12 - INDEMNIFICATION AND INSURANCE

A) The following indemnification clause shall only be applicable to private entities:

> For value received, the receipt and sufficiency of which is hereby acknowledged, the Recipient shall defend, indemnify, save, and hold Northern, its agents, assigns, and employees, harmless from any and all claims or causes of action, including without limitation, all damages, losses, liabilities, expenses, costs, and attorney's fees related to such claims, resulting from any negligent or intentional act or omission, or the violation of any federal, state, or local law or regulation, by the Recipient, its consultants, contractors, subcontractors, agents, assigns, invitee, or employees in connection with this Agreement**.** The Recipient further acknowledges that it is solely responsible for ensuring its compliance and the compliance of its consultants, contractors, subcontractors, agents, assigns, invitee and employees with the terms of this Agreement. The provisions of this paragraph survive the termination or expiration of this Agreement.

B) The following shall only apply if the work is being performed on Northern property:

> The Recipient's contractors shall procure and maintain, throughout this term of the Agreement, insurance coverage reflecting, at a minimum: (1) the statutory worker's compensation limits in compliance with applicable state and federal laws and (2) general liability coverage and automobile liability, which shall be at minimum no less than $500,000 per occurrence.

ARTICLE 13 - RELATIONSHIP BETWEEN THE PARTIES

A) The Recipient is an independent contractor and not an employee, consultant or agent of Northern. Nothing in this Agreement shall be interpreted to establish any relationship other than that of an independent contractor between Northern and the Recipient, its employees, agents, contractors, subcontractors, engineers or assigns, during or after the performance of this Agreement.

B) The Recipient shall not assign, delegate, or otherwise transfer its rights and obligations as set forth in this Agreement without the prior written consent of Northern. Any attempted assignment without Northern's written consent will be a violation of this Agreement and the assignment shall be void and of no effect.

C) It is the intent and understanding of the Parties that this Agreement is solely for the benefit of the Recipient and Northern. No person or entity other than the Recipient or Northern shall have any rights or privileges under this Agreement in any capacity whatsoever, either as third-party beneficiary or otherwise.

ARTICLE 14 - FORCE MAJEURE

Notwithstanding any provisions of the Agreement to the contrary, the Parties shall not be held liable for any failure or delay in the performance of this Agreement that arises from fires, floods, strikes, embargoes, acts of the public enemy, unusually severe weather, outbreak of war, restraint of government, riots, civil commotion which are hereby deemed to be beyond the control of the Parties. Failure to perform shall be excused during the continuance of such circumstances but this Agreement shall otherwise remain in effect.

ARTICLE 15 - NON-WAIVER OF RIGHTS

The failure or grant of a waiver to insist on strict performance of any covenant, condition, or provision of this Agreement by a Party or its successors and assigns shall not be deemed a waiver of any of its rights or remedies, nor shall it relieve the other party from performing any subsequent obligation strictly in accordance with the terms of this Agreement. No waiver shall be effective unless in writing and signed by the Party granting the waiver. Such waiver shall be limited to provisions of this Agreement specifically referred to therein and shall not be deemed a waiver of any other provision hereof. No waiver shall constitute a continuing waiver unless the writing specifically states otherwise.

ARTICLE 16 - SEVERABILITY

A) Should any term or provision of this Agreement be held, to any extent, invalid or unenforceable, as against any person, entity or circumstance during the term hereof, by force of any statue, law, or ruling of any forum of competent jurisdiction, such invalidity shall not affect any other term or provision of the Agreement, to the extent that the Agreement shall remain operable, enforceable and in full force and effect to the extent permitted by law.

B) In the event any provisions of this Agreement shall conflict, or appear to conflict, the Agreement, including the approved Erosion Control Grant Application, which is attached hereto and made a part of this Agreement, shall be interpreted as a whole to resolve any such inconsistency.

ARTICLE 17 - AMENDMENTS

This Agreement may be amended only by a written document executed by both parties.

ARTICLE 18 - ENTIRE UNDERSTANDING

This Agreement and the attached Erosion Control Grant Application, plus applicable Northern permit state the entire understanding and agreement between the Parties and supersede any and all written or oral representations, statements, negotiations or agreements previously existing between the parties with respect to the subject matter of this Agreement. The Recipient recognizes that any representatives, statements or negotiations make by Northern Staff do not suffice to legally bind Northern in a contractual relationship unless they have been reduced to writing and signed by an authorized Northern representative.

ARTICLE 19 - ASSIGNMENTS

This Agreement shall inure to the benefit of and shall be binding upon the Parties, their respective assigns, and successors in interest.

ARTICLE 20 - EFFECTIVE DATE

This Agreement shall be effective upon the date it is executed by the last party to sign same.

EXECUTED by Northern this _____ day of _____, 20____.

ATTEST:

NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT

_____

By: _____

[NORTHERN SEAL]

APPROVED AS TO FORM AND LEGAL SUFFICIENCY

By: _____
Kenneth W. Edwards, Northern's General Counsel

EXECUTED by the Recipient this _____ day of _____, 201__.

WITNESSES:

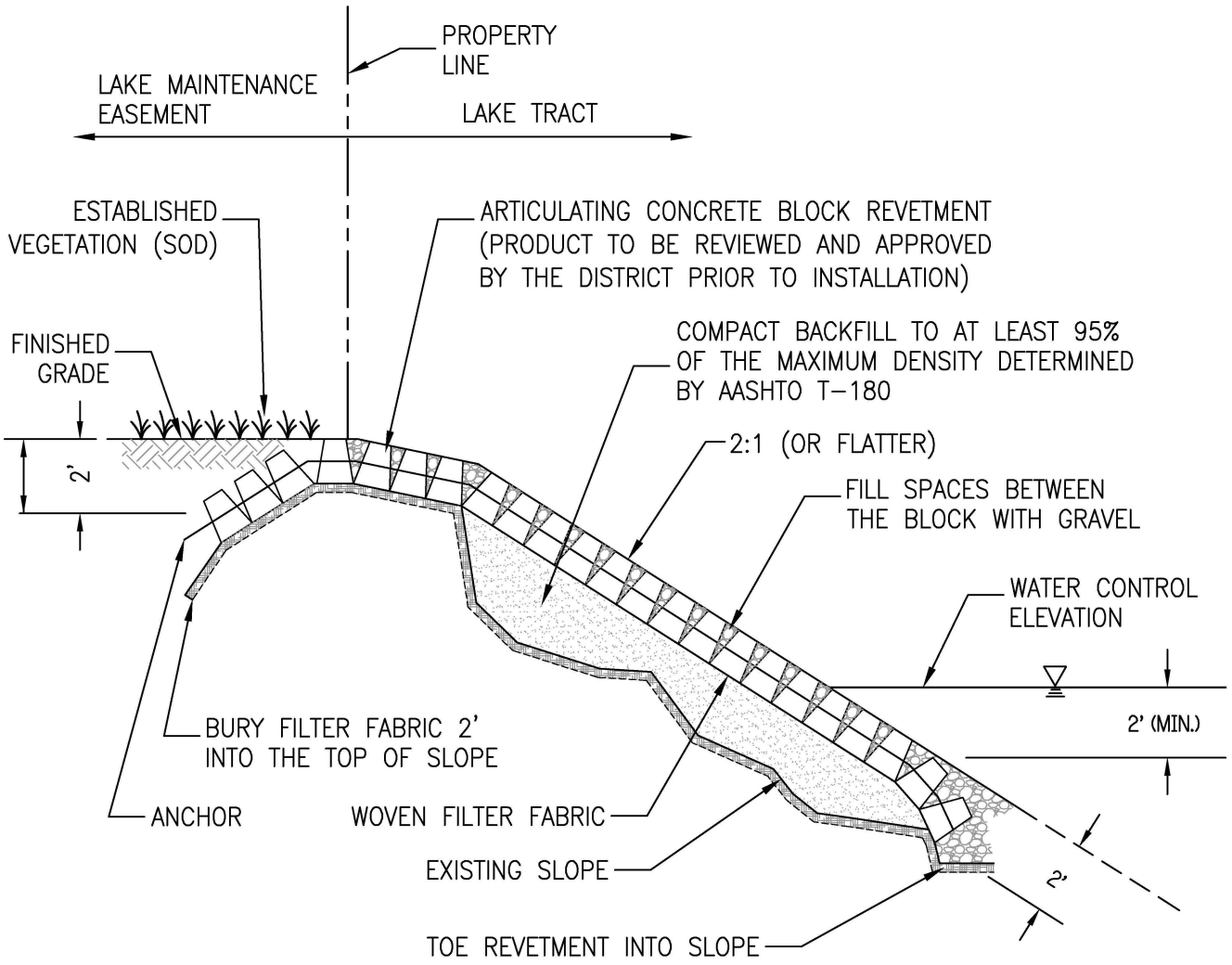
_____

BY: _____
Signature

_____

_____
Print Name

EXHIBIT D: CROSS-SECTIONS / DIAGRAMS OF APPROVED REPAIR METHODS

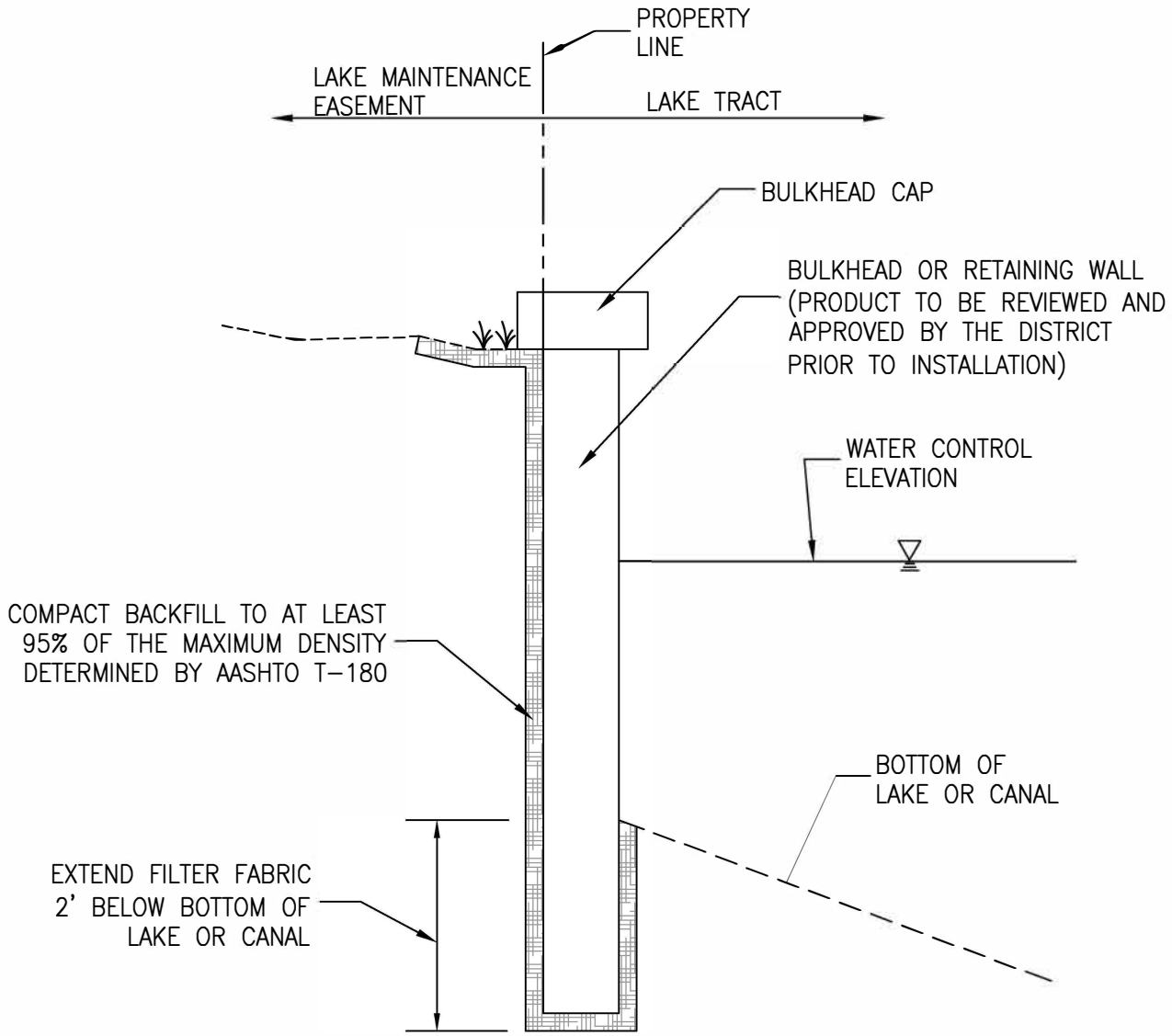


ARTICULATING CONCRETE BLOCK REVETMENT

NOTE:
1. THIS METHOD OF SLOPE STABILIZATION IN USED IN AREAS WITH STEEPER THAN 4H:1V SUCH AS CANAL BANKS AND AREAS WITH HIGH FLOW VELOCITIES.

REV:		NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	JAF		P.A.NO. WF0590
APPR:	RWL		DR. NO. EC-D

EXHIBIT E: CROSS-SECTIONS / DIAGRAMS OF APPROVED REPAIR METHODS

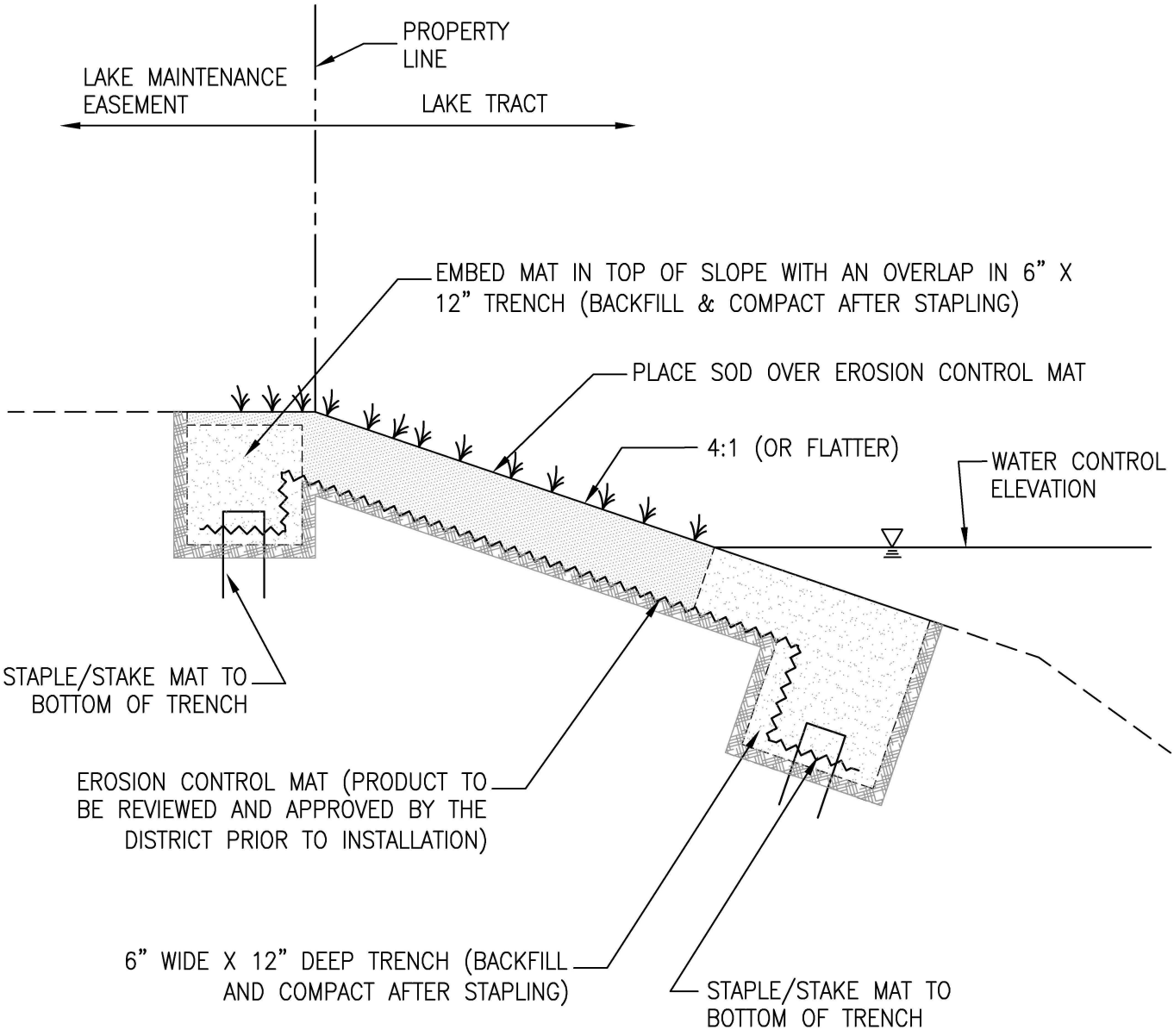


BULKHEAD OR RETAINING WALL

NOTE:
1. THE WALL IS TO BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE THE EXPECTED LOADS BEHIND THE WALL FROM MAINTENANCE VEHICLES. THIS METHOD WILL BE REVIEWED BY THE DISTRICT ON A CASE-BY-CASE BASIS AND WILL REQUIRE ENGINEERING PLANS AS WELL AS A CERTIFICATION FROM A FLORIDA REGISTERED PROFESSIONAL ENGINEER UPON PROJECT COMPLETION.

REV:		NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	JAF		P.A.NO. WF0590
APPR:	RWL		DR. NO. EC-E

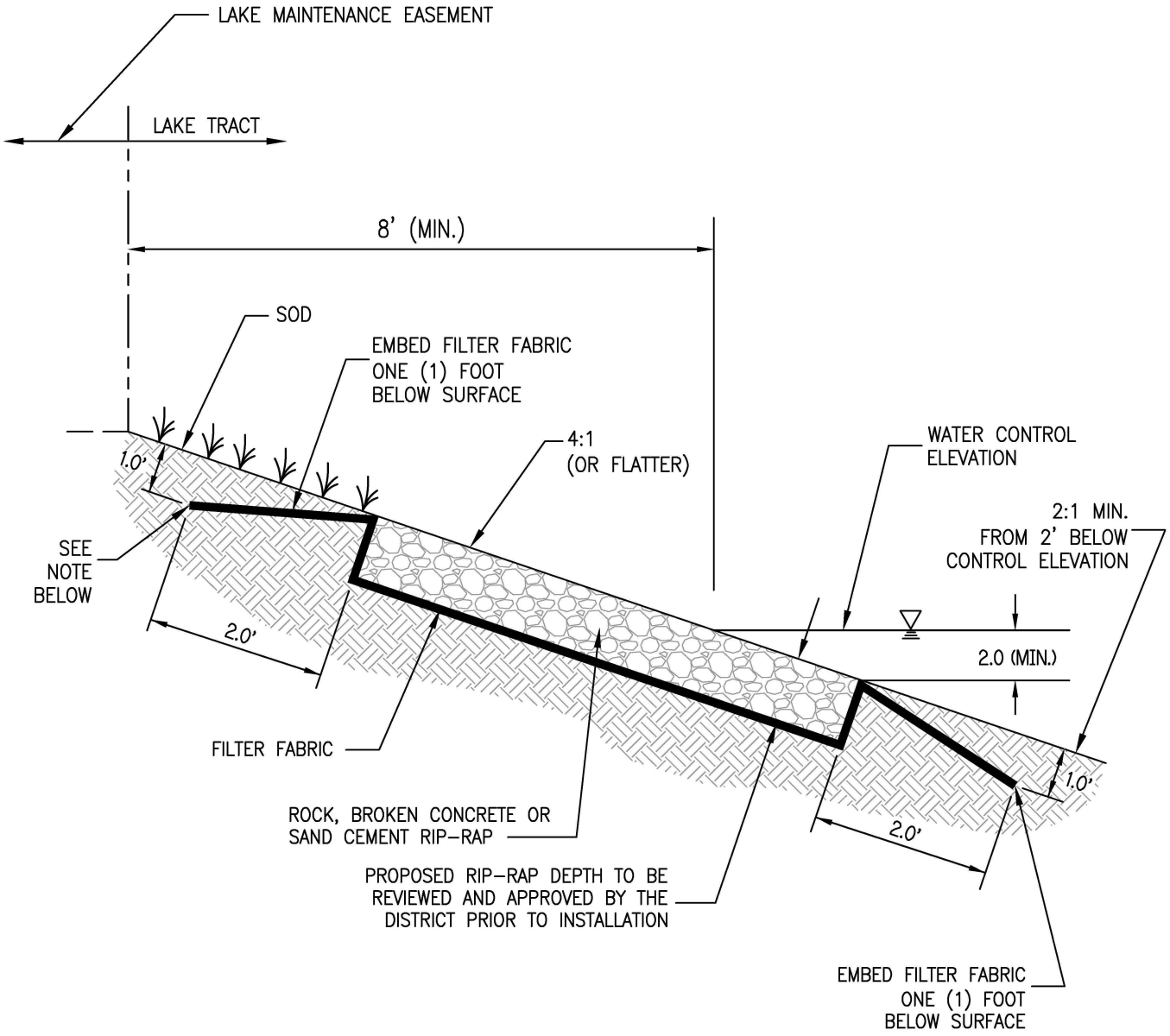
EXHIBIT F: CROSS-SECTIONS / DIAGRAMS OF APPROVED REPAIR METHODS



GEO-FABRIC / GEO TEXTILE

REV:		NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	JAF		P.A.NO. WF0590
APPR:	RWL		DR. NO. EC-F

EXHIBIT G: CROSS-SECTIONS / DIAGRAMS OF APPROVED REPAIR METHODS

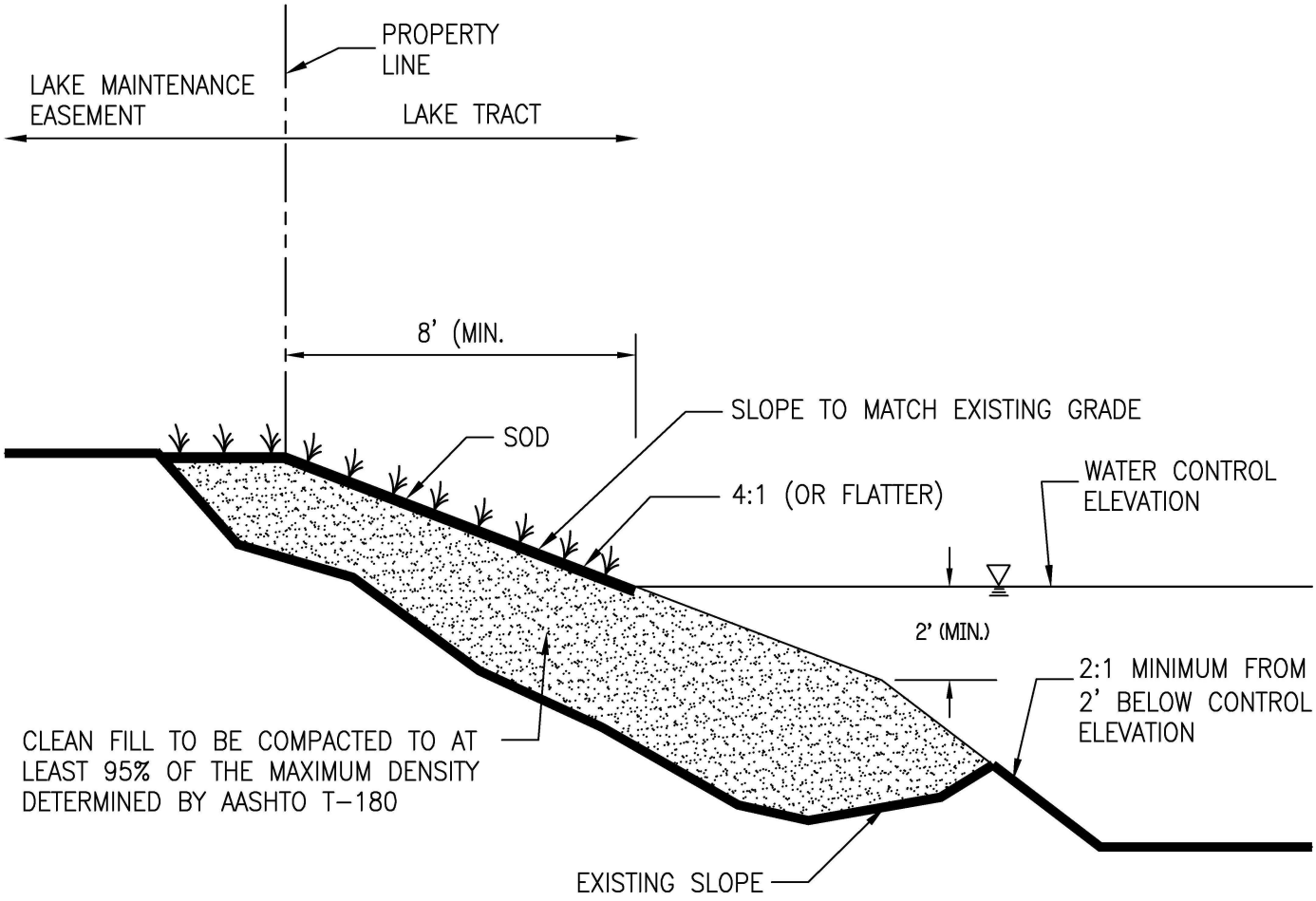


RIP-RAP DETAIL

NOTE:
1. RIP-RAP MATERIALS AND FILTER FABRIC SHALL BE PER FDOT DESIGN STANDARDS AND SPECIFICATIONS, LATEST EDITION.
2. EXPAND FILTER FABRIC 2 FEET BEYOND RIP-RAP ON ALL SIDES

REV:		NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	JAF		P.A.NO. WF0590
APPR:	RWL		DR. NO. EC-G

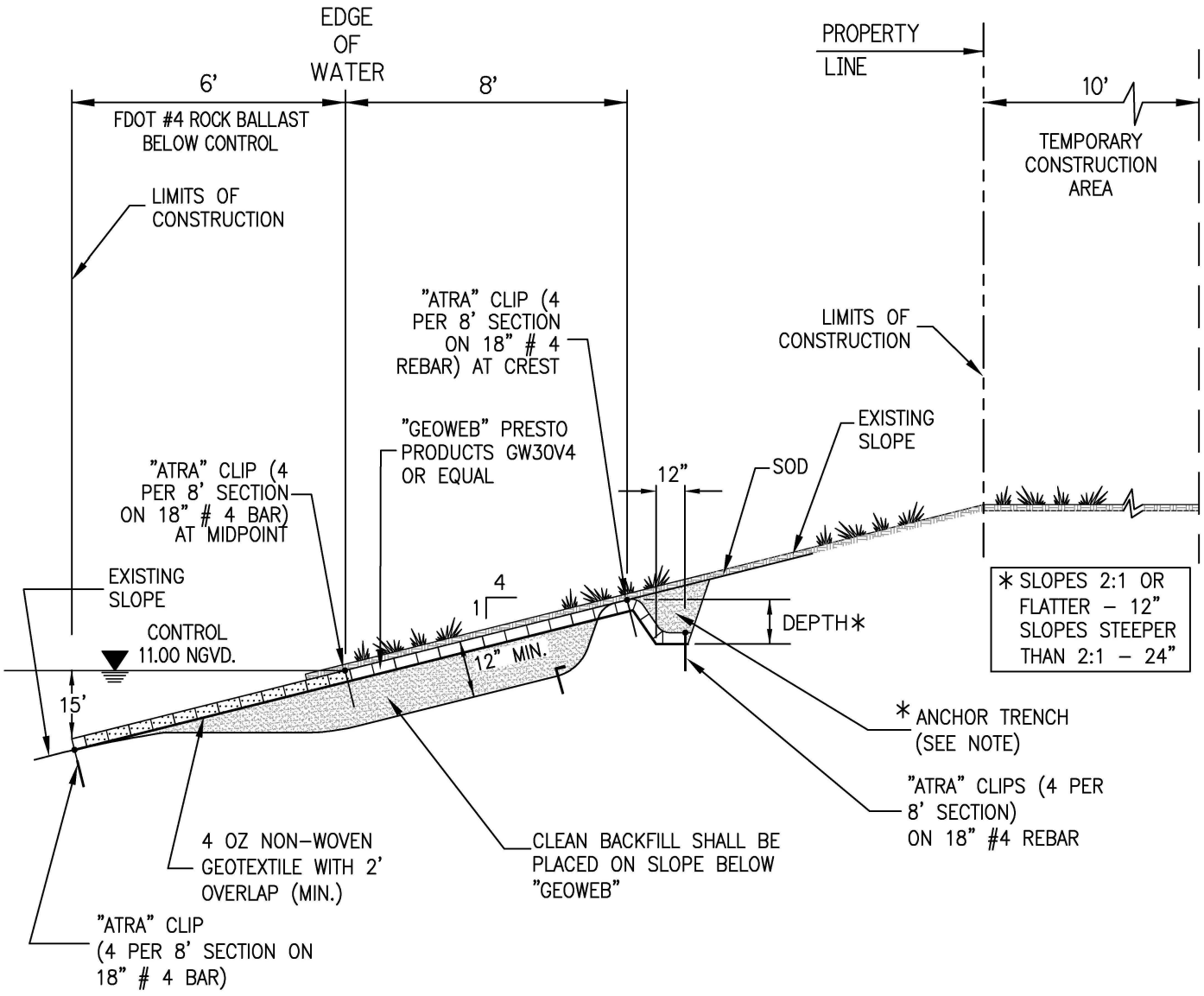
EXHIBIT H: CROSS-SECTIONS / DIAGRAMS OF APPROVED REPAIR METHODS



SLOPE RECONSTRUCTION

REV:		NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	JAF		P.A.NO. WF0590
APPR:	RWL		DR. NO. EC-H

EXHIBIT I: CROSS-SECTIONS / DIAGRAMS OF APPROVED REPAIR METHODS



NOTES:

1. CLEAN BACKFILL BELOW "GEOWEB" TO BE COMPACTED IN PLACE PRIOR TO GEOTEXTILE PLACEMENT.
2. 4 OZ. NON-WOVEN GEOTEXTILE WITH MIN. 2 FOOT OVERLAP TO BE INSTALLED UNDER "GEOWEB"
3. "GEOWEB" CELLS ABOVE CONTROL TO BE BACKFILLED WITH 4 1/2" CLEAN SOIL AND TAMPED IN PLACE PRIOR TO SOD PLACEMENT.

GEOWEB SLOPE STABILIZATION

NOT TO SCALE

REV:		NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	JAF		P.A.NO. WF0590
APPR:	RWL		DR. NO. EC-I

SECTION 9 – GENERAL DESIGN CRITERIA

This section is a general guideline and is subject to revisions depending on specific project requirements.

A. Roadway

1. Type C stabilization shall not be utilized for any Roadway.
2. Thickened base in lieu of Type B stabilization is preferred due to constructability.
3. The final lift of asphalt shall be placed at a minimum of 3/4 inch thickness.
4. Roadways shall be designed in a 2 (two) lift system.

B. Utilities

1. All pressure pipes shall be designed using restrained joints (i.e. meg-a-lug) with no use of thrustblock.
2. Conflicts and crossings shall be clearly identified on the design drawings.
3. Design criteria shall meet all applicable utility standards.

C. Lakes, Canals and Piping

1. Canal slopes must be no steeper than 3 to 1 unless supported by geotechnical recommendations.
2. Minimum overhead clearance shall be three (3) feet above 25 year/3 day storm elevation for bridge construction (lowest structural member) and aerial crossings.
3. Bottom of outfall piping shall be a minimum of one (1) foot above the lake bottom and a minimum of two (2) feet below control elevation. The pipe depth shall be maximized to the greatest extent possible. Where this criterion cannot be met a headwall will be required (see Detail).
4. All pipe collars are to be prefabricated. Formed in-place collars are not acceptable.
5. All surface water management systems shall be designed such that head loss of lake interconnect pipe is a maximum of 0.2 feet.
6. Storm routing calculations shall be performed with adICPR or other South Florida Water Management District (SFWMD) approved software.
7. Minimum storm water pipe size to be 24”.

D. Control Structures

1. Chain link fence installation for control structures and RTU to be six (6) feet high per FDOT index 452, Type 2 fence enclosure and a three (3) feet wide gate with lock. All fencing materials shall be black PVC coated with a

minimum chain link fabric No. 9 gauge (see typical Detail of site layout for a control structure).

2. A six (6) inch reinforced concrete slab is to be constructed within the fenced in area around the control structure.
3. Control structures should have a width of not more than twice the length of the box and the distance from the weir to the edge of the box shall be greater than the diameter of the outlet pipe.
4. Control structures shall be concrete box with concrete or aluminum weir plates.
5. Control structures shall be designed with a operable control gate where permitted, or with a "knock out" to accommodate installation of a future gate. Engineer shall coordinate with District Engineer on the design of the gate.
6. Major control structures may require telemetry system as determined by Northern.

E. Erosion Control/Turbidity Control

1. Filter fabric form grouted matting for slope stabilization shall not be used.
2. Designs shall incorporate appropriate temporary and permanent erosion control designs and material to prevent erosion during and after construction and must meet NPDES permit requirements.

SECTION 10 – STANDARD DRAWING DETAILS

NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT

(PLAN TITLE)

FOR

(PROJECT TITLE)

(UNIT OF DEVELOPMENT NO. ____)

PALM BEACH COUNTY, FLORIDA

DATE: _____

INDEX OF SHEETS

SHEET No.	DESCRIPTION
-	-

BOARD OF SUPERVISORS:

ADRIAN M. SALEE, PRESIDENT

MATTHEW J. BOYKIN, VICE PRESIDENT

L. MARK COHN

GARO ARTINIAN

JOHN COHEN

Sunshine State One Call 811 of Florida, Inc.

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN ALTERED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

ENGINEER'S CERTIFICATION

THE UNDERSIGNED DOES HEREBY CERTIFY (THE TERM CERTIFY IS USED AS DEFINED IN CHAPTER 61G15-18.011(4) FLORIDA ADMINISTRATIVE CODE) IN FAVOR OF NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT THAT, IN MY PROFESSIONAL OPINION, THESE PLANS COMPLY WITH THE REQUIREMENTS OF NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT AND OTHER APPLICABLE GOVERNMENTAL ENTITY(S) REQUIREMENTS. NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT IS HEREBY AUTHORIZED AND ENTITLED TO RELY UPON SAME FOR CONSTRUCTION OF PUBLIC IMPROVEMENTS.

DATE: PROFESSIONAL ENGINEER NO. #

(NAME)

LOCATION MAP

N.T.S.

Consultant Logo

Prepared for:
NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT
359 HAIT DRIVE, PALM BEACH GARDENS, FLORIDA 33418

No.	Revision:	By:	Date

Scale: -
Approved: -
Drawn: -
Checked: -
Date: -

Project: (PLAN TITLE) FOR (PROJECT TITLE)

Sheet: -
Of: -
Project No. -

Consultant Logo

Project No.
-

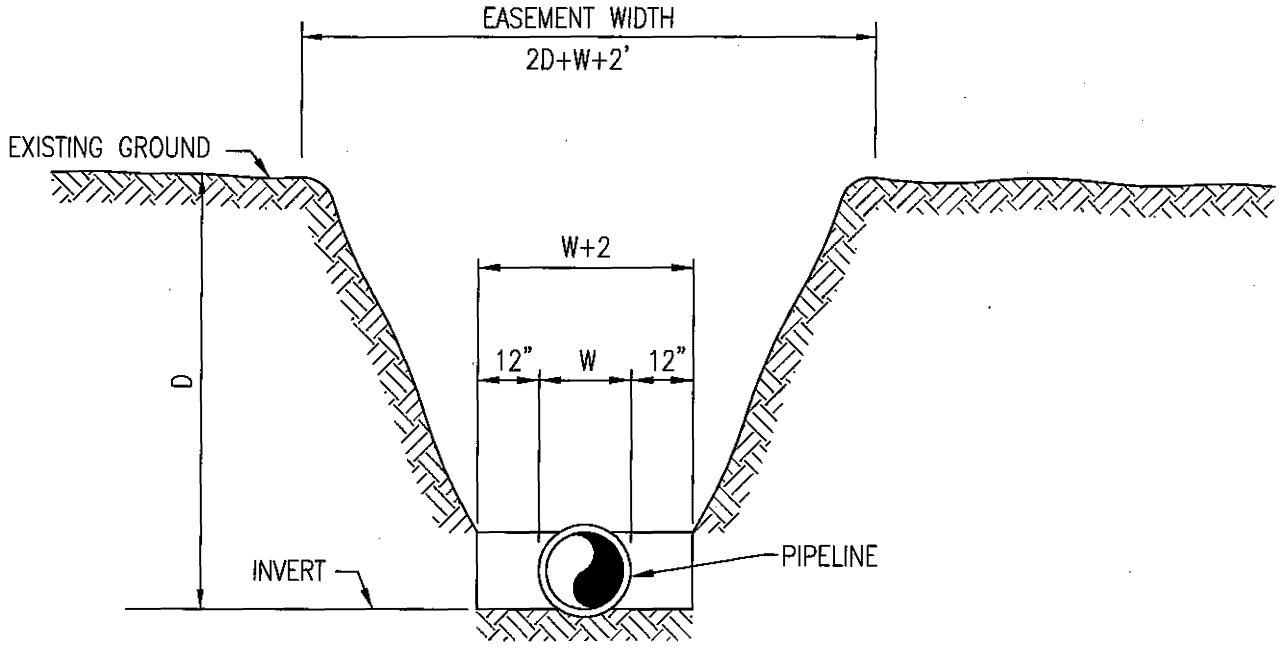
Sheet: -
Of: -

Project:
(PLAN TITLE)
FOR
(PROJECT TITLE)

Scale: -
Approved: -
Drawn: -
Checked: -
Date: -

No.	Revision:	By:	Date

Prepared for:
NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT
359 HIATT DRIVE, PALM BEACH GARDENS, FLORIDA 33418

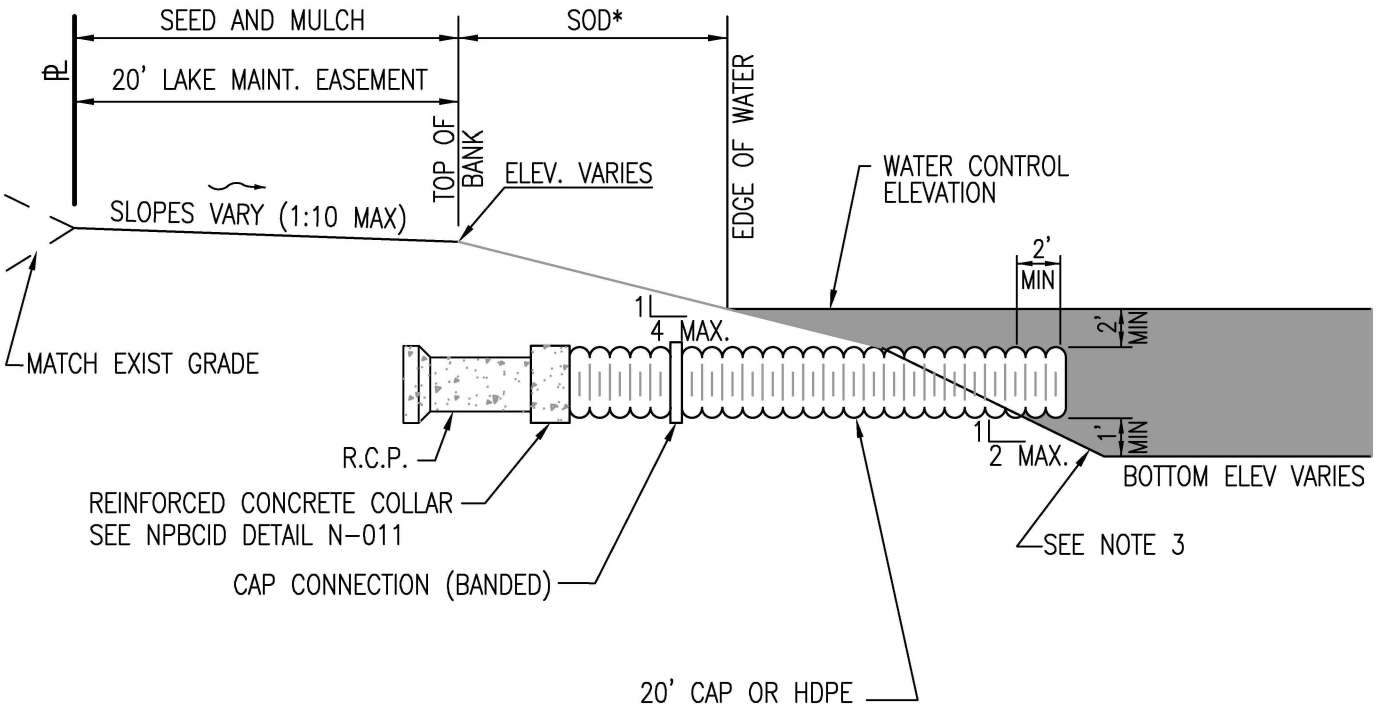


STANDARD EASEMENT DETAIL

REV:	
FIELD:	N/A
DRAWN:	KAL
APPR:	RWL

NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT

SCALE:	N.T.S.
DATE:	MAR. 2013
P.A.NO.	WF0590
DR. NO.	N-002



1. SOD 100 FEET ON BOTH SIDES OF OUTFALL. SOD TO BE PINNED ON SLOPES.

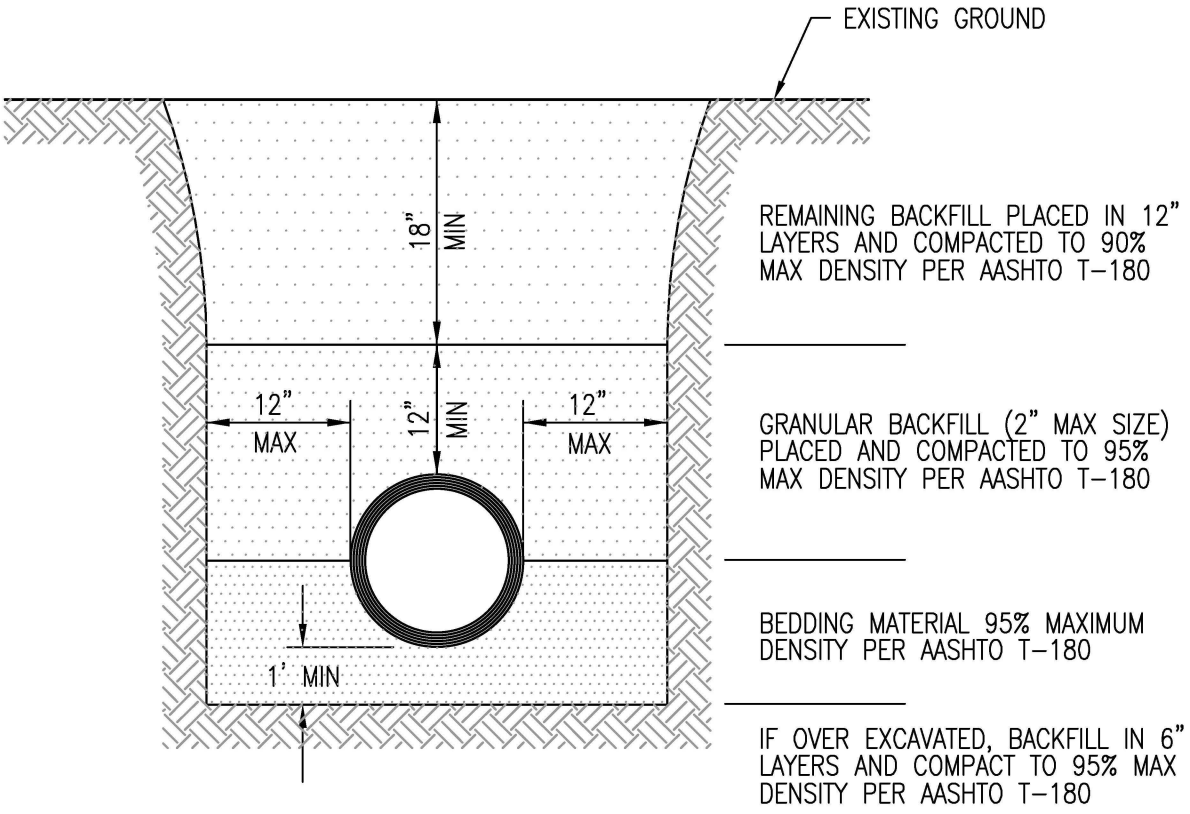
2. SOIL CONDITIONS SHOULD BE CONSIDERED WHEN SELECTING PIPE FOR OUTFALL

3. 4:1 to 2' BELOW WATER SURFACE OR SLOPE PER GEOTECH RECOMMENDATIONS

4. WHEN HDPE DOUBLE WALL CORRUGATED PIPE IS USED, MEASURES TO AVOID FLOATATION SHALL BE MADE

TYPICAL LAKE BANK AND DRAINAGE OUTFALL

REV: JULY 2013	**NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT**	SCALE: N.T.S.
FIELD: N/A		DATE: MAR. 2013
DRAWN: KAL		P.A.NO. WF0590
APPR: RWL		DR. NO. N-003



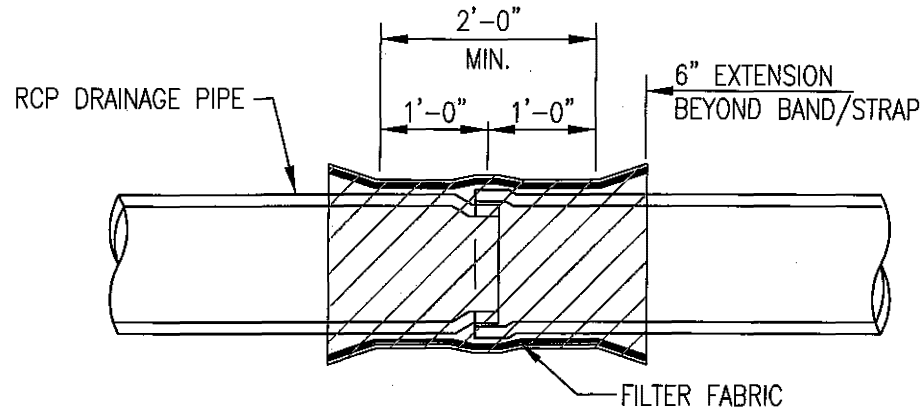
NOTE:

1. BEDDING SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK 3/8"-7/8" SIZING. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCK SHALL BE REMOVED.
2. BACKFILL REQUIREMENTS SHOULD BE PER THIS DETAIL OR AS REQUIRED BY UTILITY PROVIDER, WHICHEVER IS MORE STRINGENT.

PIPE BACKFILL REQUIREMENTS

OUTSIDE ROADWAY

REV: AUG. 2013	NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT	SCALE: N.T.S.
FIELD: N/A		DATE: MAR. 2013
DRAWN: KAL		P.A.NO. WF0590
APPR: RWL		DR. NO. N-004

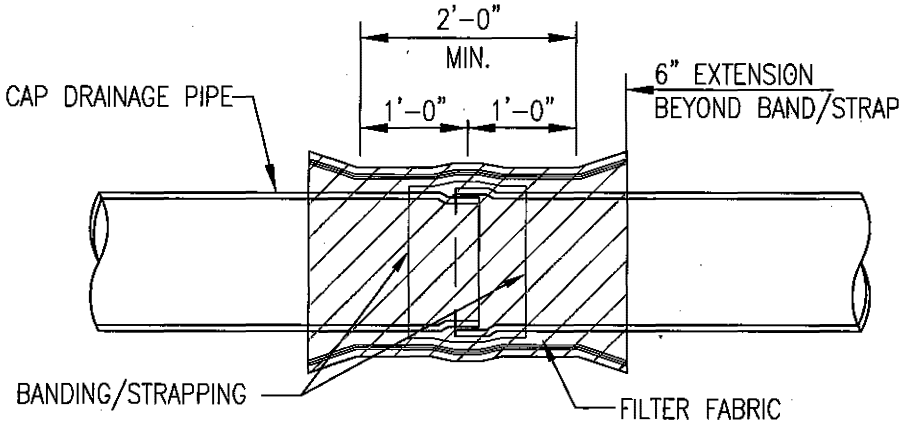


NOTE:
MAXIMUM ALLOWABLE GAP:
5/8" – 12"–18" PIPE
7/8" – 24"–66" PIPE
1" – PIPE DIAMETERS GREATER THAN 72"

NOTE:
- FILTER FABRIC SHALL BE TYPE D–3 AND SHALL MEET THE REQUIREMENTS OF SECTION 985 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND FDOT INDEX 199, LATEST EDITIONS.
- FILTER FABRIC SHALL BE OVERLAPPED 2'–0" MINIMUM AT ALL DRAINAGE PIPE JOINTS.
- ALL DRAINAGE PIPES ARE TO BE WRAPPED AT EACH JOINT.

FILTER FABRIC JOINT WRAP–RCP

NOT TO SCALE



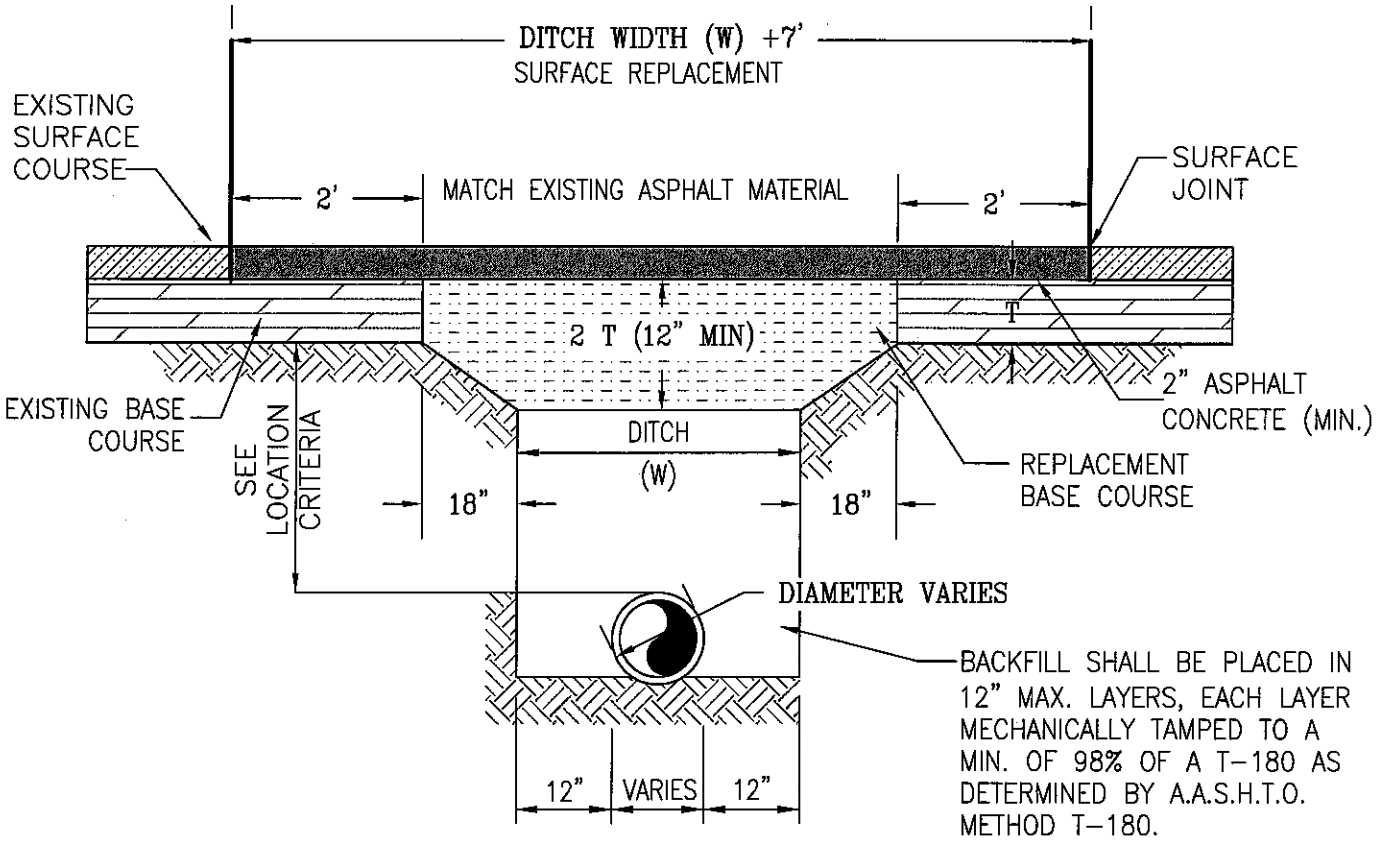
NOTE:
MAXIMUM ALLOWABLE GAP:
5/8" – 12"–18" PIPE
7/8" – 24"–66" PIPE
1" – GREATER THAN 72"

NOTE:
- FILTER FABRIC SHALL BE TYPE D–3 AND SHALL MEET THE REQUIREMENTS OF SECTION 985 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND FDOT INDEX 199, LATEST EDITIONS.
- FILTER FABRIC SHALL BE OVERLAPPED 2'–0" MINIMUM AT ALL DRAINAGE PIPE JOINTS.
- ALL DRAINAGE PIPES ARE TO BE WRAPPED AT EACH JOINT.
- LOCKING BAND FOR ALUMINUM PIPE SHALL BE FABRICATED FROM THE SAME ALLOY AS CULVERT SHEETING.

FILTER FABRIC JOINT WRAP–CAP

NOT TO SCALE

REV:		**NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT**	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	KAL		P.A.NO. WF0590
APPR:	RWL		DR. NO. N–005



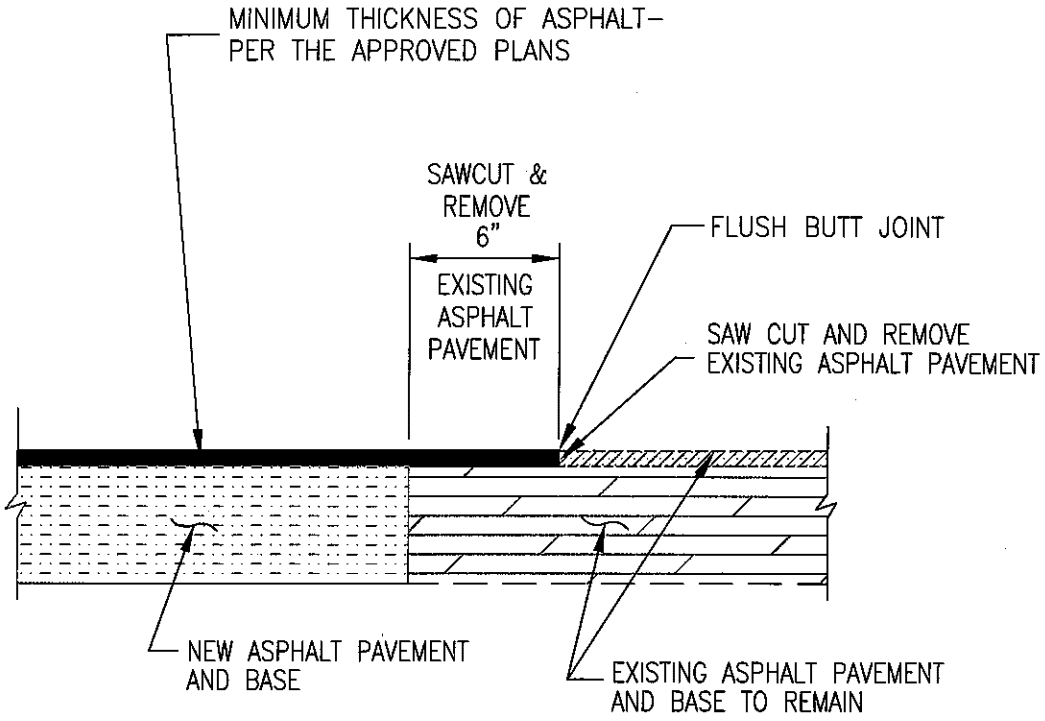
NOTES:

1. REPLACED BASE MATERIAL OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE.
2. BASE MATERIAL SHALL BE PLACED IN LIFTS (4" MAX) AND EACH LIFT THOROUGHLY ROLLED OR TAMPED. COMPACTION SHALL BE 98%(MIN.) DENSITY AS DETERMINED BY A.A.S.H.T.O. T-180.
3. ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED.
4. THE BASE MATERIAL SHALL BE APPROVED BY THE DISTRICT ENGINEER.
5. SURFACE MATERIAL WILL BE CONSISTENT WITH EXISTING SURFACE.
6. TRAFFIC SAFETY AND CONTROL SHALL BE IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND FDOT STANDARD SPECIFICATIONS. SERIES 600 INDICES.
7. ALL ITEMS FOR PAVEMENT REPLACEMENT TRENCHING SHALL BE INCLUDED IN UNIT COST OF PIPE.
8. All DISTURBED STRIPING TO MATCH EXISTING STRIPING IN MATERIAL TYPE. STRIPING & SIGNAGE TO CONFORM TO LATEST PBC TYPICALS FOR PAVEMENT MARKINGS, SIGNING & GEOMETRICS.
9. PAVEMENT DETAIL SHOULD CONFORM TO THE REGULATORY AGENCY REQUIREMENTS IF THEIR STANDARDS ARE MORE STRINGENT.

PAVEMENT REPLACEMENT DETAIL

NOT TO SCALE

REV:		NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	KAL		P.A.NO. WF0590
APPR:	RWL		DR. NO. N-006



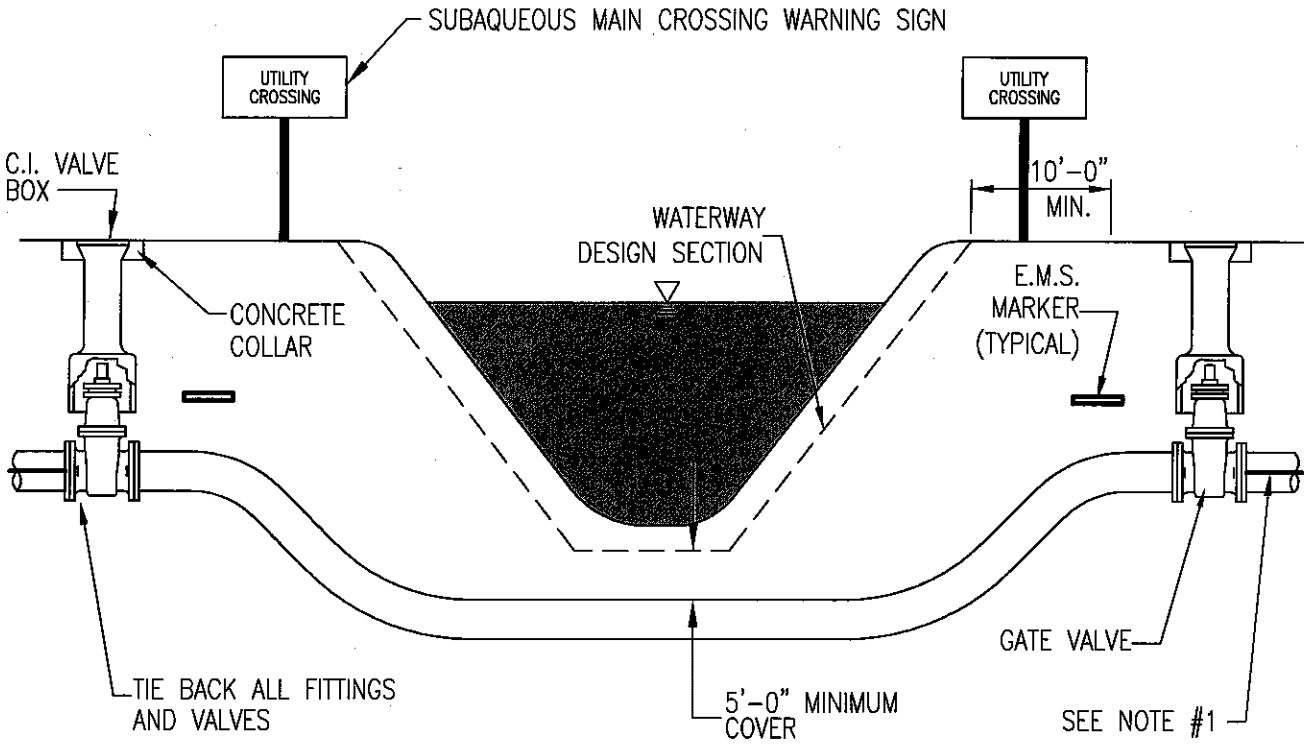
NOTE:

1. COST OF SAW CUTTING AND ASPHALT REMOVAL TO BE INCLUDED IN THE UNIT PRICE FOR THE ASPHALT.

2. CONTRACTOR TO REMOVE ALL LOOSE ASPHALT AND BROOM CLEAN ALL ASPHALT SURFACES PRIOR TO OVERLAY.

ASPHALT PAVEMENT JOINT

REV:		**NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT**	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	KAL		P.A.NO. WF0590
APPR:	RWL		DR. NO. N-007



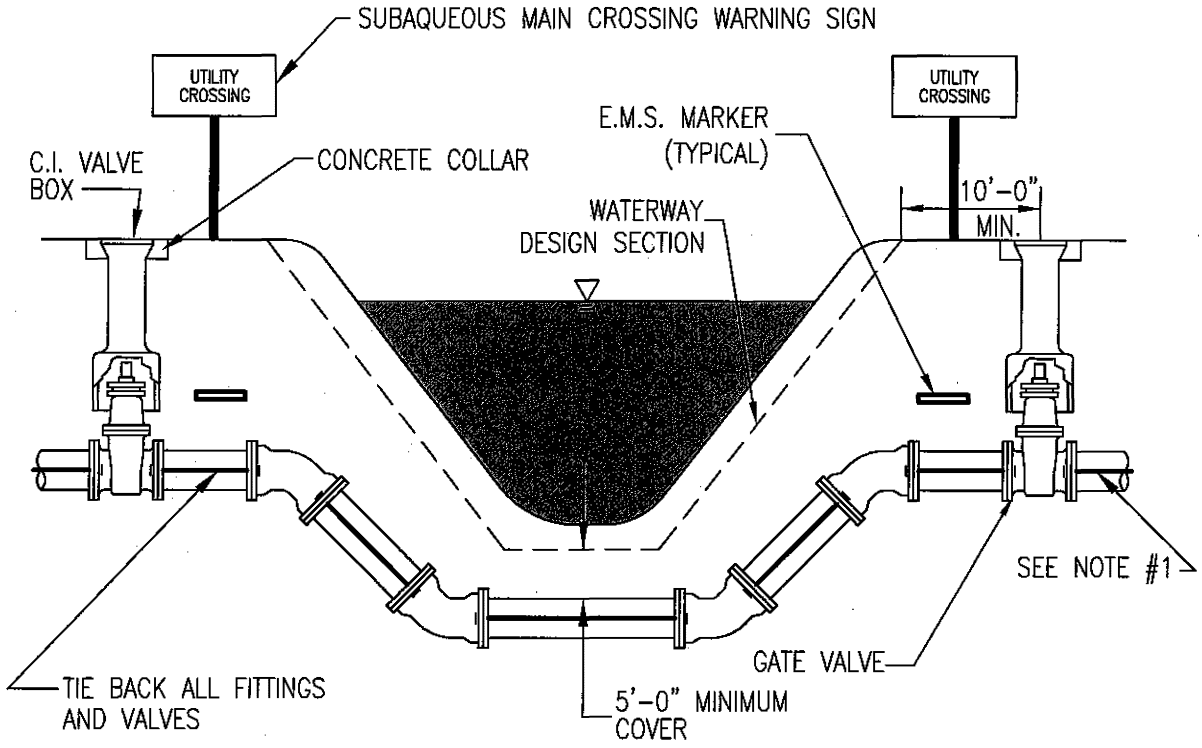
NOTES:

1. VALVES TO BE TIED BACK TO THE NEAREST FITTING ON EACH SIDE PER UTILITY STANDARDS. ALL TIE RODS AND BOLTS SHALL BE COATED WITH KOPPERS 300-M OR APPROVED EQUAL.
2. VALVE EXTENSIONS AND BOXES SHOULD NOT BE LOCATED IN THE MAINTENANCE EASEMENT WITHOUT NPBCID APPROVAL.
3. MEGALUG RESTRAINTS REQUIRED. (TYPICAL)

SUBAQUEOUS CROSSING – DIRECTIONAL BORE

NOT TO SCALE

REV:		NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	KAL		P.A.NO. WF0590
APPR:	RWL		DR. NO. N-008A



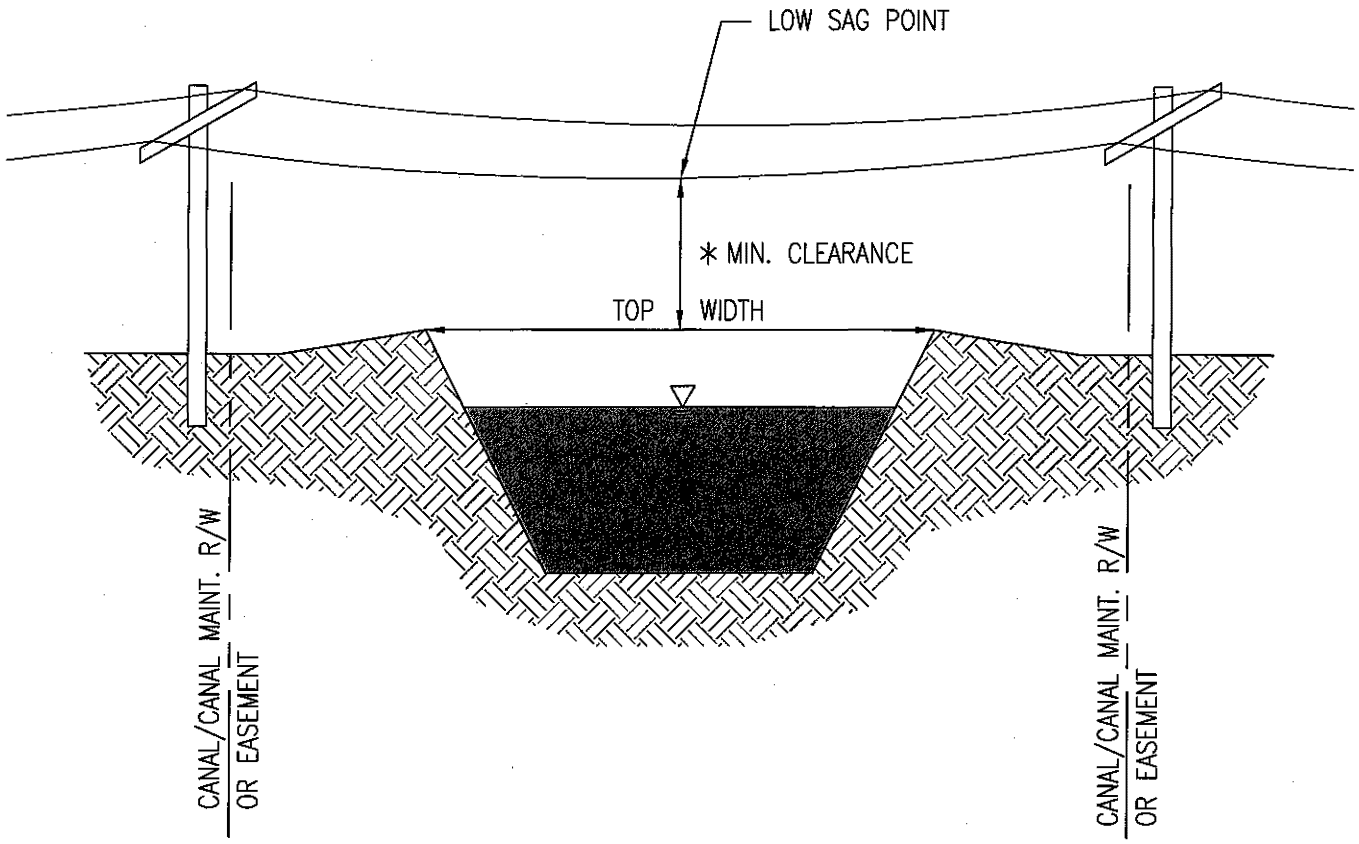
NOTES:

1. DIRECT BURY ALLOWED ONLY IF DIRECTIONAL BORE METHOD IS NOT FEASIBLE.
2. VALVES TO BE TIED BACK TO THE NEAREST FITTING ON EACH SIDE PER UTILITY STANDARDS. ALL TIE RODS AND BOLTS SHALL BE COATED WITH KOPPERS 300-M OR APPROVED EQUAL.
3. VALVE EXTENSIONS AND BOXES SHOULD NOT BE LOCATED IN THE MAINTENANCE EASEMENT WITHOUT NPBCID APPROVAL.
4. MEGALUG RESTRAINTS REQUIRED. (TYPICAL)
5. FLOW THROUGH CANAL SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
6. FLOW DIVERSION WILL NOT BE PERMITTED DURING WET SEASON.

SUBAQUEOUS CROSSING – DIRECT BURY

NOT TO SCALE

REV:		**NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT**	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	KAL		P.A.NO. WF0590
APPR:	RWL		DR. NO. N-008B



DESIGN TOP WIDTH OF CANAL (FT)	* MINIMUM CLEARANCE ABOVE CANAL BANK (FT)
LESS THEN 30'	35'
30'–45'	40'
GREATER THAN 45'	45'

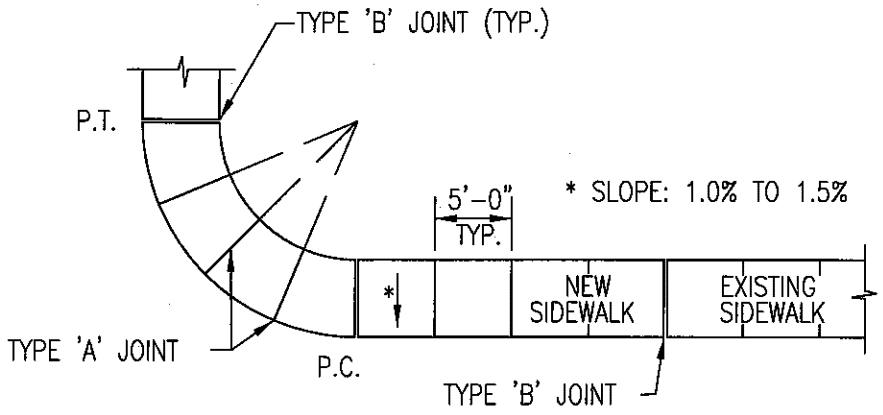
NOTES:

1. POLES, LINES & SUPPORTS MUST BE LOCATED OUTSIDE CANAL R/W, CANAL MAINT R/W & EASEMENTS.
2. THE ABOVE MINIMUM VERTICAL CLEARANCES ARE BASED ON CLEARANCE NORMALLY NEEDED FOR CANAL MAINTENANCE EQUIPMENT, FEDERAL, STATE OR LOCAL CODES, SUCH AS THE NATIONAL ELECTRIC SAFETY CODE MAY REQUIRE HIGHER CLEARANCES AND SHOULD BE ADHERED TO.

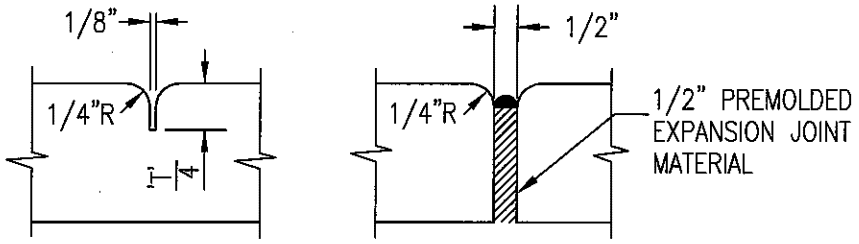
TYPICAL OVERHEAD POWERLINE CANAL CROSSING

REV:		NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	KAL		P.A.NO. WF0590
APPR:	RWL		DR. NO. N-009

TABLE OF SIDEWALK THICKNESS – 'T'	
LOCATION	'T'
ALL AREAS	6"



PLAN



TYPE 'A' JOINT

TYPE 'B' JOINT

NOTE:

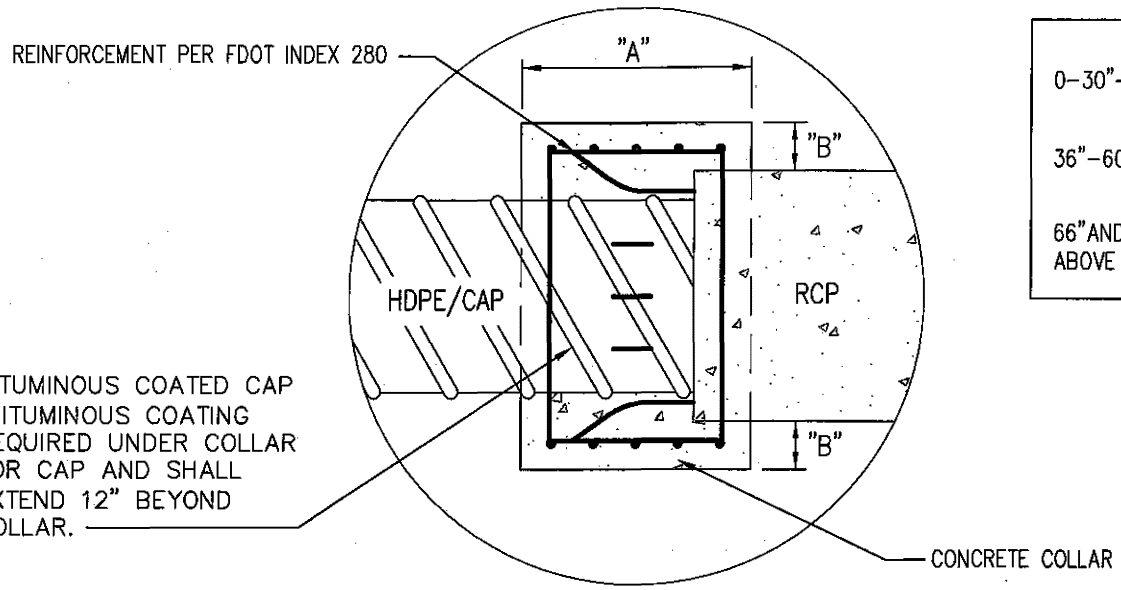
1. MINIMUM COMPREHENSIVE STRENGTH OF CONCRETE = 3000 PSI
2. WIRE MESH NOT REQUIRED.
3. COMPACT SUBGRADE TO 95% OF A.A.S.H.T.O. T-99.
4. CONSTRUCTION AND MATERIALS TO MEET SECTION 522 OF FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.

CONCRETE SIDEWALK

REV:	
FIELD:	N/A
DRAWN:	KAL
APPR:	RWL

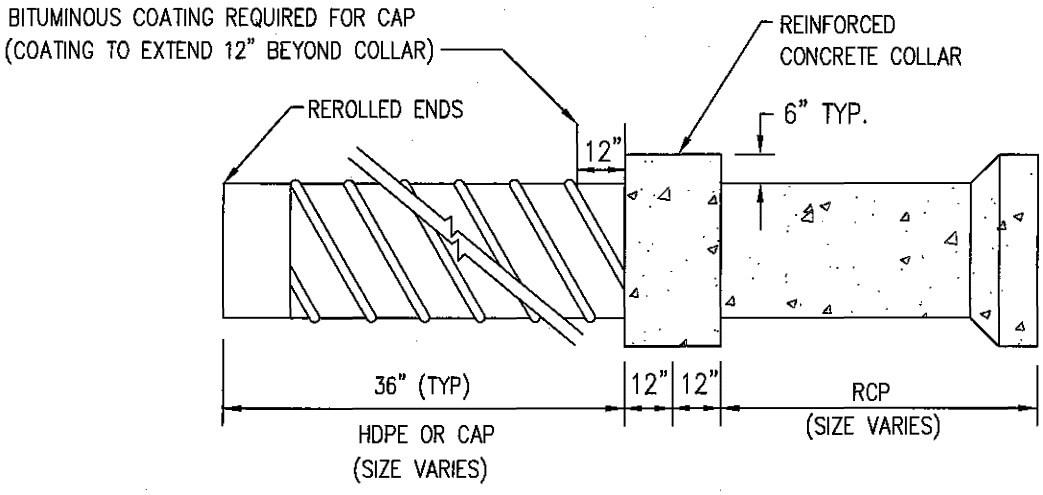
NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT

SCALE:	N.T.S.
DATE:	MAR. 2013
P.A.NO.	WF0590
DR. NO.	N-010



0–30"–	A=24" B=6"
36"–60"–	A=36" B=9"
66"AND ABOVE	A=36" B=12"

POURED IN PLACE



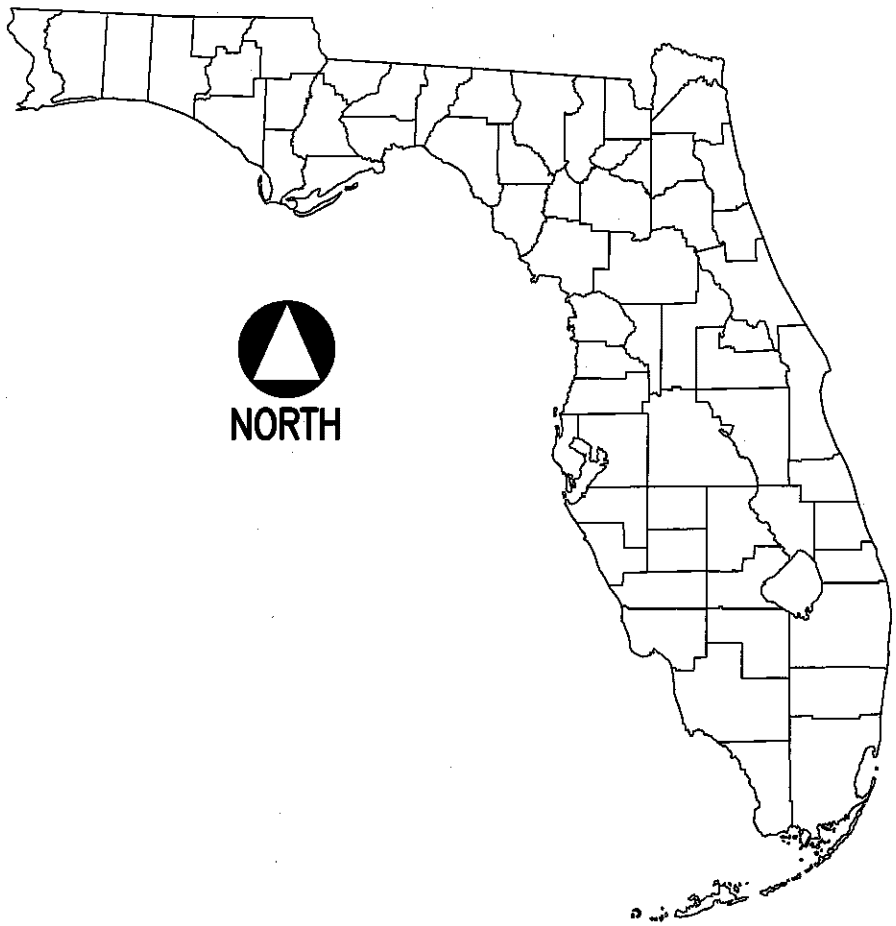
PRECAST

NOTE:
1. PRECAST CONCRETE COLLAR PER FDOT INDEX 280, LATEST EDITION.

CONCRETE ADAPTER COLLAR

NOTE:
1. IF CONNECTING HDPE TO RCP MINIMUM COVER MUST MEET REQUIREMENTS OF FDOT INDEX 205, LATEST EDITION.
2. DETAIL SHALL NOT BE USED TO CONNECT METAL PIPES OF DISSIMILAR MATERIALS

REV:		NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	KAL		P.A.NO. WF0590
APPR:	RWL		DR. NO. N-011



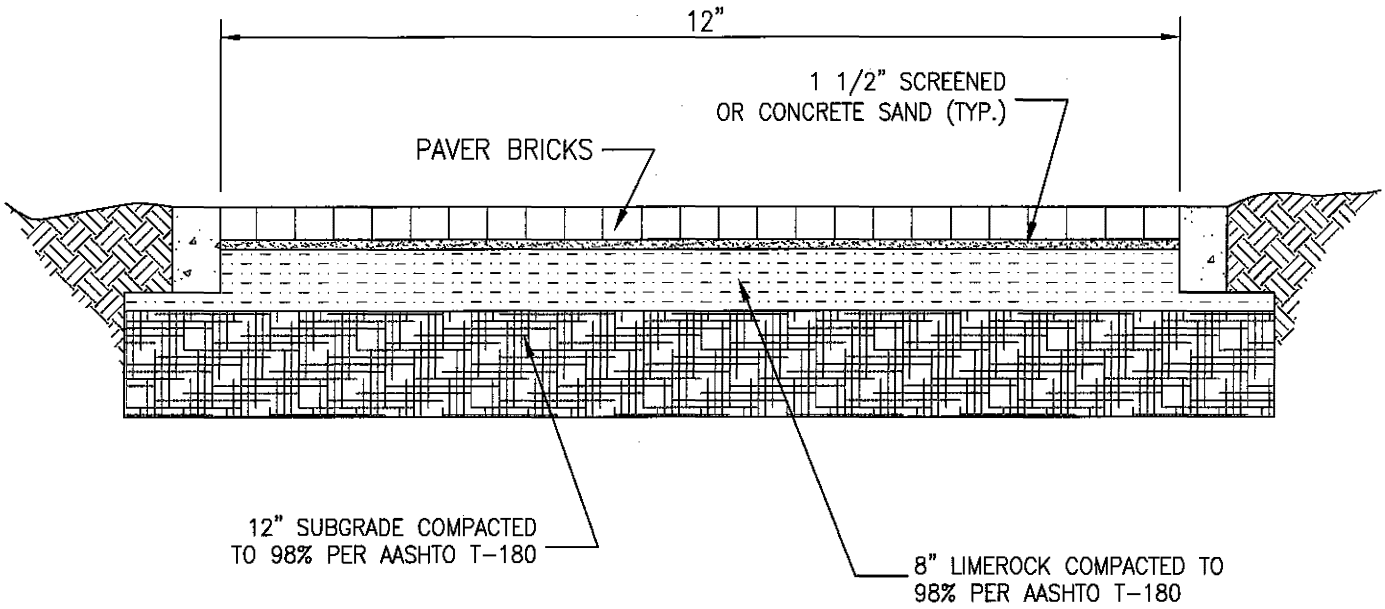
Sunshine State One Call 811®

of Florida, Inc.

REV:	
FIELD:	N/A
DRAWN:	KAL
APPR:	RWL

NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT

SCALE:	N.T.S.
DATE:	MAR. 2013
P.A.NO.	WF0590
DR. NO.	N-012

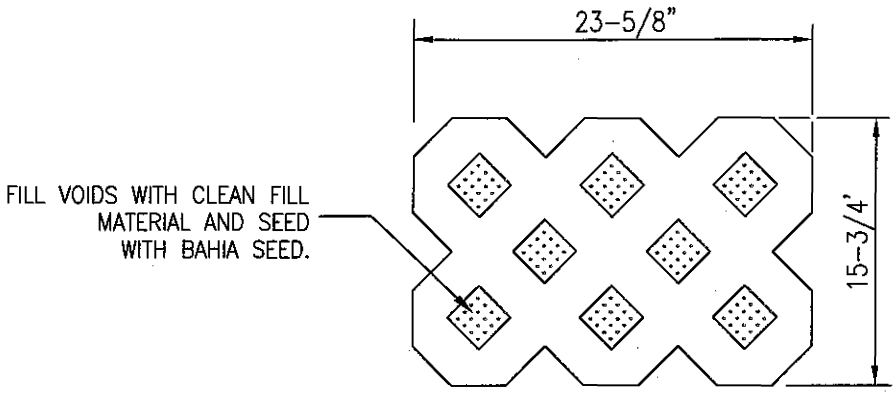


PAVER BLOCK INSTALLATION:

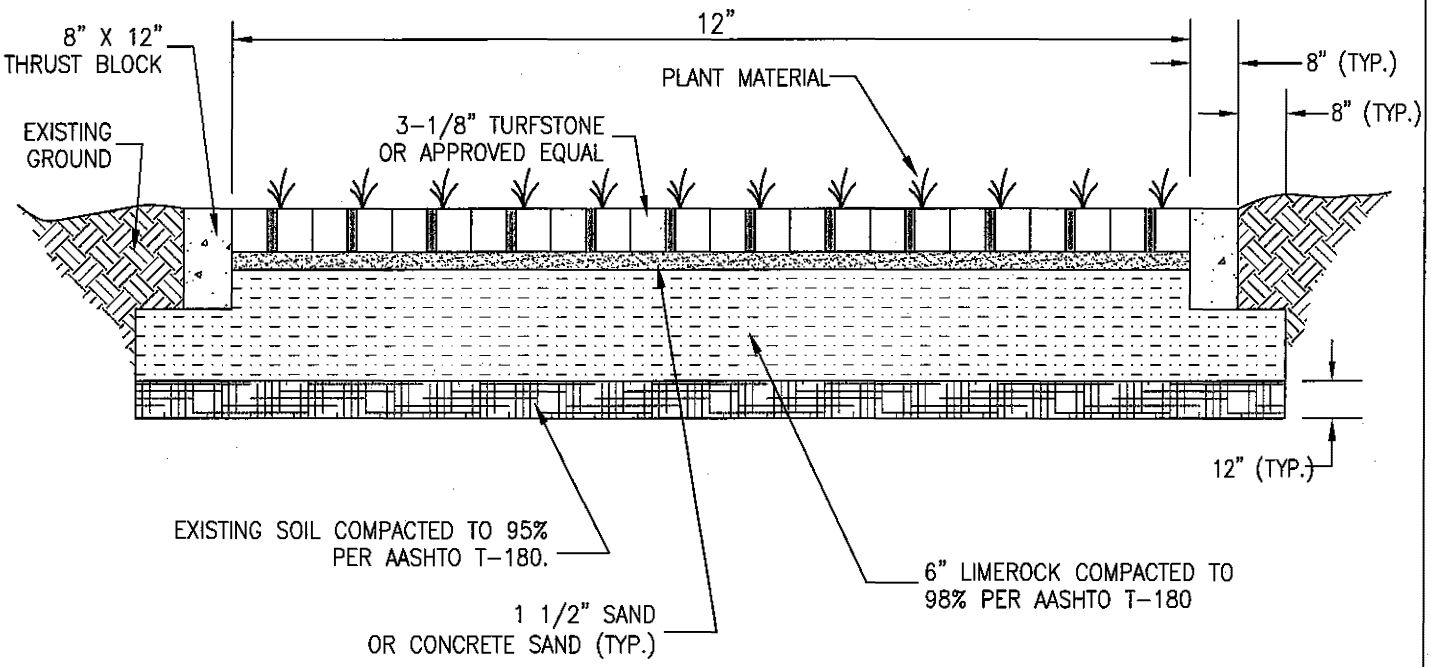
1. PLACE BEDDING COURSE OF SHARP, NO-SEAL WEIGHT SCREENING OR CONCRETE SAND TO A UNIFORM DEPTH OF APPROXIMATELY 1-1/2 IN. LEVELED TO GRADE.
2. INSTALL PAVER BLOCK UNITS WITH JOINTS APPROXIMATELY 1/8 IN. SPACING.
3. WHERE REQUIRED CUT PAVING STONES WITH AND APPROVED CUTTER TO FIT ACCURATELY, NEATLY AND WITHOUT DAMAGED EDGES.
4. TAMP PAVING STONES WITH MECHANICAL VIBRATOR UNTIL UNIFORMLY LEVEL, TRUE TO GRADE AND FREE FROM MOVEMENT.
5. FILL VOIDS IN JOINTS BY SWEEPING IN A FINE, DRY MASONRY SAND.
6. 3-1/8" MINIMUM THICKNESS.

TYPICAL ACCESS ROAD WITH PAVERS

REV:		**NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT**	SCALE:	N.T.S.
FIELD:	N/A		DATE:	MAR. 2013
DRAWN:	JAF		P.A.NO.	WF0590
APPR:	RWL		DR. NO.	N-013



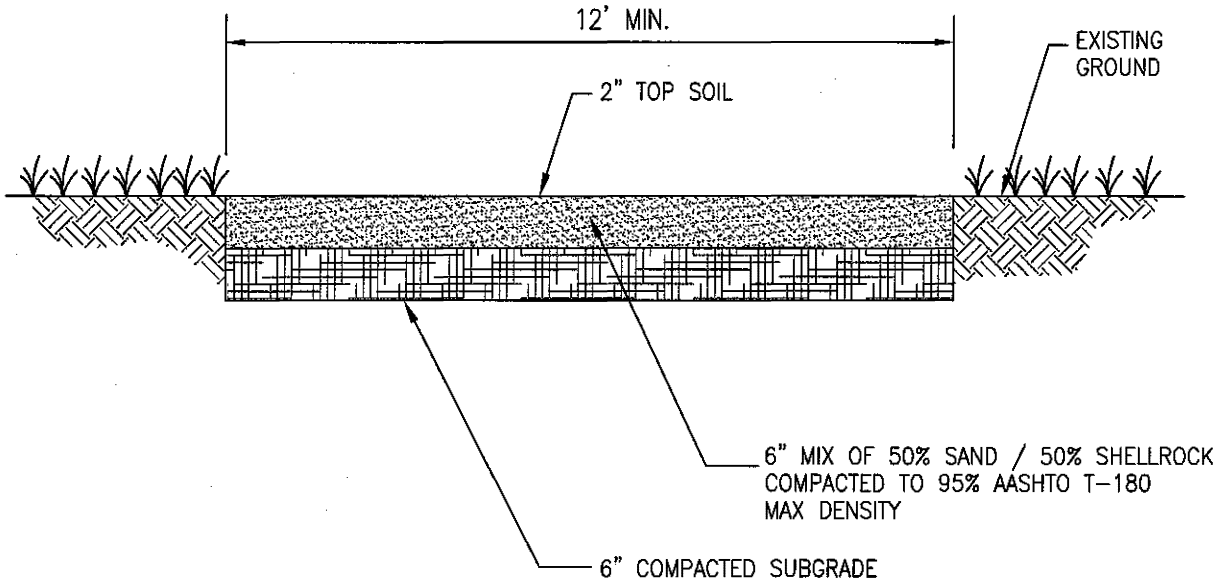
PLAN VIEW



SECTION

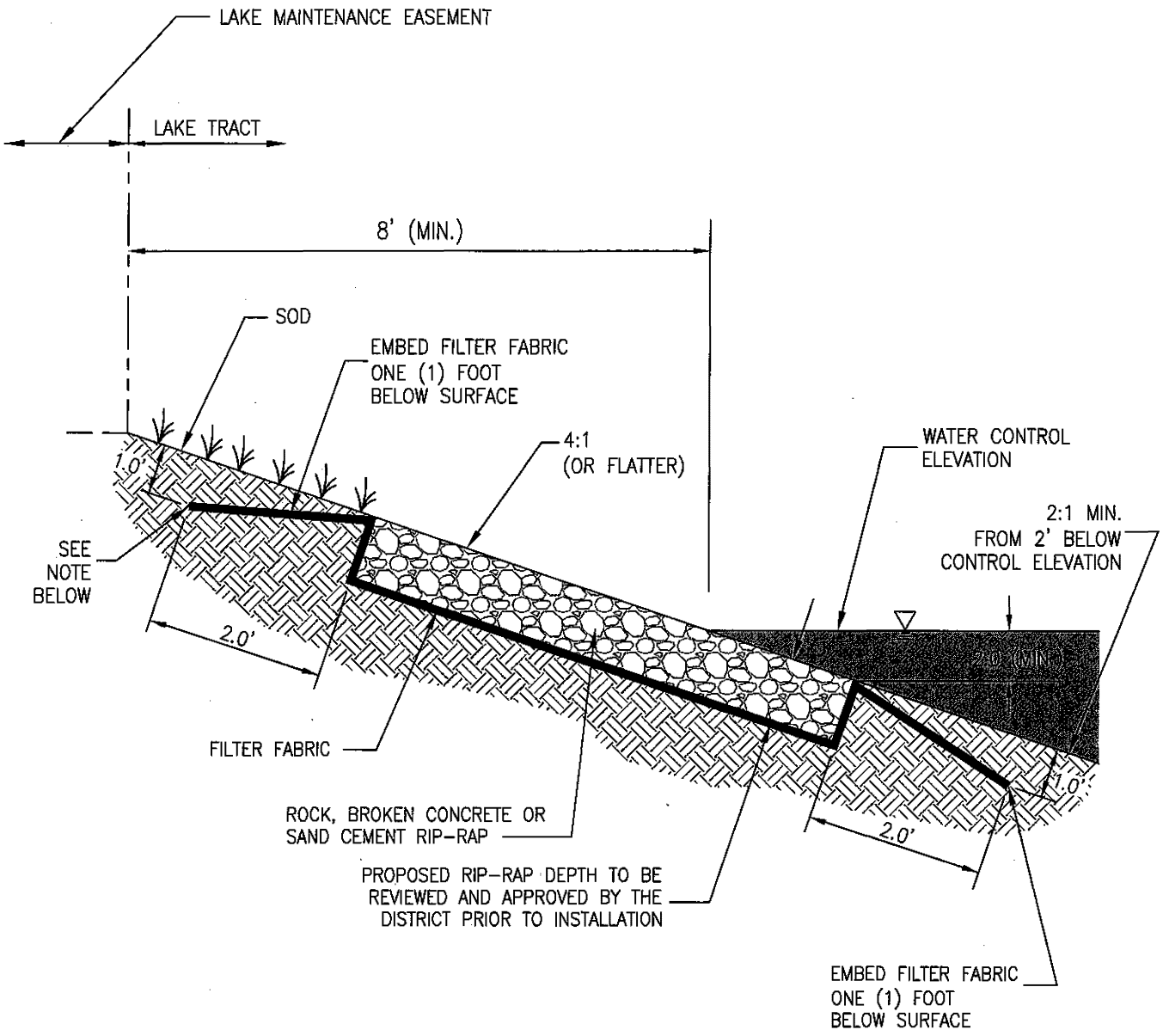
TYPICAL ACCESS ROAD WITH TURFSTONE

REV:		**NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT**	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	JAF		P.A.NO. WF0590
APPR:	RWL		DR. NO. N-014



ACCESS ROAD–SAND/ROCK MIXTURE

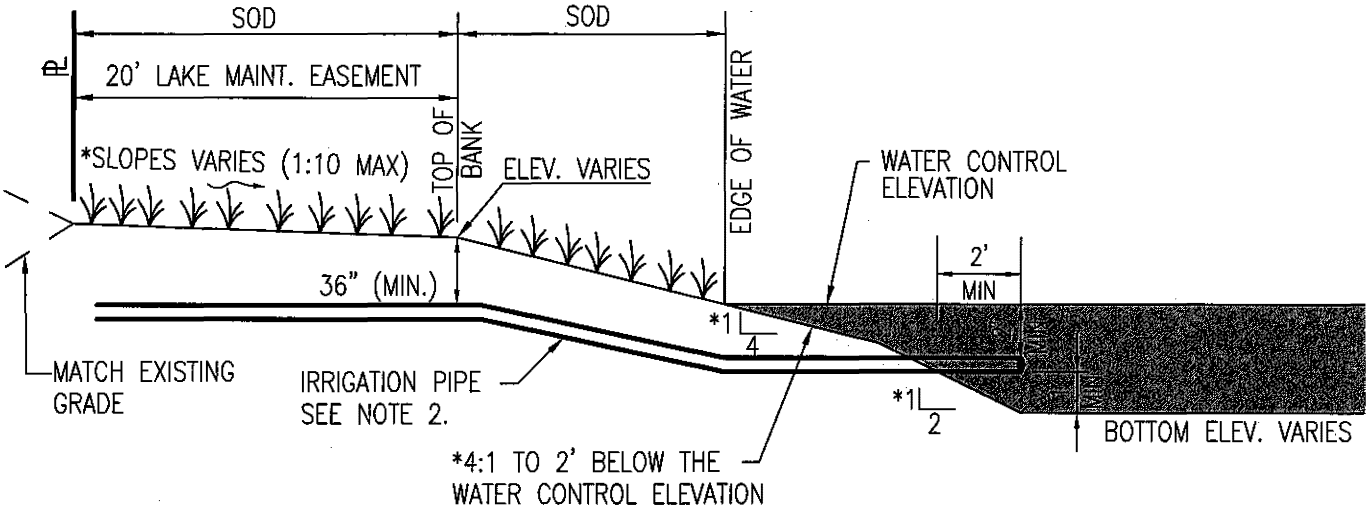
REV:		**NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT**	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	JAF		P.A.NO. WF0590
APPR:	RWL		DR. NO. N-015



SLOPE PROTECTION RIP-RAP DETAIL

NOTE:
1. RIP-RAP MATERIALS AND FILTER FABRIC SHALL BE PER FDOT DESIGN STANDARDS AND SPECIFICATIONS, LATEST EDITION.
2. EXPAND FILTER FABRIC 2 FEET BEYOND RIP-RAP ON ALL SIDES

REV:		**NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT**	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	JAF		P.A.NO. WF0590
APPR:	RWL		DR. NO. N-016

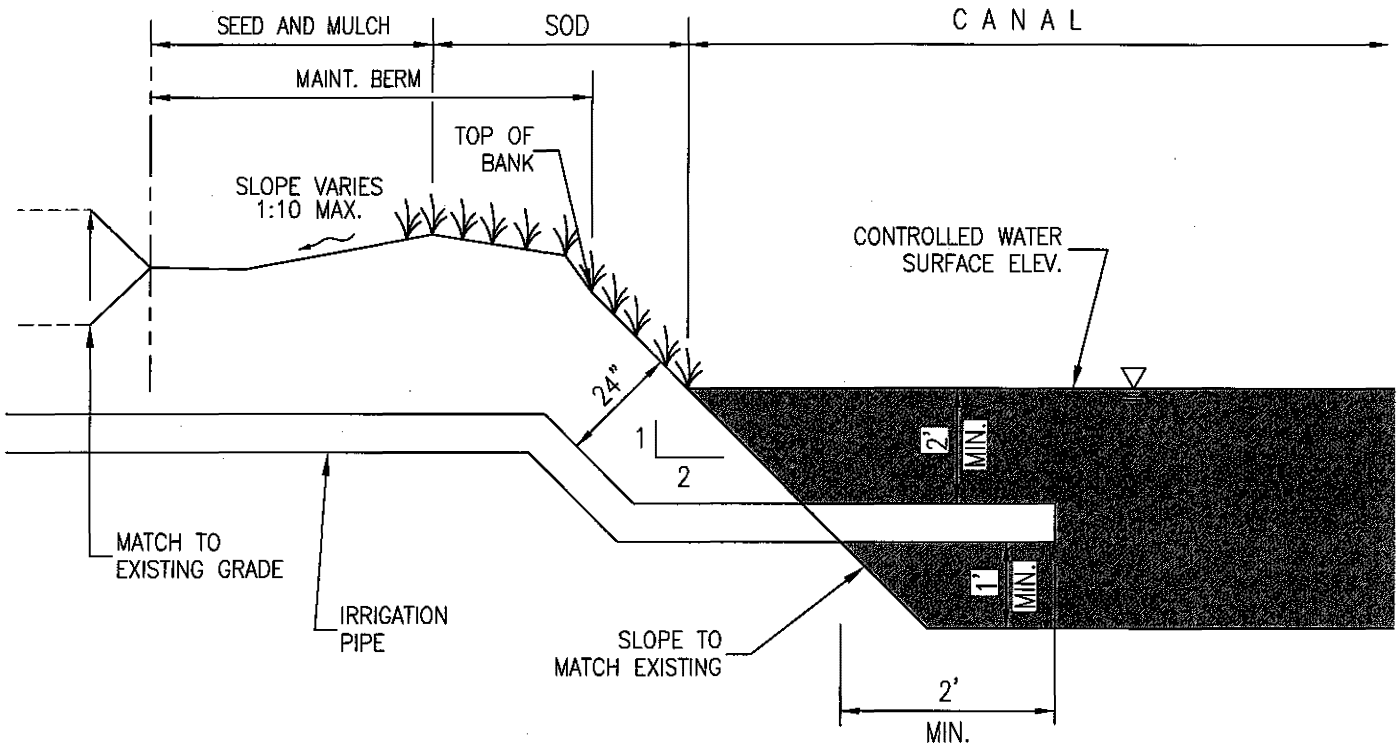


1) *MATCH EXISTING LAKE SLOPES
2) MATERIAL TYPE WILL BE REVIEWED AT TIME OF PERMIT APPLICATION
3) 36" MINIMUM COVER THROUGH EASEMENT AREA

TYPICAL IRRIGATION CONNECTION & LAKE BANK RESTORATION

NOT TO SCALE

REV:		**NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT**	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	KAL		P.A.NO. WF0590
APPR:	RWL		DR. NO. N-017

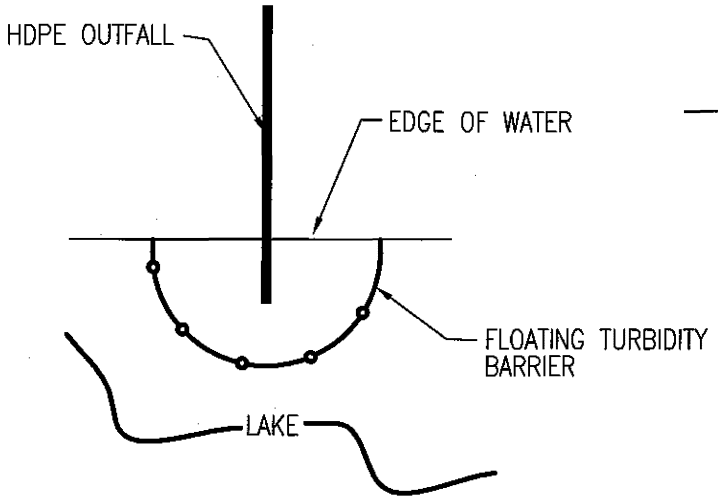


NOTE:

DISTURBED BANKS SHALL BE COMPACTED TO 95% MAXIMUM DENSITY PER AASHTO T-180 AND SODDED.

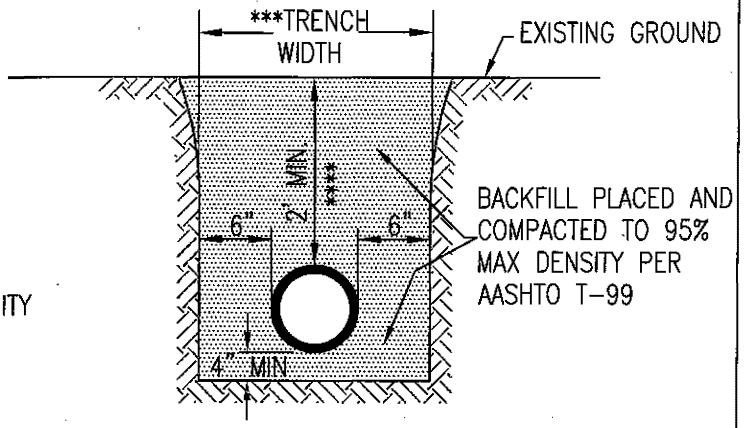
TYPICAL IRRIGATION CONNECTION DETAIL AND CANAL BANK RESTORATION

REV:		NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	KAL		P.A.NO. WF0590
APPR:	RWL		DR. NO. N-018



POLLUTION CONTROL REQUIREMENTS

NOT TO SCALE

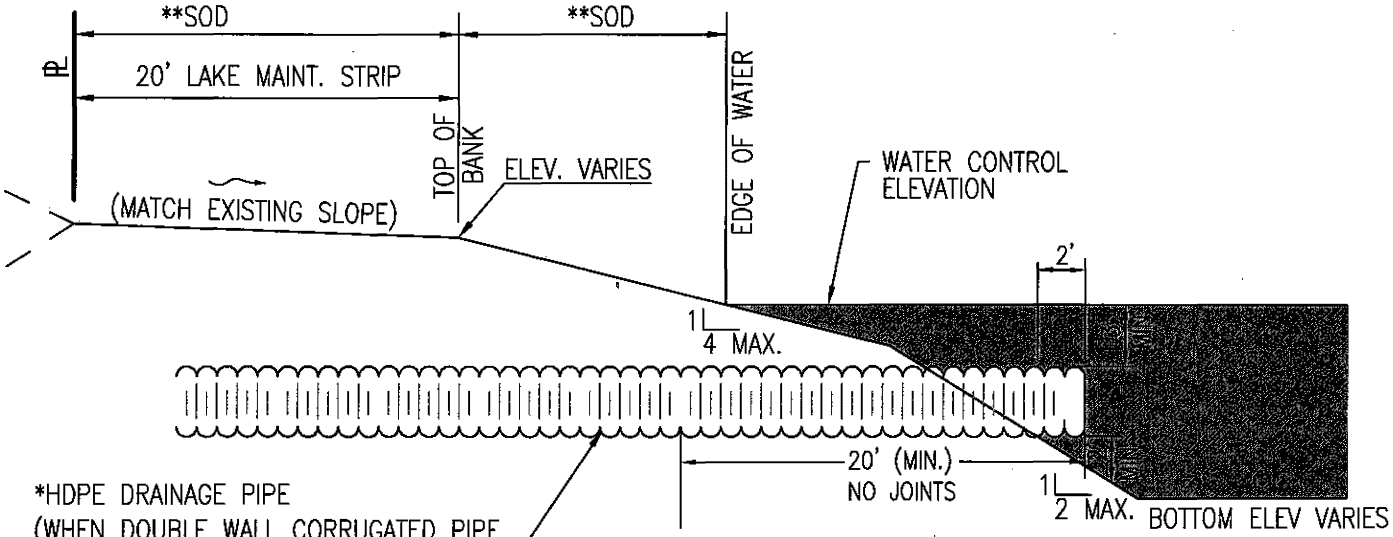


***TRENCH WIDTH= PIPE DIAMETER+1 FOOT

****BURY DEPTH TO BE A MINIMUM OF 2 FEET

PIPE BACKFILL REQUIREMENTS

ROOF/YARD DRAINS ONLY
NOT TO SCALE



*HDPE DRAINAGE PIPE (WHEN DOUBLE WALL CORRUGATED PIPE IS USED, MEASURES TO AVOID FLOATATION SHALL BE MADE)

*INSTALL AS REQUIRED PER PIPE BACKFILL DETAIL(THIS SHEET)

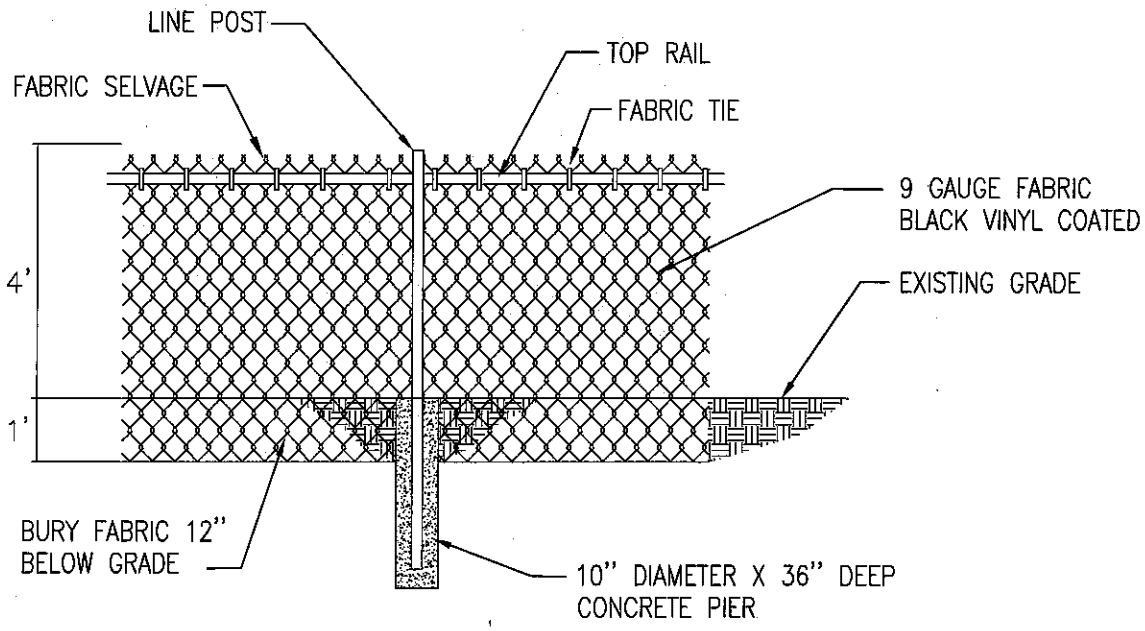
**ALL BANKS TO BE IMMEDIATLEY SODDED TO AVOID EROSION OF SLOPES

TYPICAL ROOF/YARD DRAIN OUTFALL TO LAKE

NOT TO SCALE

REV:	--	NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	KAL		P.A.NO. WF0590
APPR:	RWL		DR. NO. N-019

LINE POST CAP: PRESSED STEEL 2" X 1 5/8"
LINE POST: 2" OD X 7' SCHEDULE 40 PIPE
TOP RAIL: 1 5/8" OD X 24' SCHEDULE 40 PIPE
FABRIC TIE: 11 GAUGE STEEL (GALVANIZED)
FABRIC: 9 GAUGE
CORNER/END POST: 2 3/8" OD SCHEDULE 40 PIPE WITH 2 1/2" OD PRESSED STEEL TENSION BAND AND 5/8" X 5' STEEL BAR
END POST CAP: PRESSED STEEL 2 1/2" OD
FABRIC SELVAGE: KNUCKLE/KNUCKLE



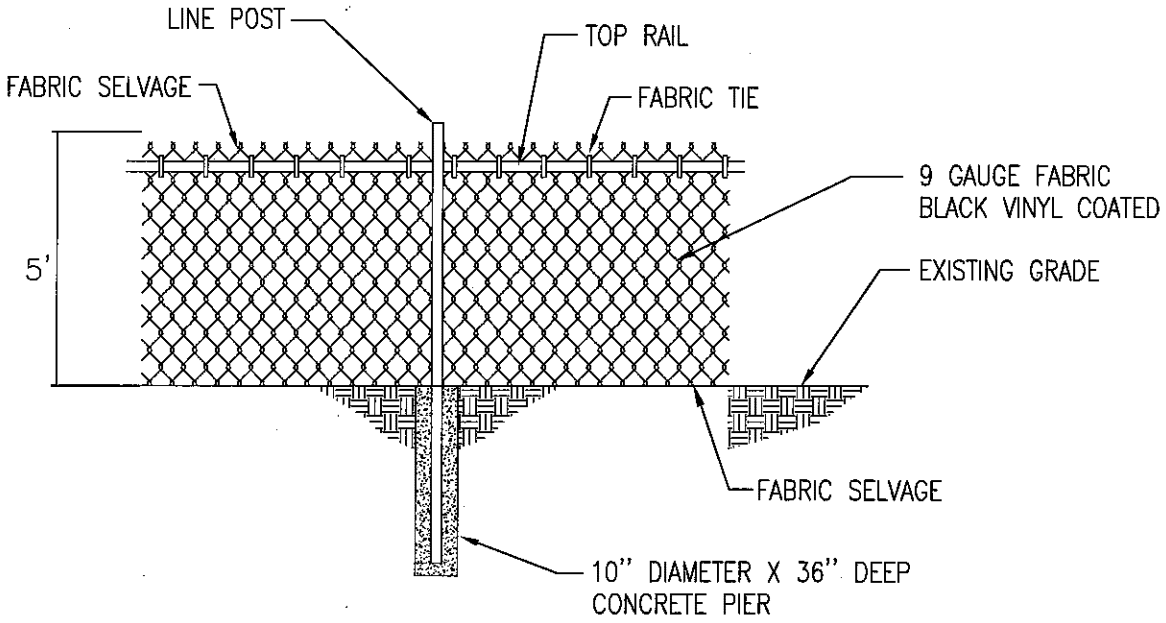
NOTES:
1. 12" X 8" CONCRETE SILL TO BE CONSTRUCTED AT GATES AND GREENWAY ACCESS POINTS AS GOPHER TORTOISE DETERRENT.
2. MAXIMUM 10' BETWEEN LINE POSTS OR END POST/LINE POST.

GREENWAY CHAIN LINK FENCE DETAIL

NOT TO SCALE

REV:		NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR 2013
DRAWN:	KAL		P.A.NO. WF0590
APPR:	RWL		DR. NO. N-020A

LINE POST CAP: PRESSED STEEL 2" X 1 5/8"
LINE POST: 2" OD X 7' SCHEDULE 40 PIPE
TOP RAIL: 1 5/8" OD X 24' SCHEDULE 40 PIPE
FABRIC TIE: 11 GAUGE STEEL (GALVANIZED)
FABRIC: 9 GAUGE
CORNER/END POST: 2 3/8" OD SCHEDULE 40 PIPE WITH 2 1/2" OD PRESSED STEEL TENSION BAND AND 5/8" X 5' STEEL BAR
END POST CAP: PRESSED STEEL 2 1/2" OD
FABRIC SELVAGE: KNUCKLE/KNUCKLE

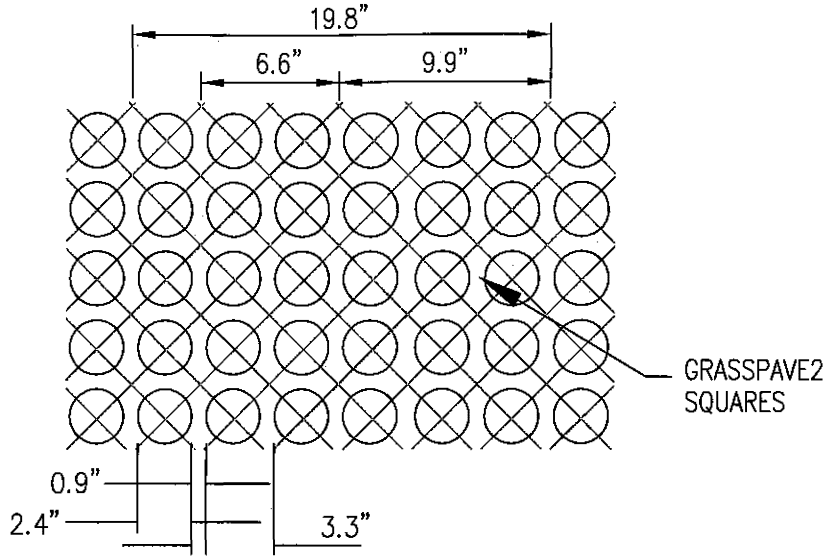


NOTE:
1. MAXIMUM 10' BETWEEN LINE POSTS OR END POST/LINE POST

CHAIN LINK FENCE DETAIL

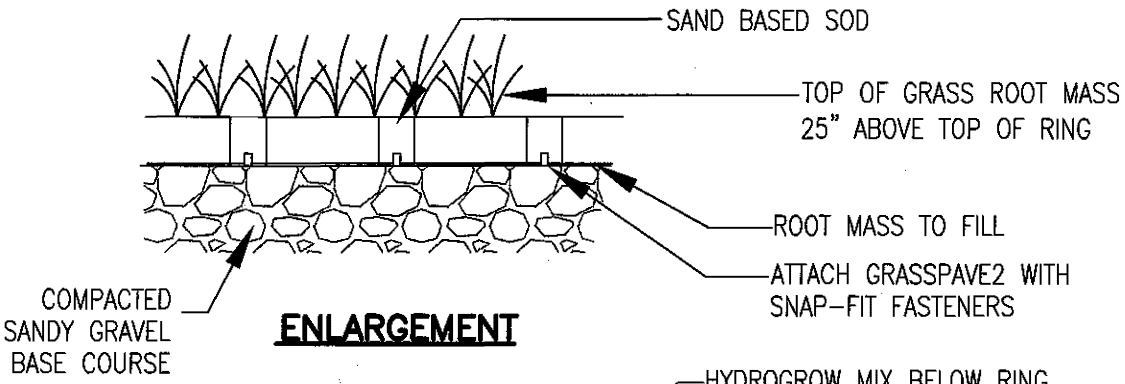
NOT TO SCALE

REV:		NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	KAL		P.A.NO. WF0590
APPR:	RWL		DR. NO. N-020B

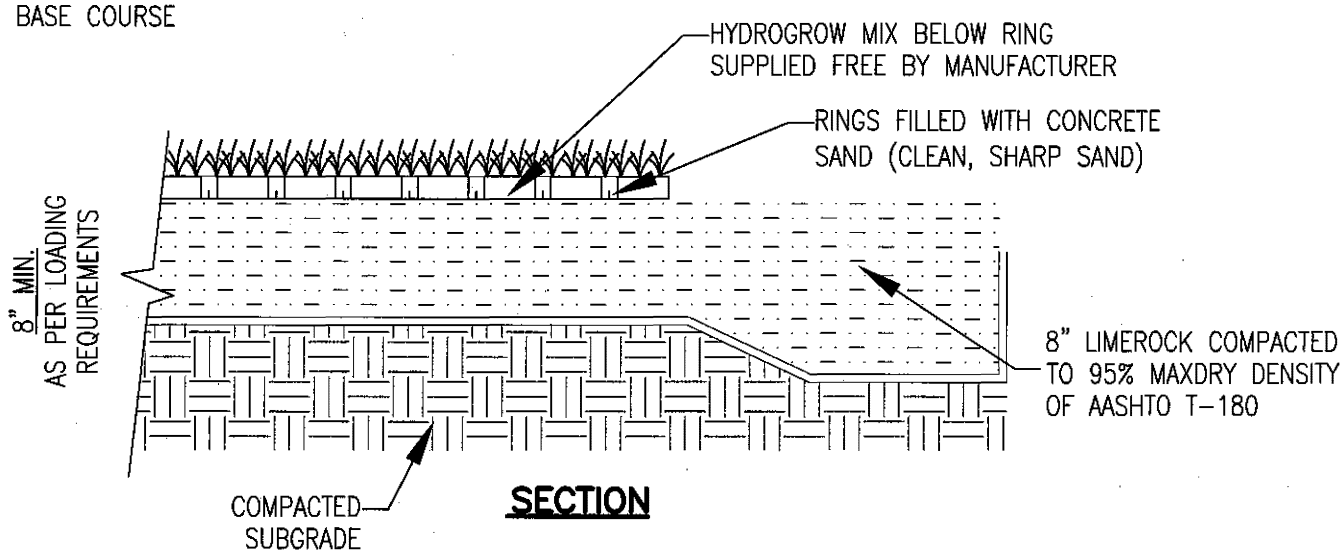


GRASS PAVE PLAN

NOT TO SCALE



ENLARGEMENT



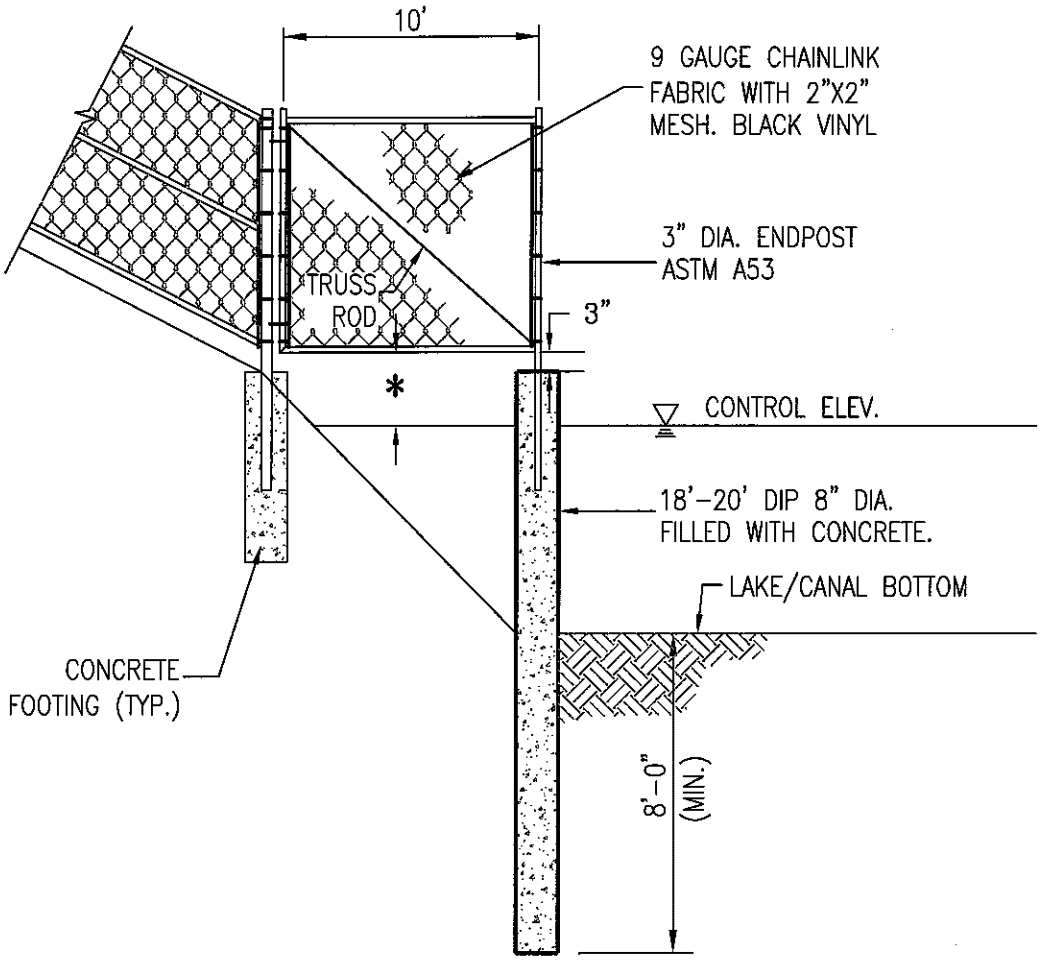
SECTION

TYPICAL TURF BLOCK DETAIL – GRASSPAVE

NOT TO SCALE

NOTE:
CONTACT: GAP ARCHITECTURAL PRODUCTS
JOANNE GULLIKSEN (315) 207-6654

REV:		**NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT**	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	KAL		P.A.NO. WF0590
APPR:	RWL		DR. NO. N-021

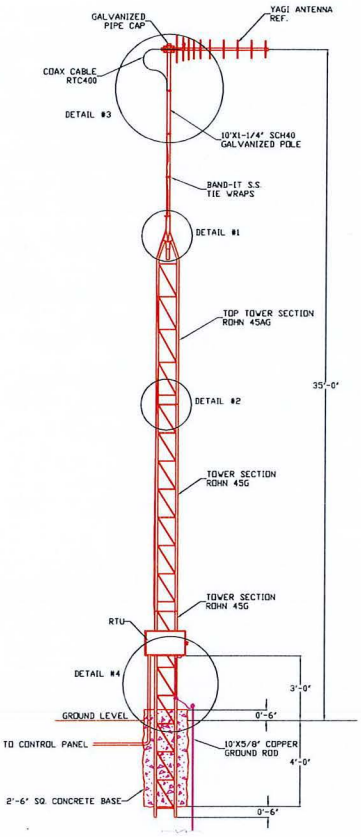


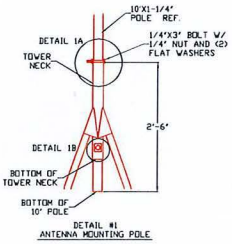
CHAINLINK FENCE TERMINATING OVER WATER

*NOTE: BOTTOM RAIL TO BE A MINIMUM OF 12" ABOVE CONTROL. BOTTOM RAIL SHALL BE AT OR ABOVE 100 YR-3 DAY STAGE FOR ALL CANALS.

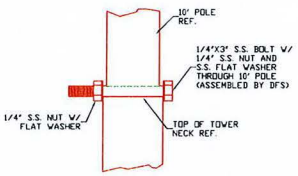
REV:		**NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT**	SCALE: N.T.S.
FIELD:	N/A		DATE: MAR. 2013
DRAWN:	JAF		P.A.NO. WF0590
APPR:	RWL		DR. NO. N-022

DATA FLOW STANDARD ANTENNA

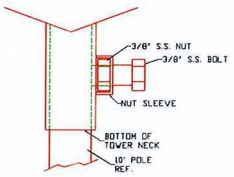




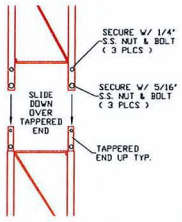
DETAIL #1
ANTENNA MOUNTING POLE



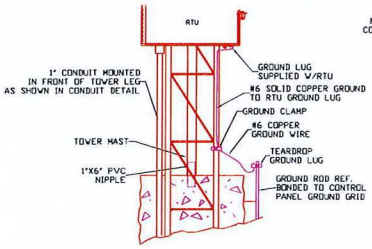
DETAIL 1A
NECK SUPPORT BOLT



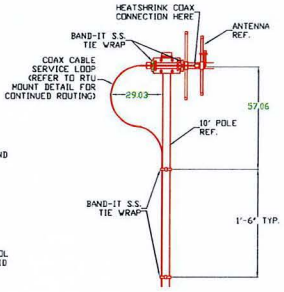
DETAIL 1B
POLE SWIVEL BOLT SIDE VIEW



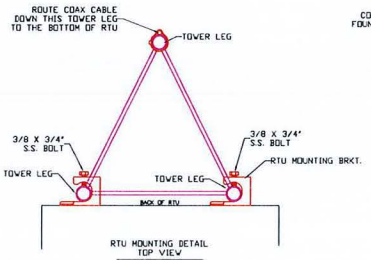
DETAIL #2
TOWER CONNECTING



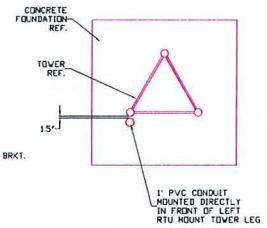
DETAIL #3
GROUNDING DETAIL



DETAIL #3
COAX MOUNTING & ROUTING



RTU MOUNTING DETAIL
TOP VIEW



CONDUIT DETAIL
TOP VIEW

JOB NO.			
DATA FLOW SYSTEMS, INC. MELBOURNE, FL		DFS-00353-008-	
DRAWN:MCV	TITLE: 45G TOWER ASSEMBLY 35' 1-1/4" POLE 150 MPH WIND RATING (3 SEC GUST)		REV. —
CHK'D:			
ENGR:			
DATE: 12/22/04	SCALE: NTS	SHEET: 1 OF 1	

Section 01000

General Requirements

PART 1 - GENERAL

1.0 PROJECT LOCATION

(Describe in general terms the location of the project)

2.0 DESCRIPTION OF WORK

(Describe in general terms the project)

3.0 SCOPE OF WORK

A. The work to be performed by the Contractor includes furnishing all materials, labor, tools, equipment, water light, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of every nature whatsoever necessary to modify, construct, complete, deliver and place in operation the subject Project as shown on the Drawings and/or as herein described as specified. All work to be in accordance with the Contract Documents.

B. All material, equipment, labor and work to be furnished for the successful construction of this project shall be in strict compliance with the latest edition of all applicable codes, standards and referenced specifications, as well as all contract documents summarized herein.

C. Submittals - Project submittals of all types required for this work are identified throughout the project conditions and specifications in each section. The Contractor shall be responsible for properly executing each submission with the correct forms and procedures. General requirements with respect to submittals are given in Section 01300.

D. All work performed under the Northern contract shall conform to the latest edition of the Northern Engineering Standards Manual, unless authorized by the District Engineer. Northern Standards shall govern unless local standards prove to be more stringent.

4.0 REFERENCE POINTS

A. The reference points which will be provided by the Owner as mentioned in Article 4.4 of the General Conditions, will be the staking (or otherwise marking) of the baseline as shown on the drawings. A benchmark for vertical control will also be provided. All construction staking to be provided by the Contractor.

B. Laying Out Work – Contractor shall, immediately upon entering project site for purpose of beginning work, locate all reference points and take such action as is necessary to prevent their destruction; lay out their own work and be responsible for all lines, elevations and measurements of the grading, excavation and/or the rework executed by them under the contract. They must exercise proper precaution to verify figures shown on drawings before laying out work and will be held responsible for any error resulting from their failure to exercise such precaution.

5.0 EXAMINATION OF DOCUMENTS AND SITE

A. Examination Of Documents

1. The Contractor, in undertaking the work of this contract, shall have thoroughly examined and familiarized themselves with all contract and project documents in regards to the extent of work required. No consideration will be given any claim based on lack of knowledge or understanding of the contract documents.

2. The Contractor is responsible for furnishing and installing all items identified or detailed in the Contract Drawings whether or not they are listed in the Contract Specifications. Conversely, they shall also furnish and install all items specified whether or not they be identified or detailed in the contract drawings.

3. The Contractor shall immediately inform the Engineer in writing of discrepancies or ambiguities; and request a clarification before proceeding with the work in the area of question.

B. Examination of the Site

1. Each bidder shall before submitting their proposal, visit and examine the premises to satisfy themselves as to the scope of work, existing conditions and any difficulties attending to the performance of this work.

2. Once selected, the Contractor is assumed to have visited the site and to have taken into consideration all conditions which might affect their work.

3. No consideration will be given any claim based on lack of knowledge of existing conditions except where the contract documents make a definite provision for adjustment of cost or extension of time due to existing conditions which cannot be readily ascertained.

6.0 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

A. All known utilities have been shown on the drawings according to the best information available. It is the Contractor's responsibility to contact all owners of structures or utilities above ground, on the surface, or below the ground, within the Project area so that said owners may stake or otherwise mark or protect their facilities. The Contractor must provide facilities and be responsible for the protection of all structures, buildings and utilities, underground, on the surface, or above ground against trenching, dewatering, or any other activity connected with the Work throughout the entire Contract Time.

B. When structures and utilities have been properly shown or marked and are disturbed or damaged in the execution of the Work, they must be repaired immediately in conformance with best standard practice and the approval of the owner of the damaged utility or structure. In the case of structures and utilities which have not been properly shown or located as outlined above and are disturbed or damaged in the prosecution of the Work, take whatever steps are necessary for safety and notify the affected utility owner and avoid any actions which might cause further damage to the structure or utility.

C. Should the Work require repairs, changes or modifications of the Owner's utilities as well as other utilities, it is the responsibility of the Contractor to provide for the maintenance of continuous water, sewage, electric, telephone and other utility services to all present customers of such utilities, unless approval in writing is secured from the applicable utility company or Owner for interruption of such service.

D. The Contractor, before beginning any excavation or demolition under this Agreement, shall provide to the Engineer the "Notice of Compliance with Chapter 556, Florida Statutes", identified in paragraph 8.13 of the Agreement.

7.0 COORDINATION

A. Responsibilities

1. Only the General Contractor shall be recognized as part of this contract. It shall be their responsibility to turn over to the Owner a complete project in all respects in accordance with these drawings and specifications.

2. The Contractor shall generally coordinate the work of all trades and be responsible for supervising the proper fabrication, delivery, storage, handling and installation of all work.

B. Cooperation - The General Contractor and all subcontractors shall cooperate with one another and with other Contractors and Land Owner doing related work, and shall coordinate their work with the work of other trades and other Contractors so as to facilitate the general progress of the work. Each trade shall afford all other Contractors every reasonable opportunity for the installation of their work and for the storage of their materials.

8.0 MAINTENANCE OF TRAFFIC

A. In the Contractor's use of streets and highways for the Work to be done under these Specifications, conform to all Municipal, County, State and Federal laws and regulations as applicable. Provide, erect and maintain effective barricades, warning lights, and signs on all intercepted streets or highways for protection of the Work and safety of the public. All barricades or obstructions which encroach on or are adjacent to the public rights of way should be provided with lights which are illuminated at all times between sunset and sunrise.

B. Arrange Work to cause minimum disturbance of normal pedestrian and vehicular traffic and be responsible for providing suitable means of access to all public and private properties during all stages of the construction. Other than for an emergency safety condition, the Contractor must contact the Owner and Engineer for approval prior to completely blocking off any street to vehicular traffic during construction.

C. Maintain traffic in accordance with Section of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.

D. Contractor is responsible for preparing a Maintenance of Traffic Plan. Submit plan to roadway authority (City, County, DOT) for review.

The Maintenance of Traffic Plan must be prepared by a person who is certified by the State of Florida to prepare such plan.

E. When the Bid Form does not include a separate item for Maintenance of Traffic, the costs are to be included for payment under the several scheduled items on the Bid Form, and no separate payment will be made thereof.

F. Shall provide a contact name and operable telephone numbers relative to the approved M.O.T. plan should Northern require site adjustments or contact.

G. Logs of M.O.T. inspection will be kept and available for Northern personnel as requested. Inspection forms shall be those utilized by DOT.

9.0 PLACING EQUIPMENT INTO SERVICE

A. Do not operate or place into service or energize electrical and mechanical equipment until approved by the Owner and Engineer. Such approval may be granted only after all interested parties have been duly notified, have given approval for placing the equipment into service, and all interested parties are present or waived their right to be present. Notify the Owner and Engineer as far in advance as possible of the dates that various items and equipment will be completed and ready for start-up.

10.0 SALVAGEABLE MATERIAL

A. All salvageable material and/or equipment removed from the existing construction for which specific use, relocation or other disposal is not specifically noted on the Drawings or otherwise specified, will remain the property of the Owner and be turned over to him. All material and/or equipment not in salvageable condition as determined by the Engineer must be disposed of by the Contractor. The actual storage site for salvageable material will be designated by the Owner.

11.0 BORING LOGS, OTHER REPORTS AND DRAWINGS UTILIZED BY ENGINEER

A. Boring logs, other reports and Drawings utilized by the Engineer, if attached at the end of these Specifications, are provided for Contractor's information in accordance with paragraph 4. of the Instruction to Bidders and are not a part of the Contract Documents. There is no technical data in the Boring Logs, other reports or Drawings that should be relied on by the Contractor. There also were no other reports or drawings utilized by Engineer in preparation of the Contract Documents that contained data that could be relied on by the Contractor.

12.0 DISPOSAL OF EXCAVATED MATERIALS AND DEBRIS

A. All debris not allowed for backfill (unless otherwise noted), broken pipe, sidewalks, curbs and other concrete items, together will all roots, boards and other debris are to be disposed of by the Contractor at an appropriate legal site.

13.0 UTILITY STANDARDS

A. All materials, construction and documentation for the water system shall be in accordance with the (Name of Utility Supplying Water and Wastewater Services). Information on the plans and within the standards of Appendix "B" (if needed), supersede the remainder of the specifications contain herein. Appendix B of the Project Manual contains the following excerpts from the (Name of Utility Supplying Water and Wastewater Services).

14.0 PROTECTION OF EXISTING OVERHEAD/UNDERGROUND ELECTRICAL LINES AND UTILITIES

A. The Contractor shall be responsible for the protection of all existing overhead and underground electrical lines and utilities whether or not shown on the plans. The Contractor shall be responsible to coordinate and pay for the de-energizing of power lines and/or power poles during construction at no additional cost to the Owner.

15.0 POLLUTION PREVENTION PLAN

A. A Pollution Prevention Plan shall be prepared and submitted to the Owner and Engineer which demonstrates the mechanisms and practices that will be employed to protect the construction site and surrounding area during construction. The Plan shall be consistent with Federal National Pollutant Discharge Elimination System (NPDES) permit requirements pertaining to pollution prevention plans. The plan shall include, but not be limited to, the locations of silt barriers, turbidity screens or temporary sheeting, emergency response practices, and other methods to prevent pollution. Refueling or storage of vehicles or equipment that utilize petroleum based products shall be prohibited anywhere within 50 feet of a water's edge.

B. The Contractor is to submit and obtain a NPDES permit and comply with its requirements.

C. Implement Plan during the progress of the Work.

D. Stormwater Polluction Prevention Plan inspection log must be kept and on site for inspection.

16.0 COORDINATION/PROGRESS MEETINGS

A. Contractor's project manager and a representative of subcontractor performing work at the time of meeting shall attend on onsite coordination/progress meeting(s) during the progress of the Work. Coordination and progress meetings are to be specified by the Project Engineer.

17.0 WORK SCHEDULE

A. (Describe in general terms the Work Schedule). A work schedule shall be provided by the Contractor at the beginning of the project and updated on a monthly basis and at the time of pay application for request of payment.

B. Provide emergency contact information for job supervisor that is viable throughout duration of the project.

END OF SECTION

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Measurement and payment criteria applicable to the Work performed under a Unit Price payment method.

1.02 GENERAL

A. The Contractor shall receive and accept the compensation provided in the Proposal and the Contract under a unit price payment method for performing all operations necessary to complete the work under the Contract, and also payment for all loss or damages between the actual quantities of work and quantities herein estimated by the Project Engineer, or from the action of the elements or from any unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the Owner.

B. The prices stated in the Proposal include all costs and expenses for taxes, labor, equipment, materials, commissions, transportation charges and expenses, patent fees and royalties, labor for handling materials during inspections, together with any and all other costs and expenses for performing and completing the work as shown on the Plans and specified herein. The basis of payment for an item at the unit price shown in the Proposal shall be in accordance with the description of that item in this Section.

C. The Contractor's attention is again called to the fact that the quotations for the various items of work are intended to establish a total price for completing the work in its entirely. Should the Contractor feel that the cost for any item of work has not been established by the Bid Form or Payment Items, the Contractor shall include the cost for that work in some other applicable bid item, so that their proposal for the project does reflect their total price for completing the work in its entirety.

1.03 VOLUME MEASUREMENT

A. Measured by cubic dimension using mean length, width, and height or thickness.

B. For excavation of lakes, canals, ditches, etc., material will be measured after clearing and grubbing of the site in its original position (“in place”) by a Professional Surveyor and Mapper who is licensed in the State of Florida. The Contractor will retain the Surveyor. Quantities will be based on before and after cross sections determined by the Surveyor after clearing and grubbing of the site. Payment will not be made for excavation beyond the lines shown on the Drawings.

1.04 AREA MEASUREMENT

A. Measured by square dimension using mean length and width or radius.

1.05 LINEAR MEASUREMENT

A. Measured by linear dimension, at the item centerline or mean chord.

B. For pipelines, the length will be measured from center of structure or fitting to center of structure of fitting.

PART 2 - MATERIAL (NOT USED)

PART 3 - EXECUTION

3.01 MEASUREMENT AND PAYMENT

A. The quantities for payment under this Contract shall be determined by actual measurement of the completed items, in place, ready for service and accepted by the Owner, in accordance with the applicable method of measurement therefore contained herein unless otherwise stated. A representative of the Contractor shall witness all field measurements.

B. The Project Engineer will take all measurements and compute quantities unless noted otherwise herein.

C. Contractor to assist Project Engineer by providing necessary equipment, workers, and survey personnel as required.

D. Quantities and measurements indicated in the Bid Form are for bidding and Contract purposes only. Quantities and measurements supplied or placed in the Work and verified by the Project Engineer will determine payment. Waste will not be included in the measurements or quantities.

E. If the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the Contract Unit Price.

F. Payment for all work completed under this Contract shall be in accordance with the provisions of the Contract and upon the basis of specific provisions of this Section of the Contract Documents. The bid items for furnishing and installing work under the Contract shall include full compensation for completing all activities not limited to selling, delivery, construction, testing, vandalism, or breakage.

G. Payment Includes: Full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

H. Final payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the Project Engineer multiplied by the unit price for Work which is incorporated in or made necessary by the Work.

I. Payment for lump sum items will be made on the basis of percentage complete as approved by the Project Engineer.

END OF SECTION

SECTION 01068

PART 1 - GENERAL

1.01 DEFINITIONS

A. Except as specifically defined otherwise, the following definitions supplement definitions of the Contract, General Conditions, Supplementary Conditions and other general contact documents, and apply to the work.

1. Owner: **NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT (NPBCID)**
   359 Hiatt Drive
   Palm Beach Gardens, FL 33418
   Phone: 561-624-7830

2. General Requirements: Provisions of Division 1 sections of these specifications.

3. Indicated: Shown on drawings by notes, graphics or schedules, or written into other portions of Contract Documents. Terms such as "shown", "noted", "Scheduled" and "Specified" have same meaning as "indicated", and are used to assist the reader in locating particular information.

4. Directed, Requested, Approved, Accepted, etc.: These terms imply "by the Engineer", unless otherwise indicated.

5. Approved by the Engineer: In no case releases Contractor from responsibility to fulfill requirements of Contract Documents.

6. Project Site: Space available to Contractor at location of project, either exclusively or to be shared with separate contractors, for performance of the work.

7. Furnish: Supply and deliver to project site, ready for unloading, unpacking, assembly, installation, and similar subsequent requirements.

8. Install: Operations at project site, including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar requirements.

9. Provide: Furnish and install, complete and ready for intended use.

10. Engineer: Name of Project Engineer or Consulting Engineer designated by NPBCID to represent them on this project as the “ENGINEER”. At times the District Engineer will be the designated owner’s representative and will serve in the capacity of “ENGINEER”.

11. Contractor: Prime, General Contractor; the Vendor named in the Contract.

12. Construction Completion Date: Substantial Completion Date. (Substantial Completion Date” is defined in the General Conditions.)

13. Day: Calendar day.

14. Installer: Entity (firm or person) engaged to install work, by Contractor,

subcontractor or sub-subcontractor. Installers are required to be skilled in work they are engaged to install.

15. Specification Text Format: Construction Specification Institute (CSI) Master Format.

16. Overlapping/Conflicting Requirements: Most stringent (generally) language written directly into Contract Documents is to be used. Overlapping/conflicting requirements do not indicate that a less stringent requirement might be acceptable. Refer uncertainties to Engineer for decision before proceeding.

17. Where optional requirements are specified in a parallel manner, option is intended to be Contractor's unless otherwise indicated.

18. Minimum Requirements: Indicated requirements are for a specific minimum acceptable level of quality/quantity, as recognized in the industry. Actual work must comply (within specified tolerances), or may exceed minimums within reasonable limits. Refer uncertainties to Architect/Engineer before proceeding.

19. Abbreviations, Plural Words: Abbreviations, where not defined in Contract documents, will be interpreted to mean the normal construction industry terminology, determined by recognized grammatical rules, by the Engineer. Plural words will be interpreted as singular and singular words will be interpreted as plural where applicable for context of Contract Documents.

20. Testing Laboratory: An independent entity engaged for the project to provide inspections, tests, interpretations, reports and similar services.

1.02 STANDARDS AND REGULATIONS

A. Industry Standards: Applicable standards of construction industry have same force and effect on performance of the work as if copied directly into Contract Documents or bound and published herewith. Standards referenced in Contract Documents or in governing regulations have precedence over non-referenced standards, insofar as different standards may contain overlapping or conflicting requirements. Comply with standards in effect as of date of Contract Documents, unless otherwise indicated.

B. Abbreviations: Where abbreviations or acronyms are used in Contract Documents, they mean the well recognized name of entity in building construction industry. Refer uncertainties to Engineer before proceeding.

C. Trade Union Jurisdictions: Maintain current information on jurisdiction matters, regulations, actions and pending actions; and administer/supervise performance of work in a manner which will minimize possibility of dispute, conflicts, delays, claims, or losses.

D. Trades: Except as otherwise indicated, the use of titles such as "carpentry" in specification text, implies neither that the work must be performed by an accredited or unionized tradesperson of corresponding generic name (such as "carpenter"), nor that specified requirements apply exclusively to work by tradesperson of that corresponding generic name.

END OF SECTION

SECTION 01200

PROJECT MEETINGS

PART 1 - GENERAL

1.01 DESCRIPTION

A. The Contractor and Engineer or Engineer's representative shall be required to attend all scheduled project meetings.

B. The location, date and time of project meetings shall be determined by the Project Engineer.

1.02 PRECONSTRUCTION CONFERENCE

A. A preconstruction conference will be held within fourteen (14) days of the "Notice To Proceed" and before the commencement of work.

B. See Section 01300 for submittals required at preconstruction conference.

1.03 PROGRESS MEETING

At lease once a month there shall be project progress meeting. The meeting will be attended by a representative of the Owner, the Contractor, Engineer and such others as may be deemed appropriate at the time. The Engineer will coordinate these meetings.

1.04 MEETINGS

The Owner, the District Engineer and Engineer, reserve the right to convene other meetings that are deemed to be in the best interest of the Owner.

1.05 CONTRACT ADMINISTRATION

Contract Administration and project meetings shall be handled by the Engineer. The Engineer will provide construction observations at regular intervals to ensure compliance with the Contracts Documents.

1.06 AGENDA

The following topics will be discussed as well as other site-specific topics at the Pre-construction meeting.

1 Organizational arrangement of Contractor's forces and personnel, and those of subcontractors, materials suppliers, and the Engineer;
2 Channels and procedures for communication;
3 Construction schedules, sequence of critical work, schedule of values, details, work by subcontractors, offsite fabrication, revisions, updating, maintenance, reissue;
4 Contractor documents, including distribution of required copies of drawings and revisions;

5 Processing of Shop Drawings and other data submitted to the Engineer for review;
6 Processing of field decisions and Change Orders;
7 Project signs; PPD or BOR, Felony Trespassing, and Anti-Harassment. (No other signs are allowed.)
8 Assignment of Vehicular Parking and Staging Area;
9 Permits;
10 Tree protection;
11 Completion – time extensions – liquidated damages;
12 Storage facilities;
13 Working hours;
14 Utility Outages, temporary power, and metering;
15 Completion inspections – substantial and final;
16 Payment procedures and forms;
17 “As-Built” drawings and manuals;
18 Workmanship and quality;
19 Site supervision including work by subcontractors and sub-subcontractors.

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 GENERAL

1.00 DESCRIPTION

A. Submittals from the Contractor to the Engineer shall be accompanied by a letter of transmittal.

B. Materials and other items subject to approval shall not be incorporated in the project before receipt of written approval.

1.01 SPECIFIED ELSEWHERE

Measurement and Payment – See Section 01025
Reporting and Payments – See Section 01155
Shop Drawings - See Section 01310.

1.02 CERTIFICATION OF INSURANCE

Certificates of Insurance shall be filed with the Owner and copies to the Engineer prior to commencement of the work.

1.03 CONTRACT COST BREAKDOWN

A. "Progress and Payment" forms shall be used to prepare values of contract cost and pay requests as required by general conditions. Contract cost breakdown shall be submitted to the Engineer within fourteen (14) days after commencement date specified in the "Notice to Proceed."

B. No payment will be approved until contract cost breakdown is modified as requested and approved by the Engineer.

1.04 LISTING OF SUBCONTRACTORS

Submit complete list of subcontractors, including address, telephone and contact person.

1.05 SAMPLES

Submit samples as called for in the individual sections of the specifications. Samples shall be submitted at same time as shop drawings.

1.06 SCHEDULE

At Pre-Construction Conference Contractor shall submit the following:

1. Construction Schedule.

2. Shop Drawings Schedule.

3. Pollution Prevention Plan.

4. Approved Maintenance of Traffic Plan.

5. All Applicable Permits to Construct the Project.

1.07 APPROVALS

The Engineer must approve all submittals before they become usable documents.

1.08 TIME FOR SUBMITTALS

All submittals, i.e., shop drawings, samples, etc., to be made within fourteen (14) days from start date of project.

END OF SECTION

SECTION 01410

TESTING LABORATORY SERVICES

1.01 SELECTION AND PAYMENT

A. Engineer shall employ and pay for services of an independent testing laboratory to perform all passing tests. The cost of all passing tests will be charged back to the District as a direct reimbursable expense.

B. Employment of testing laboratory shall in no way relieve Contractor of obligation to perform work in accordance with requirements of Contract Documents.

1.02 PROJECT/CONSULTING ENGINEER'S SUBMITTALS

A. Prior to start of work, submit testing laboratory name, address, and telephone number and responsible officer to the Owner.

1.03 LABORATORY RESPONSIBILITIES

A. Samples to be taken by laboratory.

B. Provide qualified personnel at site. Cooperate with Engineer and Contractor in performance of services.

C. Perform specified inspection, sampling, and testing of Products in accordance with specified standards.

D. Ascertain compliance of materials and mixes with requirements of Contract Documents.

E. Promptly notify Engineer and Contractor of observed irregularities or non-conformance of work or products.

1.04 LABORATORY REPORTS

A. After each inspection and test, promptly submit two certified copies of laboratory report to both the Engineer, and to the Contractor.

B. Include:

1. Date issued,
2. Project title and number,
3. Name of inspector,
4. Date and time of sampling or inspection,
5. Identification of product and Specifications Section,
6. Location in the Project,
7. Type of inspection or test,
8. Date of test,
9. Results of tests,
10. Conformance with Contract Documents.

C. When requested by Engineer, provide interpretation of test results.

1.05 LIMITS ON TESTING LABORATORY AUTHORITY

A. Laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.

B. Laboratory may not approve or accept any portion of the Work.

C. Laboratory may not assume any duties of Contractor.

D. Laboratory has no authority to stop the Work.

1.06 CONTRACTOR RESPONSIBILITIES

A. Cooperate with laboratory personnel, and provide access to the work and to manufacturer's facilities.

B. Provide incidental labor and facilities to provide access to work to be tested, to obtain and handle samples at the site or at source of products to be tested, to facilitate tests and inspections, storage and curing of test samples.

C. Notify laboratory 24 hours prior to expected time for operations requiring inspection and testing services.

D. Pay costs of testing laboratory services for all failed tests or additional testing as required by the Project Engineer to verify conformance with the approved plans.

E. Contractor shall cooperate and coordinate with engineers testing lab.

1.07 SCHEDULE OF INSPECTIONS AND TESTS

A. See individual sections of the specifications for required inspection and testing.

END OF SECTION

PART 1 GENERAL

1.01 DESCRIPTION

A. Requirements: This section specifies minimum requirements. Temporary provisions for security and protection are the Contractor's sole responsibility, and are not limited to the minimums established by the requirements hereof. Except as otherwise indicated, the use of alternative security and protection methods of facilities, equivalent to those specified is the Contractor's option. The work of this section is defined to exclude required insurance coverage, performance/payment bonds, first aid requirements, general supervision, quality control, damage surveys, enclosure of completed work and stored materials, inspections and test of the work, instructions to Owner's personnel and similar recognized protection/security provisions, which are, nevertheless, specified in other parts of the contract documents, if required.

B. The types of security and protection facilities and services required for the entire project include, but are not limited to, the following:

1. Barricades, warning signs, lights.

2. Security enclosure and lockup of work.

3. Personnel security program.

4. Environmental protection.

1.02 QUALITY ASSURANCE

A. Regulations: Comply with governing regulations for the installation and operation of security and protection facilities, including the rules and recommendations of fire and building departments, police, rescue squad's, watchman services, and similar local organizations and companies.

1.03 JOB CONDITIONS

A. Scheduled Uses: Provide security and protection at the times first needed at the site; and maintain, expand, and modify the facilities as needed throughout the construction period.

B. Conditions of Use: Use security and protection facilities and services in a safe, sanitary, lawful, and publicly acceptable manner, which will not interfere unduly with performance of the work nor result in other deleterious effects.

1.04 MATERIALS OF SECURITY AND PROTECTION FACILITIES

A. General: For use in security and protection facilities, provide either new or used materials and equipment, which are in substantially undamaged and serviceable conditions. Provide types and quality levels which are recognized in the construction industry as suitable for the intended use in each application.

1.05 INSTALLATION OF SECURITY/PROTECTION FACILITIES

A. General: Use qualified tradesmen for the installation of security and protection facilities. Locate facilities where they will serve the total project construction work adequately, and result in a minimum interference with performance of the work. Relocate, modify and extend facilities as required during the course of the work, to properly accommodate the entire work of the project. Provide and maintain a reasonably neat and uniform appearance in security and protection facilities, acceptable to the Owner.

1.06 BARRICADES, WARNING SIGNS AND LIGHTS

A. General: Comply with recognized standards and code requirements for the erection of substantial and structurally adequate barricades wherever needed to prevent accidents and losses. Paint with appropriate colors, graphics and warning signs and inform personnel at the site, and the general public where exposure exists of the hazard being projected. Provide lighting where appropriate and needed for the recognition of the facility, including flashing red lights where appropriate.

B. Storage: Where materials and equipment must be temporally stored, prior to and during construction, and are of substantial value or attractive for possible theft, provide secure lockup and enforce strict discipline in connection with the timing of installation and release of materials, so that the opportunity for theft and vandalism is minimized.

1.08 ENVIRONMENTAL PROTECTION

A. General: Provide protection facilities, operate temporary facilities, conduct construction activities and enforce strict discipline for personnel at the project site in ways and by methods which comply with environmental protection regulations, and which will minimize the possibility that the air, waterways and subsoil might be contaminated or polluted, or that other undesirable and deleterious effects might result from performance of the work at the project site. Avoid the use of tools and equipment which produce harmful noise; and restrict the use of noise-making tools and equipment to the hours of use which will minimize noise complaints by persons or residents near the project.

1.09 TERMINATION AND REMOVAL

A. General: Maintain protection and security facilities and services in good operating condition through the time and use and until the completion and use of permanent work makes each temporary service unnecessary, or until the Owner's occupancy has replaced the need for the service or until its discontinuation has been otherwise authorized. Remove each facility promptly after its use had been terminated. Complete or restore permanent work which may have been delayed or otherwise affected by the temporary facility. Replace work which cannot be satisfactorily restored. Except as otherwise indicated, the materials and equipment of temporary security and protection facilities remain the property of the Contractor.

END OF SECTION

SECTION 01700

PROJECT CLOSE OUT

PART 1 GENERAL

1.01 DESCRIPTION

A. The items listed in this Section shall not be considered as a complete listing and shall in no way limit requirements that may be stated in other parts of the Contract Documents, but rather should be considered as an aid in preparing for final inspection and project close out.

1.02 BASIC REQUIREMENTS PRIOR TO SUBSTANTIAL COMPLETION

A. Punch List: The following items shall be completed prior to request for final inspection.

1. All general construction completed and the project components shall be clean.

2. All mechanical and electrical work substantially complete, fixtures in place, connected, cleaned and ready for use.

3. All electrical circuits shall be scheduled in panels, and all panels and disconnect switches properly labeled.

4. All painting shall be completed, all signs installed.

5. All surfaces, glass and metal work shall be cleaned.

6. All finish hardware and furniture shall be installed.

7. Project site shall be cleared of the Contractor's equipment and/or building supplies. All temporary structures and construction shall be removed.

8. All landscaping, sod, seed and mulch shall be planted and in place. (If applicable)

9. All signs and striping mounted, replaced and installed. (If applicable)

10. All utility and Health Department approvals obtained.

11. All disturbed areas re-graded and sodded or re-seeded to original condition.

B. Record Drawings: The project record drawings shall be submitted by the Contractor for all structural work, paving, drainage, water, wastewater and any other construction done under this contract. All record drawings will be submitted to the Owner in a digital format as specified in the NPBCID Engineering Standards Manual, and as required by local utility authority.

1.03 BASIC REQUIREMENTS PRIOR TO FINAL COMPLETION

A. All of the above items for Substantial Completion shall be complete; in addition, the punch list items noted at the time of substantial completion shall have been corrected and the work completed.

B. Warranties: Furnish all manufacturers' warranties and maintenance manuals for all equipment. For corrective work during the warranty period, submit a complete list of contact persons and phone numbers for General Contractor and all Subcontractors.

C. Guarantees and Bonds: Furnish the following written guarantees and bonds, in duplicate, signed by an authorized representative of manufacturer, supplier and/or subcontractor in accordance with the General Conditions, Supplementary General Conditions and the technical sections of the specifications.

D. Keys and Special Wrenches: All keys and special wrenches shall be tagged with the room number or with designed use and turned over to the Owner.

E. Maintenance Materials: Deliver to the Owner, prior to final completion of the work, maintenance materials (extra stock) as required in the technical sections of the specifications.

F. Manuals and Instructions:

1. Deliver to the Owner, prior to final completion of the work, three bound copies of maintenance and instruction manuals customarily supplied by manufacturers for items incorporated in this work and as set forth in the General Requirements for Mechanical and Electrical work.

2. Contractor and subcontractors shall provide hands on demonstrations and verbal instructions for the proper operation and maintenance of appliances, machines and equipment to the Owner or their designated representative.

3. Arrange, with the Owner, an appointment for specific time to give demonstrations and instructions.

G. Listing of Equipment: A tabular listing shall be presented to the Engineer prior to Final Completion of the project and prior to final payment, which shall include all plumbing, mechanical, electrical and special equipment by name, manufacturer, model number and serial number of each item provided.

H. Affidavits: Provide affidavits prior to final payment as follows (upon request by owner):

1. Affidavit to owner as provided in Section 00670.

END OF SECTION

SECTION 01020

MOBILIZATION

PART 1 - GENERAL

1.01 WORK INCLUDED

A. This section covers the work necessary for the movement of personnel, equipment, safety equipment, first aid supplies, sanitary facilities, supplies and incidentals, the establishment and removal of temporary offices and the maintaining of services (mail, trash, etc.), bonds, insurance, traffic control, survey layout, and site clean up.

B. The cost of bonds, insurance and any other pre-construction expenses necessary for the start of work, excluding the cost of materials is to be included in mobilization.

PART 2 – METHOD OF PAYMENT

A. When the Bid Form includes a separate pay item for mobilization, partial payments will be made in accordance with the following.

Percent of Contract Price Less Mobilization Earned	Allowable Percent of the Lump Sum Price of Mobilization
5	25
10	50
25	75
50	100

B. The standard retainage will be applied to these payments. Previous payments for mobilization and unpaid amounts on Allowances will not be considered in calculating the percent of the Contract Price earned. Payments will be made in stepped increments as shown and will not be interpolated between steps.

C. When the bid form does not include a separate item for mobilization, all work and incidental costs specified as being covered under mobilization are to be included for payment under the other items on the bid form and no separate payment will be made.

END OF SECTION

SECTION 01060

REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1. BUILDING CODE REGULATIONS:

All work shall be done in strict accordance with applicable requirements of the following codes:

A. Florida Building Code (FBC), Latest Edition.

B. Life Safety Code (NFPA), Latest Edition.

C. Pertinent NPBCID, Municipal, County and State Codes and Amendments.

D. ADA Chapter 11 (Florida Building Code)

1.2. INDUSTRY STANDARDS:

All work shall be done in strict accordance with the following Industry Standards:

A. Northern Palm Beach County Improvement District.

B. Building Code Requirements for reinforced concrete (ACI 318-83).

C. Manual of Standard Practice for detailing reinforced concrete structures (ACI-315).

D. Manual of Standard Practice for reinforced concrete construction by the CRSI.

E. Manual of Standard Practice for welding reinforcing steel, inserts & connections in reinforced concrete construction AWS D1.4-79 (AWS).

F. Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition.

END OF SECTION

SECTION 01155

REPORTING AND PAYMENTS

PART 1 - GENERAL

1.01 PROGRESS SCHEDULE AND REPORTS

GENERAL: Within 14 days after "Notice to Proceed (Commencement of Construction)", submit a comprehensive progress schedule indicating each significant category or unit of work to be performed at the site, properly sequenced and inter-meshed, and showing completion of the work on the date established for "Substantial Completion" of the work. Arrange schedule to indicate required sequencing of units, and to show time allowances for submittals, inspections and similar time margins. Carefully schedule the work to be performed so the required construction sequences and schedules will be maintained throughout the performance of the Contract.

1. Show critical submittal dates related to each time bar, or prepare separate coordinated listings of critical submittal dates.

2. Show double cost line immediately below date line in heading, shown in precalculated dollar-volume of completed work at end of each period scheduled.

3. Submit progress schedule for Owner's approval and compliance with Owner's requirements.

1.02 SUBMITTAL

Following initial revision of schedule after the Owner's and Engineer's review, print and distribute schedule to entities with a need-to-know responsibility, including copies to the Owner and Engineer. Post in temporary office space. As appropriate and not in excess of every 90 days, revise schedule at intervals matching payment request and redistribute. Provide copies required with payment requests.

1.03 PROGRESS MEETINGS

Conduct general progress and coordination meeting at least once each month, or as otherwise deemed appropriate attended by a representative of each primary entity engaged for performance of work. Record discussions, decisions, and any unusual events, accidents, etc. and distribute copies to those attending and others affected including the Owner and Engineer. Schedule meetings to coordinate with preparation of payment requests. A "Preconstruction Meeting" will be scheduled by the Engineer prior to "commencement of work."

1.04 SCHEDULE OF BID TABULATIONS

Prepare a bid tabulation showing breakdown of Contract Sum corresponding with payment request breakdown and progress schedule line items. Show dollar value and percent of total for each unit of work scheduled. Submit schedule of values to Owner and Engineer for review and approval prior to "Commencement of Work." Change orders or other value revisions (by Contractor) shall be added as separate line items.

1.05 PAYMENT REQUESTS

A. Prior to initial payment request, and as more stringently required by other sections of the specifications, submit:

1. List of principal subcontractors and suppliers.

2. Schedule of bid tabulations.

3. Copies of permits and similar start-up authorizations or certifications.

4. NPDES Pollution Prevention Plan Log.

5. Pumping Logs.

6. Construction progress as-builts, as applicable.

7. Update schedule reflecting work completed.

8. Required Testing Data.

B. Following issuance by Engineer of Certificate of Substantial Completion, Contractor may submit special payment request, provided the following have been completed.

1. Obtain permits, certificates of inspection and other approvals and releases by governing authorities, required for Owner's occupancy and use of project.

2. Submit warranties and similar documentation.

3. Submit maintenance manuals and provide instruction to Owner's operational/ maintenance personnel.

4. Complete final cleaning of the work.

5. Submit record documents in both electronic format and “hard” copy (record drawings).

6. Submit listing of work to be completed before final acceptance.

C. Following completion of the following requirements, final payment request may be submitted.

1. Complete work listed as incomplete at time of substantial completion, or otherwise assures Owner of subsequent completion of individual incomplete items.

2. Settle liens and other claims, or assure Owner of subsequent settlement.

3. Final Release of Liens from contractor, all subcontractors and all suppliers.

4. Submit proof of payment on fees, taxes or similar obligations.

5. Transfer operational, access, security and similar provisions to Owner; then remove temporary facilities, tools and similar items.

6. Completion of requirements specified in "Project Close Out" section (Section 01700).

7. All fees paid to NPBCID.

8. Obtain consent of surety for final payment and/or partial release of retainage.

END OF SECTION

SECTION 01205

PROCEDURES AND CONTROLS

PART 1 GENERAL

1.01 ADMINISTRATION AND SUPERVISION

Coordination: Coordinate various elements of the work and entities engaged to perform work; and coordinate the work with existing facilities/conditions, and with work by separate contractors (if any) and Owner.

1.02 INSPECTIONS AND TESTING

A. General: Provide required inspection and testing services specified to be by independent agencies, where not indicated specifically as Owner's responsibility (this provision supplements General Conditions). Neither inspection-and-test results nor failure thereof to disclose deficiencies relieves Contractor of responsibility to comply with requirements of the Contract Documents (Owner's and Contractor's), including taking and delivery of samples, patching work and similar assistance. Require engaged agencies to perform indicated testing and submit reports promptly; and to report significant observations having an important bearing on the work to the Engineer by the most expeditious means as possible.

B. Inspections by Installer: Require Installer of each major unit of work to inspect substrata and conditions for installation, and to report (in writing) unsatisfactory conditions. Correct unsatisfactory conditions before proceeding. Inspect each product immediately before installation, and do not install damaged or defective products, materials and equipment.

1.03 INSTALLATION, GENERAL

A. Comply with the manufacturer's instructions and recommendations to the extent where the printed information is more detailed or stringent than requirements contained directly in Contract Documents.

B. Timing: Install work during time and under condition which will ensure best possible results, coordinated with required inspection and testing.

C. Anchor work securely in place, properly located by measured line and level, organized for best possible uniformity, visual effect, operational efficiency, durability, and similar benefit to Owner's use. Isolate non-compatible materials from contact, sufficiently to prevent deterioration.

D. Mount individual units of work at industry-recognized mounting heights, if not otherwise indicated; refer uncertainties to Engineer before proceeding.

1.04 CLEANING AND PROTECTION

General: Clean each element of work at time of installation. Provide sufficient maintenance and protection during construction to ensure freedom from damage and deterioration at time of substantial completion.

END OF SECTION

SECTION 01310

SHOP DRAWINGS

PART 1 GENERAL

1.01 DESCRIPTION

A. Contractor shall submit shop drawings as described in General Conditions, each individual section, and this section of the specifications as required for Engineer's proper evaluation.

B. All costs arising from improper submittals will be borne by the Contractor.

1.02 SCHEDULING

A. Shop Drawings shall be submitted in sufficient time to cause no delay in general progress of the work. Provide schedule of shop drawings submittal at preconstruction conference.

B. Delay of submittals of shop drawings shall be no cause for extending contract time.

C. Allow a minimum of two weeks time (more time for complicated or extensive shop drawings) for Project Engineer's review. Allow for possibility of rejection and resubmittal.

1.03 APPROVALS

A. General Contractor shall review all shop drawings for compliance with Contract Documents. They shall be stamped with Contractor's stamp and show approval, initials of person approving, and date. No shop drawing will be reviewed by the Engineer without General Contractor's prior approval.

B. Shop drawings will be reviewed by Project Engineer. Take action described as follows:

1. Approved as submitted - Proceed with fabrication.

2. Approved as noted - Make changes as noted.

3. Revise/Resubmit - Resubmit with changes noted and/or required. Do not proceed with fabrication.

4. Not Approved - Resubmit in accordance with Contract Documents.

C. Approval of the shop drawings is merely an aid to the Contractor by the Engineer, checking only for conformance with design concept and compliance with Contract Documents and for quantities and dimension which shall be conformed and correlated at job site. Contractor shall remain responsible for fabrication processes and techniques of construction and for coordination of all trades.

D. Work shall not proceed until shop drawings have been approved.

E. Engineer or their representative may reject any or all items for installation for which there are no approved shop drawings.

PART 2 MATERIALS

2.01 DRAWINGS

A. Shop Drawings shall be blue line or black line prints and/or manufacturer's brochures.

B. Unless required otherwise by the Project Engineer and/or Owner, quantity shall be a minimum of five (7) sets of shop drawings or brochures. The Engineer will retain one (1) copy. Engineer will stamp all sets and return a minimum of three (3) sets to Contractor. Additional sets will be marked and stamped on request for the General Contractor.

2.02 ACCURACY

A. If shop drawings are unnecessarily inaccurate, Project Engineer will not correct all inaccuracies but will ask for resubmittal.

B. Shop drawings, which deviate from Contract Documents, shall be accompanied by a letter from subcontractor stating deviations from Contract Documents and reasons for appropriateness for use.

END OF SECTION

SECTION 01450

ENVIRONMENTAL PROTECTION

PART I GENERAL

1.01 SECTION INCLUDES:

A. Requirements for prevention of environmental pollution and damage as the result of construction operations under this contract.

1.02 SYSTEM DESCRIPTION:

A. Environmental pollution and damage are defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorable alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic, cultural, and/or historical purposes.

B. The control of environmental pollution and damage requires consideration of air, water, and land, and includes management of visual esthetics, noise, solid waste, radiant energy and radioactive materials, as well as other pollutants.

1.03 QUALITY ASSURANCE:

A. Establish and maintain quality control for environmental protection of all items set forth herein.

B. Record on daily quality control reports or attachments thereto, any problems in complying with laws, regulations and ordinances, and corrective actions taken.

C. Comply with all requirements under the terms and conditions set out in all permit(s) obtained by the Owner.

D. The Owner's Representative will notify the Contractor in writing of any observed noncompliance with the Federal, State, or local laws or regulations, permits and other elements of the Environmental Protection Plan.

1. After receipt of such notice, inform the Owner's Representative of proposed corrective action and take such action as may be approved.

2. Failure to comply promptly will be grounds for suspension or termination of the contract.

PART II PRODUCTS (Not Applicable)

PART III EXECUTION

3.01 PROTECTION OF ENVIRONMENTAL RESOURCES:

A. Protect the environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire period of this contract. Confine activities to areas defined by the drawings and specifications.

B. Disposal of Waste:

1. Dispose of solid wastes (excluding clearing debris), in containers which are emptied on a regular schedule. All handling and disposal shall be conducted to prevent contamination.

2. Transport all solid waste off property and dispose of it in compliance with Federal, State and local requirements for solid waste disposal.

3. Store chemical waste in corrosion resistant containers, removed from the work area and disposed of in accordance with Federal, State and local regulations.

4. Discarded materials other than those which can be included in the solid waste category shall be handled as directed by the Owner's Representative.

3.02 PROTECTION OF WATER RESOURCES:

A. Keep construction activities under surveillance, management and control to avoid pollution of surface and ground waters.

B. Monitor all water areas affected by construction activities.

C. Construction activities shall comply with the NPDES and Pollution Prevention Plan (PPP).

3.03 PROTECTION OF FISH AND WILDLIFE RESOURCES:

A. Keep construction activities under surveillance, management and control, to minimize interference with, disturbance to, and damage of fish and wildlife.

END OF SECTION

SECTION 01640

PRODUCTS AND SUBSTITUTIONS

PART I GENERAL

1.01 PRODUCTS' LIST

A. Within fourteen (14) days after commencement date of Contract, submit to Engineer two (2) copies of a complete list of all products proposed to be used, with name of the manufacturer and the installing subcontractor. Tabulate list by each specification section.

B. For products specified under reference standards, include with listing of each product:

1. Name and address of manufacturer.

2. Trade name.

3. Model or catalog designation.

4. Manufacturer's data:
   a. Performance and test data.
   b. Reference standards.

C. Contractor's Option: For products specified only by reference standards, select any product meeting that standard. For products specified by naming several products or manufacturers, select any one of the products or manufacturers names, which complies with the specifications.

1.02 SUBSTITUTIONS

A. For a period of 14 days after commencement date (Notice to Proceed) of Contract, Engineer may consider written requests from Contractor for substitution of approved products.

B. Conditions: Refer to Supplementary Conditions. Requests by Contractor will be considered when reasonable, timely, fully documented and qualifying under one or more of the following circumstances:

1. Related to an "or equal" or similar provision in contract documents.

2. Required product is not acceptable to governing authority, or determined to be non-compatible, or cannot be properly coordinated, warranted or insured, or has other recognized disability as certified by Contractor.

3. Substantial advantage is offered Owner after deducting offsetting disadvantages including delays, additional compensation to Engineer for redesign, investigation, evaluation, and other necessary services, and similar considerations.

C. Submit a separate request for each product, five (5) copies of each submittal, to include the following:

1. Complete data substantiating compliance of proposed substitution with Contract Documents.

    a. Product identification, including manufacturer name and address.

    b. Manufacturer's literature including product description, performance and test data, and reference standards.

    c. Samples where appropriate and/or requested.

    d. Name and address of two similar projects on which product was used successfully in a similar application.

    e. Detailed description of proposed construction method.

    f. Drawings illustrating construction method.

2. Itemized comparison of proposed substitution with product or method specified.

3. Date relating to changes in construction schedule; any change in the contract time; effect on other trades.

4. Accurate cost data on proposed substitution in comparison with product or method specified including a proposal of the net change in the contract sum.

D. The Engineer will be the sole judge of the acceptability of the proposed substitution.

E. In making request for substitution Contractor represents:

1. The Contractor has personally investigated proposed product or method, and determined that it is equal or superior in all respects to that specified.

2. The Contractor will provide the same warranties, guarantees, or bonds for the substitution as for the product or method specified herein.

3. The Contractor will coordinate the installation of an accepted substitution into the Work, and make such other changes as may be required to make the Work complete in all respects.

4. The Contractor waives the right to claims for additional costs related to the substitution which may subsequently become apparent and waives all rights to additional payment and time which may subsequently be necessitated, by failure of the substitution to perform as specified, and for the required Work to make corrections thereof.

5. Cost data is complete and includes all related costs under their contract.

F. Substitutions will not be considered if:

1. They are indicated or implied on shop drawings or project data submittals without formal request submitted in accordance with the Contract Documents.

2. Acceptance will require revision of the Contract Documents.

G. After date bids are reviewed, approval of substitutions shall be governed by change order procedure.

1.03 PROCEDURAL REQUIREMENTS

A. General Limitations: Where possible, provide entire required quantity of each generic product, material, or equipment from a single source; and, where not possible to do so, match separate products as closely as possible. To extend selection process is under Contractor's control, provide compatible products, materials, and equipment. Where available and complying with requirements, provide standard products which have been used previously and successfully in similar applications, and which are recommended by manufacturers for applications indicated.

END OF SECTION

Section 01720

Record Drawings

PART I GENERAL

1.01 Description

A. Engineer shall prepare the necessary Record Drawings as required by the Engineer and Government Agencies.

1.02 Basic Requirements

A. In the interest of timely detection of non-conforming work. Engineer shall promptly acquire record data and analyze data. Engineer shall promptly notify contractor of any non-conforming work.

B. Engineer shall furnish copies of record drawings to contractor on an as needed basis.

C. The Contractor shall provide 48 hours notice to Engineer for performance of record data collection. A 24-hour minimum notice shall be observed in cases of emergency with the approval of the Engineer and Northern Palm Beach County Improvement District (NPBCID). Abuse of the emergency clause shall constitute returning to the 48-hour limit for all further appointments.

D. A 12-hour notice shall be observed for cancellation of record data collection appointments. The minimum time shall be as follows:

Before 4 p.m. for next working day appointments.

E. Contractor shall provide access to the site in order for the survey crew to obtain the record information.

F. Contractor shall provide assistance to the survey crew for access to all improvements. No improvements shall be buried, backfilled, or in any way concealed prior to record data collection.

G. All pipes shall remain exposed until record information is obtained. Failure of the survey crew to show up at site is not a reason for backfilling a system. Emergency backfilling to be approved by the Engineer and NPBCID.

H. The use of “standpipes” of certain lengths as temporary markers to enable backfilling is not permissible unless the Engineer and NPBCID approve special conditions or arrangements. In the event stand pipe use is authorized, the Engineer and NPBCID shall be present at the time of backfilling and stand pipe installation.

I. A line item price for “Incidental Services for Record Data Allowance” to cover unexpected additional requests from outside agencies not included in the standard record document requirements is included in the bid form. This shall be used only for said contingency as directed by the Engineer.

1.03 Water Distribution Systems

In accordance with the utility having jurisdiction over the improvements.

1.04 Drainage and Storm Systems

A. Contractor to leave sand-and-debris – protector filter cloth out catch basins until data collection is performed.

B. Dry Retention areas shall not become repositories of garbage, debris, equipment staging after construction and data collection. A second collection will be required if cleaning up of a retention area, wet or dry, is indicated by the Engineer or NPBCID.

1.05 Sanitary Sewer Systems

A. In accordance with the utility having jurisdiction over the improvements.

1.06 Lakes

Final record data to be obtained once the lake level has reached control elevation.

End of Section

SECTION 12 SITEWORK SPECIFICATIONS

SECTION 02050

DEMOLITION

PART 1 - GENERAL

1.01 DESCRIPTION

Work Included

Demolition includes the complete wrecking of structures and the removal and disposal of demolished materials, as shown on the drawings and/or specified.

1.02 JOB CONDITIONS

A. Condition of Structures

The owner assumes no responsibility for the actual condition of structures to be demolished. Demolition drawings are provided for general information. The contractor shall field verify the conditions to be encountered in the work to be performed.

B. Salvage

Items of salvable value to the Owner shall be removed from the structure as the work progresses. Salvaged items must be transported to the locations as directed by the Owner.

C. Explosives

The use of explosives will not be permitted.

D. Traffic

Conduct demolition operations and the removal of debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.

E. Protection

Ensure the safe passage of persons around the area of demolition. Conduct operations to prevent injury to adjacent buildings, structures, other facilities, and persons.

F. Damages

Promptly repair damages caused to adjacent facilities by demolition operations at no cost to the Owner.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 DEMOLITION

A. Pollution Controls

1. Use water sprinkling, temporary enclosures, and other suitable methods to limit the amount of dust and dirt rising and scattering the air to the lowest practical level.

2. Comply with governing regulations pertaining to environmental protection.

3. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations, as directed by the Architect/Engineer. Return adjacent areas to condition existing prior to the start of the work.

4. Demolish concrete and masonry in small sections.

3.02 DISPOSAL OF DEMOLISHED MATERIALS

A. General

1. Remove from the site debris, rubbish, and other materials resulting from demolition operations.

2. Burning will not be permitted on the site unless authorized by the Land Owner, the Project Engineer, Fire Marshall and local municipal agencies. It is the Contractor's responsibility to obtain all permits.

3. Concrete from sidewalks, curbs, bulkhead caps etc. suitable for recycling will be transported to a licensed recycling business. The Contractor is to make a good faith effort to recycle all disposed and discarded items.

B. Removal

Transport materials removed from demolished structures and dispose of them offsite.

END OF SECTION

SECTION 02105

SITE CLEARING

PART 1 - GENERAL

1.01 SCOPE OF WORK

This section includes clearing of the site of incidental paving and curbs, debris, grass, trees, and other plant life in preparation for site or building excavation work as shown on the plans and as necessary to prepare the area for the proposed construction.

1.02 SECTION INCLUDES

A. Remove surface debris.

B. Remove paving, curbs, and fencing.

C. Clear site of plant life and grass.

D. Remove tree and shrubs.

E. Remove root system of trees and shrubs.

F. Protection of existing trees and shrubs.

1.03 REGULATORY REQUIREMENTS

A. Conform to all applicable federal, state, and local codes pertaining to the disposal of materials and debris.

B. Coordinate clearing work with utility companies.

PART 2 - PRODUCTS - (NOT APPLICABLE)

PART 3 - EXECUTION

3.01 PREPARATION

Verify that existing plant life and features designated to remain are tagged or identified.

3.02 PROTECTION

A. Protect from damage all utilities that are to remain.

B. Protect trees, plant growth, understory growth, environmentally sensitive areas, and features designated to remain as final landscaping.

C. Protect benchmarks and existing structures from damage or displacement.

D. Traffic: Conduct site clearing operations to ensure minimum interference with roads, streets, walks and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from authorities having jurisdiction.

3.03 CLEARING

A. Remove and dispose of all trees, stumps, shrubs, grass, roots, and other such protruding objects, and buildings, structures, appurtenances, existing pavement, and other facilities necessary to prepare the area for the proposed construction.

B. Strip topsoil to whatever depths encountered in a manner to prevent intermingling with underlying subsoil or other objectionable material.

C. All stumps, roots, and other debris shall be grubbed and removed a minimum of 12 inches below the surface of the ground or as necessary to remove roots ½" in diameter or larger.

D. Remove such items elsewhere on site or premises as specifically indicated. Relocate items as directed.

E. Remove and dispose of existing concrete pavement, concrete sidewalk, pavement, curb, and curb and gutter, where shown on plans or directed by the Engineer to be removed. (See Section 02050 - Part 3)

F. Fill depressions caused by clearing and grubbing operations with topsoil, unless further excavation or earthwork is indicated. Place fill material in horizontal layers not exceeding 12 inches loose depth and thoroughly compact to a density equal to adjacent original ground.

3.04 REMOVAL

A. Timber, stumps, brush, roots, rubbish, and other objectionable material resulting from clearing and grubbing shall be disposed of by the Contractor in locations and by methods approved by the Engineer. All disposal costs are the Contractor's responsibility.

B. Removal of Improvements: Remove existing above-grade and below-grade improvements necessary to permit construction and other work as indicated.

C. Abandonment or removal of certain underground pipe of conduits may be shown on mechanical or electrical drawings, and is included under work of those sections. Removal of abandoned underground piping or conduit interfering with construction is included under this section.

D. Hazardous Materials including asbestos pipe shall be removed and disposed of in accordance with all applicable codes and regulations.

END OF SECTION

SECTION 02100

SUBSURFACE INVESTIGATION

PART 1 - GENERAL

1.01 DESCRIPTION

The subsurface investigation attached as performed by (Name of Engineering Testing Company and Address) _____, is summarized with findings and recommendations in the attached report. This report is incorporated for the Contractors information in accordance with general conditions.

Data in the subsurface investigation report was used for the basis of the design and is available to the Contractor for information only. Conditions are not intended as representations or warranties of accuracy or continuity between soil borings. The Owner will not be responsible for interpretations or conclusions drawn from this data by Contractor.

Additional test borings and other exploratory operations may be performed by Contractor, at the Contractor's option; however, no change in the Contract Sum will be authorized for such additional exploration.

END OF SECTION

SECTION 02200

EARTHWORK, GENERAL

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. This section consists of furnishing all labor, materials, tools, equipment, and supplies necessary in connection with all earthwork.

B. Earthwork shall be interpreted to include clearing the work site, loosening, loading, removing, transporting and disposing of all wet or dry material necessary to be removed for the purpose of construction; the sheeting, bracing, drainage and backfilling of trenches and pits, and the grading and shaping of swales and berms around the finished structures.

C. Remove topsoil and stockpile for later use or remove from site, as applicable.

D. Excavate subsoil and remove unsuitable material from site. Save and stockpile for reuse soils of desirable quality for planting.

E. The extent of earthwork is as shown on the drawings and/or specified.

1.02 RELATED SECTIONS

A. Section 02105: Site Clearing.

B. Section 02225: Trenching, Backfilling and Compacting.

1.03 QUALITY ASSURANCE

A. Perform earthwork in compliance with applicable requirements of governing authorities having jurisdiction.

B. Protect existing benchmarks, monuments, and other reference points. If disturbed or destroyed, a registered land surveyor in the State of Florida is to replace it in its original condition and location.

C. Protect existing trees and other landscaping which are to remain. Replace at no cost to owner any landscaping which is damaged or destroyed.

D. Allow testing service to inspect and approve subgrades and fill layers before further construction work is performed.

1.04 SITE EXAMINATION

A. The data on indicated subsurface conditions are not intended as representations or warranties of the accuracy of continuity between soil borings. It is expressly understood that neither the Owner nor the Project Engineer will be responsible for interpretations or conclusions drawn there from by the Contractor. The data are made available for the convenience of the Contractor. Additional test borings and other exploratory operations may be made by the Contractor at no cost to the Owner or Project Engineer.

B. Contractors, before submitting bids, shall familiarize themselves as to location and nature of the work, character of equipment, and facilities needed for the performance of the work, general and local conditions prevailing at the site, and other matters which may in any way affect the work under contract.

C. Examine sources of information concerning ground water level, whether surface or subsurface. Each bidder is to draw their own conclusion concerning ground water levels and how water affects their own work.

D. The contractor must assume the risk of meeting quicksand, hard pan, boulders, clay rubbish, unforeseen obstacles, underground water mains, sewers, water service pipes, gas pipes, drain tile, hydrant leads, pavement, etc.

1.05 JOB CONDITIONS

A. Existing utilities:

1. Locate existing underground utilities in the areas of work before starting earthwork operations. Where utilities are to remain in place, provide adequate means of protection during earthwork operations.

2. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult the utility owner immediately for directions. Cooperate with the Owner, and public and private utility companies in keeping their respective services and facilities in operation. Repair damaged utilities to the satisfaction of the utility owner.

3. Do not interrupt existing utilities serving facilities occupied and used by the Owner or others, except when permitted in writing by the Project Engineer and then only after acceptable temporary utility services have been provided.

4. Demolish and completely remove from the site underground utilities indicated to be removed. Coordinate with local utility companies for shut-off of services if lines are active.

B. Use of Explosives: The use of explosive is not permitted.

C. Temporary Protection:

1. Barricade open excavations made as a part of earthwork operations and operate warning lights as required by authorities having jurisdiction, and applicable laws and regulations.

2. Protect structures, utilities, sidewalks, pavements, and other facilities from damages caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

3. Contractor shall take all precautions necessary to prevent soil erosion and provide all embankments with adequate slope protection.

PART 2 - PRODUCTS

2.01 SOIL MATERIALS

A. Backfill and Fill Materials:

1. Soil materials for use as backfill and fill shall be free of rock or gravel larger than two inches in any dimension, debris, waste, vegetable, and other deleterious matter.

2. Use excavated or borrow material that has been sampled, tested and certified as satisfactory soil material.

B. Subbase Material:

1. Properly graded mixture of natural and crushed gravel, crushed stone, crushed slag, natural or processed sand that will readily compact to the required density.

2. Use material complying with Section 120 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition.

C. Unsuitable materials:

1. Unsuitable materials as determined by the Project Engineer, such as peat, muck, roots, logs, debris, brush, sod, clay, loam or other similar materials, shall not be used.

2. Existing unsuitable materials as determined by the Project Engineer occurring beneath structure foundations shall be removed and replaced with compacted fill in accordance with the applicable compaction criteria.

PART 3 - EXECUTION

3.01 INSPECTION

A. Examine the areas and conditions under which earthwork is to be performed and notify the Project Engineer in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.

3.02 GENERAL

A. Excavation consists of the removal and disposal of materials encountered when establishing the required grade elevations. Where it is necessary to cut roots projecting into an excavation or to trim branches for equipment clearance, all severed root ends or cuts to branches over 1/2-inch diameter shall be treated with an asphalt base pruning paint. Backfill over exposed roots as soon as possible.

B. Accomplish earthwork in a manner that provides for the safety of the public and workers, as well as for the protection of property.

C. Conduct operations with minimum interference with road and other facilities.

D. Perform dewatering as required to achieve results indicated herein.

3.03 EXCAVATION CLASSIFICATIONS

A. The following classifications of excavation will be made when unanticipated rock excavation is encountered in the work. Do not perform such work until material to be excavated has been cross-sectioned and classified by the Project Engineer. Such excavation is unclassified and includes excavation to subgrade elevations indicated, regardless of character of materials and obstructions encountered.

1. Earth excavation includes the removal and disposal of pavements and other obstructions visible on the ground surface, underground structures and utilities indicated to be demolished and removed, material of any classification indicated in data on subsurface conditions, and all other materials encountered that are not classified as rock excavation or unauthorized excavation.

2. Rock excavation consists of the removal and disposal of materials encountered that cannot be excavated with a 3/4 cubic yard capacity power shovel without drilling and blasting, or continuous use of a ripper or other special equipment, except such materials that are classified as earth excavation.

3. Typical of materials classified as rock are boulders 1/2 cu. yd. or more in volume, solid rock, rock in ledges, and rock-hard cementitious aggregate deposits.

4. Intermittent drilling that may be performed to increase production and is not necessary to permit excavation of the material encountered will be classified as earth excavation.

5. Rock payment lines are limited to the following:

   a. Two feet outside of concrete work for which forms are required, except footings,

   b. One foot outside the perimeters of footings,

c. In pipe trenches, 6" below invert elevation of pipe and 2 feet wider than the inside diameter of pipe, but not less than 3-foot minimum trench width.

d. Neat outside dimensions of concrete work where no forms are required, and

e. Under slabs on grade, 6" below bottoms of concrete slab.

B. Unauthorized excavation consists of removal of materials beyond indicated elevations or dimensions without the specific direction of the Project Engineer. Replace unauthorized excavation by backfilling and compacting as specified for authorized excavations of the same classification, unless otherwise directed by the Project Engineer.

3.04 ADDITIONAL EXCAVATION

A. When excavation has reached required subgrade elevations, notify the Engineer who will make an inspection of conditions.

B. If unsuitable materials are encountered at the required subgrade elevations, carry excavations deeper and replace the excavated material and its replacement as directed by the Project Engineer.

3.05 DEWATERING

A. Prevent surface water and subsurface or groundwater from flowing into excavations, and flooding the project site and surrounding area. Do not allow water to accumulate in excavations. Remove water from excavations to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to the stability of subgrades and foundations. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey the water away from the site.

B. Convey water removed from excavations and rain water to collecting or run-off areas. Do not use trench excavations for site utilities as temporary drainage ditches.

C. The Contractor shall do all pumping and bailing, build all drains, and do all other work necessary to keep the excavation clear of groundwater, sewage, storm water or other water during the progress of the work and until the finished work is safe from injury. All water pumped or drained from the work shall be disposed of in a satisfactory manner without damage to adjacent property or to other work under construction, and in accordance with Pollution Prevention Plan (PPP).

D. The Contractors shall comply with all requirements of South Florida Water Management District Dewatering Permits and shall provide pump logs and Pollution Prevention Plan (PPP) reports to the Project Engineer as applicable.

3.06 CLEARING AND GRUBBING

A. Within limits of areas designated for grading and site construction work, clear, grub, and remove trees, brush, stumps, wood debris, and other deleterious materials not required to remain as part of the finished work.

B. Remove grass, plants, vegetation, and organic material from same area.

3.07 EXCAVATION

A. Excavate after stripping, clearing, and grubbing has been completed. Remove unsuitable materials encountered.

B. Excavation shall be as required for the construction to the lines and grades shown on the contract drawings.

C. Stability of Excavations:

1. Slope the sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible either because of space restrictions or stability of material excavated.

2. Maintain sides and slopes of excavations in a safe condition until completion of backfilling.

D. Material Storage:

1. Stockpile excavated materials classified as satisfactory soil material where directed, until required for backfill or fill. Place, grade and shape stockpiles for proper drainage.

2. Locate and retain fill materials away from edges of excavations.

3. Dispose of excess soil material and waste materials as needed or directed by Engineer.

3.08 EXCAVATION FOR PAVEMENTS

Cut the surface under pavements to comply with cross-sections, elevations and grades as shown.

3.09 EXCAVATION FOR TRENCHES

A. Dig trenches to the uniform width required for the particular item to be installed, sufficiently wide to provide ample working room. Excavate trenches to the depth indicated or required. Carry the depth of trenches for piping to establish the indicated flow lines and invert elevations. Trench excavation shall comply with the “Florida Trench Safety Act” (90-96, Laws of Florida).

B. Where rock is encountered, carry the excavation 6" below the required elevation and backfill with a 6" layer of crushed stone or gravel prior to installing pipe.

C. Grade bottoms of trenches as indicated, notching under pipe bells to provide solid bearing for the entire body of the pipe.

D. Do not backfill trenches until tests and inspections have been made and backfilling authorized by the Project Engineer. Use care in backfilling to avoid damage or displacement of pipe systems.

3.10 BACKFILL AND FILL

A. Ground Surface Preparation:

1. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break-up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface.

2. When the existing ground surface has a density less than that specified under "Compaction" for the particular area classification, break-up the ground surface, pulverize, moisture-condition to the optimum moisture content, and compact to the required depth and percentage of maximum density.

B. Placement and Compaction:

1. Place backfill and fill materials in layers not more than 12" in loose depth for material compacted by heavy compaction equipment, and not more than 4" loose depth for material compaction by hand-operated equipment.

2. Before compaction, moisten or aerate each layer as necessary to provide the optimum moisture content of the soil material. Compact each layer to the required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy.

3. Backfill excavations as promptly as the work permits, but not until completion of inspection, testing, approval, and recording location of underground utilities, as required.

3.11 COMPACTION

A. General:

1. Control soil compaction during construction, providing the minimum percentage of density specified for each area classification.

B. Percentage of Maximum Density Requirements:

1. Miscellaneous slabs: Compact top 12" of subgrade and each layer of backfill or fill material at a minimum of 98% maximum density (optimum moisture) per ASSHTO T-180.

2. Lawn Areas: Compact each layer of backfill or fill material at a minimum of 90% maximum density (optimum moisture) per ASSHTO T-180.

C. Moisture Control:

1. Where the subgrade or layer of soil materials must be moisture conditioned before compaction, uniformly apply water to the surface of subgrade, or layer of soil material, to prevent free water appearing on the surface during or subsequent to compaction operations.

2. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing or pulverizing, until the moisture content is reduced to a satisfactory value.

3.12 GRADING

A. General: Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surfaces within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades.

B. Grading outside building lines: Grade areas adjacent to building lines to drain away from structures and to prevent ponding.

3.13 FIELD QUALITY CONTROL

A. Quality Control Testing During Construction:

1. Testing service must inspect and approve subgrades and fill layers before further construction work is performed thereon. Secure representative samples of the fill material and determine the Standard Density and required moisture content to be maintained by the Moisture-Density Relation Test ASTM D-1557.

2. Make in-place soil density test during compaction operations in accordance with AASHTO T-180. Make at least one field density test of the subgrade for every 2,000 sq. ft. of paved area, but in no case less than three tests. In each compacted fill layer, make one field density test for every 2,000 sq. ft. of overlaying paved area, but in no case less than three tests.

3. If, in the opinion of the Project Engineer, based on reports of the testing service and inspection, the subgrade or fills which have been placed are below the specified density, additional compaction and testing will be required until satisfactory results are obtained.

3.14 MAINTENANCE

A. Protection of Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris.

1. Repair and re-establish grades in settled, eroded and rutted areas to specified tolerances.

B. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape, and compact to required density prior to further construction.

C. Settling: Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, lawn or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality and condition of surface or finish to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.15 DISPOSAL OF EXCESS AND WASTE MATERIALS

A. Removal to designated areas on Owner's property: Transport excess excavated material classified as satisfactory soil material to designated soil storage areas on the Owner's property. Stockpile soil or spread across the ground, as directed.

B. Removal from Owner's property: Remove waste materials, including excavated material classified as unsatisfactory soil material, trash and debris, and dispose of it legally.

END OF SECTION

SECTION 02225

TRENCHING, BACKFILLING AND COMPACTING

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. The extent of trenching, backfilling and compacting is shown on the drawings and/or specified. This section includes furnishing equipment, labor and material, and performing all operations necessary and incidental to perform the required work.

1.02 RELATED SECTIONS

A. Section 02105: Site Clearing

B. Section 02200: Earthwork, General

1.03 APPLICABLE CODES, STANDARDS AND SPECIFICATIONS

A. Work under this section shall be in accordance with the following codes and standards:

1. American Association of State Highway and Transportation (AASHTO).

2. Florida Department of Transportation "Standard Specifications for Road and Bridge Construction" Latest Edition.

3. “Trench Safety Act” (90-96, Laws of FL).

PART 2 - PRODUCTS

A. No material shall be used for backfill which contains stones having dimensions in excess of two inches, debris, vegetation, deleterious material, or earth with an excessive void content.

B. All material used for backfill shall be of quality acceptable to the Project Engineer and shall be free from large lumps, wood, or other extraneous material.

PART 3 - EXECUTION

3.01 CLEARING OF THE SITE

A. The site of the work shall be cleared of all trees, shrubs, paving and objectionable material which interferes with the execution of the proposed work. Trees and shrubs which will not interfere with construction shall be protected from damage. Clearing shall be considered as an incidental item of excavation.

3.02 EXCAVATION

A. GENERAL:

1. Perform excavation described of whatever substance encountered to the dimensions and depths specified and/or shown on the drawings or as necessary. Excavation shall be unclassified regardless of material encountered. Undercutting will not be permitted, except when ordered by the Project Engineer. Material suitable for backfill shall be stockpiled near the site. Rock or other material undesirable for backfill shall be spoiled outside the area in a neat manner, and/or as directed by the Project Engineer.

2. Where it is necessary to trim branches for equipment clearance, all severed root ends or cuts to branches over 1/2-inch diameter shall be treated with an asphalt base pruning paint and backfill over exposed roots as soon as possible.

3. Except in rock-and water-bearing earth, mechanical excavation shall be limited to four inches above the elevation of the pipe invert. All additional excavation shall be made manually. Excavation in rock shall be made by a method approved by the Project Engineer.

4. The Contractor shall dispose of the excavated materials not required or suitable for backfill as specified in Section 02200, and shall perform such grading as may be necessary to prevent surface water from flowing into the trenches. Haul or disposal of material will be the responsibility of the Contractor. Sheeting and shoring shall be installed as may be necessary for the protection of the work, for the preservation of adjoining property and structures or for the safety of the employees. Unless otherwise indicated, excavation shall be by open cut.

5. The Contractor shall provide adequate equipment for the removal of storm or subsurface waters which may accumulate in the excavated areas. If subsurface water is encountered, the Contractor shall utilize approved means to adequately dewater the excavation so that it will be dry for working and pipe lying. A wellpoint system or other approved dewatering method shall be utilized if necessary to maintain the excavation in a dry condition for preparation of the trench bottom and for pipe laying. All existing improvements such as pavements, conduits, poles, pipes and other structures shall be carefully supported and fully protected from injury. They shall be restored without compensation in the event damage occurs.

6. All muck below storm drain pipes and structures shall be completely removed to the width of the trenches at the pipe and to the depths where sand or other acceptable material is encountered. After removal of all muck, the trench shall be filled to the invert of the pipe with select fill placed and tamped in eight-inch layers. Each layer shall be compacted to not less than 98% of the maximum density as determined by AASHTO Method T-180.

B. ROCK: Where encountered in the trench bed, rock shall be excavated to a depth of 1/4 of the pipe diameter but in no case less than 8" below the bottom of the pipe. All undercut trench excavation shall be backfilled and tamped with materials as specified in the following paragraphs under Unstable Subgrade.

C. UNSTABLE SUBGRADE

1. In the event that unsuitable materials are encountered at or below the excavation depth specified and/or shown on the drawings, the Project Engineer shall be notified. Such material shall be removed and replaced with suitable material. Methods and materials used for replacement shall be one of the following as directed by the Project Engineer in writing.

   a. Suitable earth or sand compacted in the trench.

   b. Gravel or crushed lime rock, compacted in the trench.

   c. Existing materials stabilized after removal and then replaced and compacted in the trench.

2. The Project Engineer shall determine the methods and materials to be used, based upon the condition of the excavation, the pipe or structure to be supported, and the availability and character of stabilizing materials.

D. TRENCHES

1. Keep the pipe laying operation as close to the excavation operation as possible during the prosecution of the work.

2. Pipe trenches shall be excavated to a depth that will insure proper cover and installation for all types of pipe. Trenches shall be only of sufficient width to provide a free working space on each side of the pipe. To prevent excess pressure on the pipe, the maximum width of trench at the top of the pipe and at the bottom of the trench shall not be greater than two feet more than the greatest exterior diameter of the pipe. To protect the pipelines from unusual stresses, all work shall be done in open trenches. Excavation shall be made for bells of all pipes and of sufficient depth to permit access to the joint for construction and inspection. In no case will the bells be used to support the body of the pipe.

3. In order to avoid existing utilities or culverts, at times it may be necessary for the pipe to be installed deeper than the minimum cover specified in the preceding paragraph. At such time the Contractor will not be allowed extra compensation for the additional excavation involved whether or not the utilities or culverts were indicated on the plans.

4. In case excavation has been made deeper than necessary, a layer of concrete, fine gravel or other material satisfactory to the Project Engineer shall be placed, at no extra cost, to secure a firm foundation for the lower third of each pipe. Where possible, excavated material shall be placed so it will not interfere with public travel. Bridging for vehicles or pedestrians shall be provided to afford necessary access to public or private premises. Bridging shall be considered as part of the excavation operation and shall be supplied at no additional cost to the Owner.

E. REMOVAL OF UNSTABLE MATERIAL: All pipe and other structures shall be provided with a stable foundation; any material which, by reason of kind or condition, is not or cannot be made stable by drainage or compaction shall be removed or replaced. All unstable material below the grade line of the pipe shall be

removed for the full width of the trench and replaced with suitable selected material.

F. SHEETING AND SHORING: The Contractor shall provide all trench and structural bracing, sheeting or shoring necessary to construct and protect the excavation, existing utilities, structures and private property of all types and as required for the safety of the employees. Sheeting shall be removed or cut off by the Contractor during backfilling operations as approved by the Project Engineer.

G. BEDDING: The bedding surface for the pipe shall provide a firm foundation of uniform density throughout the entire length of the pipe. The pipe shall be carefully bedded in a soil foundation that has been accurately shaped and rounded to conform to the lowest 1/4 of the outside circular portion of the pipe for its entire length, and when necessary, shall be tamped to secure uniform, firm support. Where bell and spigot pipe is used, the bell holes shall be deep enough to ensure that the bell does not bear on the bottom of the excavation, and shall not be excessively wide in the longitudinal direction of the culvert or storm drain.

3.03 DRAINAGE

A. Grading shall be controlled in the vicinity of excavations so that the surface of the ground will be properly sloped to prevent water from running into trenches or other excavated areas. Any water which accumulates in the excavations shall be removed promptly by well point or by other means satisfactory to the Project Engineer in such a manner as to not create a nuisance to adjacent property or public thoroughfare. Trenches shall be kept dry while pipe is being laid. Bridging of dewatering pipe shall be provided where necessary. Pumps and engines for well point systems shall be operated with mufflers, at a minimum noise level suitable to a residential area. The Contractor will not be allowed to discharge water into the storm drainage system, environmentally sensitive lands, adjacent private property and public thoroughfares without written approval from the Project Engineer and Property Owner. Approval will be subject to the condition that the storm sewer be returned to its original conditions.

B. The Contractor is responsible for carrying the water to the nearest ditch or body of water and for obtaining the necessary permission to use same. The Contractor shall be financially responsible for any nuisance created due to carrying off water from their drainage system.

3.04 INSTALLATION OF PIPE

A. GENERAL: Piping and appurtenances for storm sewers shall be of the type and material called for in these specifications or as shown on the drawings. All pipe, fittings, jointing materials, grates, manholes frames and covers, and other appurtenances and materials shall be new material and if not specifically described herein shall be of the best quality and entirely suitable for the service intended. All such materials shall be approved by the Project Engineer prior to installation.

B. HANDLING AND STORING: Pipe shall be protected during shipping, storage and handling against impact shocks, free fall or other damage. Any damaged pipe shall be removed from the job site immediately.

C. PIPE LAYING:

1. The trench shall be prepared as specified herein and each pipe section shall be installed in strict conformance to the line and grade shown on the drawings.

2. As pipe laying progresses, the interior of the pipe shall be cleaned of all dirt and superfluous materials. The Contractor shall at all times take whatever measures are necessary to prevent the entrance of dirt and other foreign matter into the system. In the event that it is necessary to clean the pipe before final acceptance, the Contractor shall do so without additional compensation.

D. OPEN TRENCH: No more than 200 linear feet, or the length of trench between consecutive drainage structures, shall be left open behind pipe laying unless directed in writing by the Project Engineer. All trenches and excavations shall be backfilled immediately after all pipe and joints have been inspected and approved by the Project Engineer. In no instance shall any trench be left open for more than 24 hours before backfilling.

3.05 BACKFILLING

A. TRENCHES

1. Trenches shall be backfilled immediately after the pipe is laid unless other protection for the pipeline is provided. Clean earth, sand, crushed limerock or other material approved by the Project Engineer shall be used for backfill. Backfill materials shall be selected, deposited and compacted so as to eliminate the possibility of lateral displacement of the pipe.

2. Under Pipe: Trenches shall be backfilled from the bottom of the trench to the centerline of the pipe with predominantly sandy material free from rocks or stones, placed in six inch layers and compacted to 100 percent of the maximum density, as determined by AASHTO T-180 using the appropriate equipment, under and on each side of the pipe and between the pipe and wall of trench. Backfilling material shall be deposited in the trench for its full width on each side of the pipe and appurtenances.

3. Over Pipe: From the centerline of the pipe, fittings and appurtenances, to an elevation two feet above the top of the pipe, the trench shall be backfilled by hand or by approved mechanical methods. The backfill material shall be as specified in 1, above, and shall be consolidated by use of tampers.

4. The remainder of the backfill shall be compacted by means of mechanical tampers. The backfill shall be deposited and compacted in 12" layers when mechanical tampers are used to achieve compaction. Compaction shall be carried by AASHTO Method T-180 for the entire depth.

5. In areas to be paved, the entire depth of backfill shall be deposited in 12" layers and compacted by mechanical tampers to achieve a density of at least 98% of the maximum density as determined by AASHTO Method T-180 for the entire depth.

6. Density tests for determination of the specified compaction shall be made by a testing laboratory approved by the Project Engineer. The location of the tests shall be as selected by the Project Engineer.

3.06 PAVEMENT RESTORATION

A. The pavement replacement of all paved areas damaged during the construction of the off-site utilities shall be done by the Contractor. The pavement replacement shall be completed according to the replacement detail shown in the detail drawings.

3.07 SIDEWALK REPLACEMENT

A. Concrete sidewalk removal and replacement required in the construction of this work shall be done by the Contractor. Reasonable care shall be exercised in removing sidewalk and the Contractor shall dispose of this material as directed by the Project Engineer. Sidewalks shall be replaced on a compacted subgrade and shall be 4 inches thickness in residential areas and 6 inch thickness in the right-of-way within commercial area.

B. Where any portion of the sidewalk is removed due to construction, the full width of the sidewalk shall be replaced.

3.08 DRIVEWAY REMOVAL AND REPLACEMENT

A. Driveways and off-street parking areas that are paved with concrete or asphalt and cut by the construction shall have a minimum of 8 inches of base for all driveways. The thickness of base from the property back and in all easements shall be equal to the thickness of the original base. The base course for asphalt driveways shall be compacted to a minimum of 98 percent of the maximum density as determined a AASHTO Method T-180. Lime rock for pavement base shall conform to the Florida Department of Transportation Standard Specifications.

B. The wearing surface for all driveways within right of ways shall be 1 inch of Type “S-III” asphalt.

C. Concrete for driveways shall be 3,000 psi. The concrete shall be a minimum of 4" thick from the property line back and 6" thick from the property line to the edge of pavement. The concrete driveway replacement shall be no less than the thickness removed, but not less than that specified above. Concrete shall be cut with a saw.

D. All driveways other than paved or concrete within right-of-way shall be restored with a minimum depth of 8 inches of shell, lime rock or gravel. Driveways shall be replaced with like materials. The cost of driveway replacement shall be included in the cost of the various applicable items of work as no separate payment will be made, unless a separate bid item is provided.

3.09 RESTORATION OF SURFACE IMPROVEMENTS

A. All surface improvements on public or private property which have been damaged or removed during excavation or any of the other Contractor's operation or other various construction activities shall be restored to conditions equal to or better than conditions existing prior to beginning work. These surface improvements include but are not limited to grass plots, sod, shrubbery, ornamental trees, signs, fences, mailboxes, and other improvements on public or private property.

B. Road shoulders, alleys and driveways of shell, lime rock, stabilized soil or gravel where disturbed shall be restored with like materials as removed. There shall be no mixing of unlike materials. The disturbed area shall be replaced with the appropriate materials to a minimum depth to restore it to a condition equal to or better than conditions existing prior to beginning work.

C. Roadways other than paved streets where disturbed shall be replaced with like materials to a minimum compacted thickness of 12”. There shall be no mixing of unlike materials. These roadways shall be compacted to a minimum of 98% of the maximum density as determined by AASHTO Method T-180. No additional cost for replacement of roadways other than paved streets will be allowed by the Owner.

3.10 FINE GRADING

A. Finished areas around structures shall be graded smooth and hand raked and shall meet the elevations and contours as existed prior to beginning construction or as shown on the drawings. Lumber, earth clods, rocks and other undesirable materials shall be removed from the site.

3.11 DISPOSAL OF MATERIALS

A. Such portions of the excavated materials as needed shall be used for backfilling and graded about the completed work to the elevations shown on the drawings or as directed. Excavated material in excess of the quantity required for this purpose shall be disposed of by the Contractor at a legal disposal site. Disposal cost is Contractors responsibility, or as designated in the contract documents.

3.12 MAINTENANCE OF AREA UNDER CONSTRUCTION

A. As specified in this section, the Contractor shall keep the pipe laying operation as close to the excavation operation as possible during the execution of the work. The Contractor shall maintain their construction activity for each main pipeline installation crew to one location not exceeding 800 feet in length. Construction activity within this 800 foot section shall include all phases of the pipe laying operations including dewatering equipment, excavation, pipe laying, backfilling of trenches, and the completion of the restored base construction as specified.

B. The Contractor shall perform their construction activities within the following time periods. Within 10 days after acceptance of the trench backfill, the base shall be restored including priming and/or sealing and shall be open for traffic. The asphalt wearing surface shall be replaced no earlier than 3 weeks after completion of the

base course with complete surface restoration including grassing, sodding and all concrete work within 6 weeks after completion of restoration of the base course.

3.13 STABILIZED SHOULDER RESTORATION

A. The following repair procedure applies to all roads. All construction, maintenance of traffic, materials, and restoration of surface improvements shall comply with the specifications required by the Florida Department of Transportation Standard Specifications.

B. It is the intent of these specifications to provide a stabilized shoulder to a thickness and width indicated on the drawings and having a minimum bearing value of LBR-40.

C. Compaction shall be by rolling with a combination of steel wheel and rubber tire rollers until a minimum density of 98 percent of the maximum density is reached as tested under AASHTO Method T-180. Compaction and finishing shall be in accord with the Department of Transportation Standard Specifications. All passing density tests for stabilization will be paid for by the Owner and all failing density tests for stabilization will be paid for by the Contractor.

3.14 DETOUR FACILITIES

Contractor shall comply with the approved Maintenance of Traffic Plan.

END OF SECTION

SECTION 02227

TRENCH SAFETY REQUIREMENTS

PART 1 GENERAL

1.01 INTENT

A. The purpose and intent is to provide for increased worker safety by requiring compliance with sufficient standards for trench safety ("Florida Trench Safety Act", 90-96, Laws of FL, effective October 1, 1990).

1.02 CONTRACT BID ITEMS

A. The contract bid submitted by the contractor who will perform such excavation shall include:

1. A reference to the trench safety standards that will be in effect during the period of construction of the project.

2. Written assurance by the contractor performing the trench excavation that such contractor will comply with the applicable trench safety standards.

3. A separate item identifying the cost of compliance with the applicable trench safety standards.

1.03 CONTRACTOR'S RESPONSIBILITIES

A. A contractor performing trench excavation shall:

1. As a minimum, comply with the excavation safety standards which are applicable.

2. Adhere to any special shoring requirements, if any, of the state or other political subdivision which may be applicable to such a Project.

3. If any geotechnical information is available from the owner, the contractor, or otherwise, the contractor performing trench excavation shall consider this information in the contractor's design of the trench safety system which it will employ on the project. This paragraph shall not require the owner to obtain geotechnical information.

END OF SECTION

SECTION 02231

AGGREGATE BASE COURSE

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. The work covered by this section of the specifications consists of furnishing all plant, labor, materials, equipment and supplies and performing all operations in connection with the construction of the paving base, in strict accordance with this section of the specifications and the applicable drawings, and subject to the terms and conditions of the contract.

PART 2 - PRODUCTS

2.01 MATERIALS

A. The base shall consist of either lime rock, Grade No. 2, or local shell rock, constructed in courses as shown, all as specified in Sections 200, 250, 911 and 913 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.

2.02 REFERENCE STANDARD

A. The following standards listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the reference thereto.

1. Florida Department of Transportation (FDOT) "Standard Specifications for Road and Bridge Construction", latest edition.

   Where reference is made herein to the FDOT specifications, delete the section referencing the basis of payment and other pay measurement requirements.

2. American Association of State Highway and Transportation Officials (AASHTO) Standard:

PART 3 - EXECUTION

3.01 COMPACTING AND FINISHING BASE

A. In accordance with Section 200-6 of the FDOT Specifications.

3.02 DENSITY TESTS:

A. In accordance with Section 200-6 and 200-7 of the FDOT Specifications.

3.03 CORRECTION OF DEFECTS

A. If at any time the subgrade material should become mixed with the base course material, the contractor shall, without additional compensation, dig out and remove the mixture, reshape and compact the subgrade and replace the materials removed with clean base material, which shall be shaped and compacted as specified above.

B. If cracks or checks appear in the base, either before or after priming, which in the opinion of the Engineer would impair the structural efficiency of the base course, the Contractor shall remove such cracks or checks by rescarifying, reshaping, adding base material where necessary and recompacting.

3.04 MEASUREMENT AND PAYMENT

A. Where separate payment for the paving base is provided, the quantities to be paid for under this item shall be the actual in place measurements between the neat lines indicated for base width. The quantities of paving base, determined as provided above, shall be paid for at the contract unit prices for this item, completed and accepted. Where payment for the paving base is grouped with the prime coat, tack coat, and wearing surface, the quantities to be paid for under this item shall be the actual measurements of completed wearing surface between the neat lines indicated on the construction drawings, regardless of the base width indicated. The quantities determined as provided above, shall be paid for at the contract unit prices for this item, complete and accepted. Payment shall not be based on FDOT payment methods.

END OF SECTION

SECTION 02368

PRESTRESSED CONCRETE PILES

PART 1 - GENERAL

1.01 DESCRIPTION

Work Included

1. Furnishing all plant, labor, materials, tools, equipment and all else required to perform all operations necessary to furnish and install prestressed concrete piles. Included are drilling of holes (for piles) through compacted fill, pile driving, cutting-off, splicing of piling, and of test loading piles. All work shall be performed in strict accordance with Specifications and applicable drawings and subject to terms and conditions of the Contract.

1.02 APPLICABLE STANDARDS

The following specifications, standards and publications are part of this specification:

* Florida Department of Transportation, Standard Specifications for Road and Bridge Construction, Latest Edition.

* State of Florida Department of Transportation Structures, Bridge Design Standards, Latest Edition, Structures Standards, Index No. 3400, Drawing 1 of 1, Titled "12, 14 and 18 Prestressed Concrete Piles".

* AASHTO Standard Specifications for Highway Bridges, Latest Edition.

1.03 QUALITY ASSURANCE

A. Avoidance of excessive stresses during handling and installing of the piles.

B. Prestressed Concrete Piles

1. The Contractor shall prepare the design and shop drawings of the prestressed concrete piles for the specified design load. The design shall be prepared by a Professional Engineer licensed in the State of Florida. The design shall conform to (1) the standards contained in Florida Department of Transportation, Standard Specifications for Road and Construction, Latest Edition, Section 455-PILING (2) State of Florida Department of Transportation, Structures Standards, Latest Edition, Drawings 3400 and 10289F and (3) AASHTO - Standard Specifications for Highway Bridges, Latest Edition, Division 1 - Design, Section 4 - FOUNDATIONS, paragraph 4.3.14 - Prestressed Concrete Piles.

2. The stresses during the piles installation shall be investigated by wave equation. The analyses shall be made for the driving equipment that the Contractor proposes to use. The effects of the cushion and driving block shall be included in the analysis.

B. Quality assurance of Pile installation

The Contractor shall employ a State of Florida Licensed Professional Engineer with a minimum of five years experience in pile foundations (referred to hereinafter as the Pile Engineer), who will witness the placing and driving of each pile. The Pile Engineer shall not be a regular employee of the Contractor and during the pile driving period shall be retained by the Contractor only for the purpose of supervision and inspection of the pile driving operations. No driving of any pile shall be performed unless witnessed in its entirety by the Pile Engineer.

C. Pile Load Testing

1. The piles shall be tested for axial compressive load in accordance with procedures specified in Florida Department of Transportation Standard Specification for Road and Bridge Construction, Latest Edition, Section 455.7.5.2 Test Loads except that the test load shall be applied by hydraulic jack acting against weighted box or platform. Jacking against anchored reaction piles will not be permitted.

2. Pile testing procedures shall be approved by the Project Engineer.

3. The Contractor shall engage a licensed Professional Engineer experienced in pile load testing to direct their pile load testing operations and report the results of load testing to the Project Engineer.

D. Allowable Tolerance

1. Piles shall be driven with a variation of not more than 1/4 inch per foot from the vertical line indicated, with a maximum variation of the butt from the position shown on the plans of not more than 3 inches. Final elevation of cut-off shall be as shown on the plans plus or minus 1/2 inch.

1.04 SUBMITTALS

A. Design Computations and Shop Drawings

1. Design computations (including wave equation analysis) and shop drawings for fabrication of piling shall be submitted. Pile load testing procedure and load settlement curve shall be submitted.

B. Certificates

1. The Contractor shall submit certificates and will report attesting to compliance with the material specifications and properties referred to herein.

C. Description of Equipment and Procedures

1. Proposed drilling and pile driving equipment.

2. Load testing procedures and equipment.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Concrete, reinforcing steel and prestressing tendons for piles shall conform to the requirements of the Florida Department of Transportation Standard Specifications for Road Bridge Construction, Latest Edition, Section 455.2 Materials:

1. Concrete: Class III, 5000 psi.

2. Reinforcing Steel: Grade 40 or 60.

3. Spiral Ties: Grade 40 reinforcing steel.

4. Pre-stressing Tendons: Florida Department of Transportation Standard Specifications Section 933, Accessory Materials for Pre-stressed Concretes and other applicable sections.

2.02 EQUIPMENT

The diameter of drills and the equipment for pile driving shall conform to the requirements of Florida Department of Transportation Standard Specifications for Road and Bridge Construction.

PART 3 - EXECUTION

A. Each pile shall be driven to such penetration that the resultant resistance to driving prevents the pile from advancing, as determined by the formula in the DOT Specs 455-3.3 and load test.

B. The Pile Engineer shall make a written report, bearing his/her seal, of the placing and driving of each pile. The report shall contain all pertinent data for each pile including: pile number, date, time and weather. The drill diameter, length of the drilled hole (from the top of the fill or the bottom of the footing to the natural ground level, hammer weight, model and speed during entire driving interval; all pile dimensions, pile deviation, if any, from the designed location; number and location of splice and type (description) of splice; whether and to what extent water jets were used; remarks and observations and a complete record of driving plus the average penetration (blows per inch) of the pile during the last foot of driving.

C. The requirements of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction shall apply, except that no piles

shall be driven before the adjoining embankment fill (and surcharging of the fill where specified) has been completed.

D. The test piles shall be located at the locations shown on the drawings or designated by the Project Engineer.

E. The complete log of each test pile loading and unloading shall be kept with settlements, time intervals, and all other pertinent information recorded. A load-settlement curve shall be plotted and submitted.

END OF SECTION

SECTION 02513

TYPE "S" ASPHALTIC CONCRETE PAVEMENT

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Work Included: Type "S" Asphaltic Concrete Paving (prime coat, tack coat, and surface course).

B. Extent of asphaltic concrete paving work is shown on the drawings.

C. Aggregate base course is specified in Section 02231.

1.02 REFERENCE STANDARDS

A. The following standards listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the reference thereto:

1. Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction, latest edition.

a. Where reference is made herein to the FDOT Specifications delete there from the basis of payment and other pay measurement requirements.

1.03 DESIGN REQUIREMENTS

A. Require tests of asphaltic concrete mix to comply with the requirements of Sections 331 and 332 of the FDOT Standard Specifications for Road and Bridge Construction, Latest Edition. Use of untested asphaltic concrete mix shall not be permitted.

1.04 SUBMITTALS

A. Submit the following for approval:

1. Asphaltic concrete design mix in accordance with Section 331.4 of the FDOT Specifications.

1.05 QUALITY ASSURANCE

A. Perform tests in accordance with Section 331.5 of the FDOT Standards except for Method of Payment.

B. Perform work in accordance with contract document in a neat and accurate manner.

C. Mixing Plant: Conform to FDOT Standards.

D. Obtain materials from same source throughout.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Primer: Provide cut-back asphalt, RC-70 or RC-250 meeting the requirements of Section 916-3 and Section 300 of the FDOT Specifications.

B. Tack Coat: Emulsified RS-2 asphalt tack coat per Section 300 FDOT Specifications.

C. Asphalt Concrete: Asphaltic concrete mix in accordance with the requirements of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition, Section 331 and/or 332 using type and thickness as shown on the plans.

D. Base Course: Provide aggregate base courses in accordance with requirements of Section 02231 "Aggregate Base Course" and Section 911 and 913 of the FDOT Specifications.

E. Subgrade: Construct subgrade in accordance with Sections 160, 161, 162 and 171 of the FDOT Specifications.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that subgrade and base are dry and ready to support paving and imposed loads.

B. Verify gradients and elevations of base are correct.

C. Do not begin paving installation without Project Engineer acceptance of the substrate.

3.02 PREPARATION

A. PRIMER:

1. Apply prime coat in accordance with manufacturer’s published instructions and FDOT Specifications, Section 300.

B. TACK COAT

1. Apply tack coat in accordance with manufacturer's published instructions and FDOT Specifications, Section 300.

3.03 PLACING ASPHALT PAVEMENT

A. Place in accordance with Section 330-9 of the FDOT Specifications.

B. Place each course to compacted thickness as shown on the plans.

C. Compact pavement by rolling in accordance with Section 330-10 of the FDOT Specifications.

D. Prepare joints in accordance with Section 330-12 of the FDOT Specifications.

E. Protect finished surface in accordance with Section 330-14 of the FDOT Specification.

3.04 TESTING

A. Asphaltic Concrete: Provide certified laboratory tests as specified by FDOT Section 331 and 332.

3.05 PROTECTION

A. Immediately after placement, protect pavement from mechanical or chemical damage for as long as required until accepted by Project Engineer.

END OF SECTION

SECTION 02514

MILLING OF EXISTING ASPHALT PAVEMENT

PART 1 - GENERAL

1.01 DESCRIPTION

A. WORK INCLUDED

The work specified in this Section consists of removing existing asphaltic concrete pavement by milling to improve the ride-ability of the finished pavement, to lower the finished grade adjacent to existing or proposed curb prior to resurfacing, or to completely remove existing pavement.

B. The finish grade, after resurfacing, will be specified in the plans.

C. Unless otherwise specified, the milled material becomes the property of the Contractor.

1.02 REFERENCE

A. Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.

PART 2 - EQUIPMENT

2.01 DESCRIPTION

A. In accordance with Section 327-2 (Equipment) FDOT Specifications.

PART 3 - EXECUTION

3.01 CONSTRUCTION

A. In accordance with Section 327-3 (Construction) FDOT Specifications.

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4.01 FINAL SURFACE CONDITIONS

A. In accordance with Section 327-4 (Milled Surface) FDOT Specifications.

5.01 BASIS OF PAYMENT

A. In accordance with Section 327-5 (Method of Payment) FDOT Specifications.

B. The quantity shall be paid for at the contract unit price for the milling existing asphalt pavement in accordance with the bid documents.

C. The price and payment will be full compensation for all work specified in this Section, including hauling off and stockpiling or otherwise disposing of the milled material.

END OF SECTION

SECTION 02515

CONCRETE CURBS, HEADERS, SIDEWALKS AND DRIVEWAYS

PART 1 - GENERAL

1.01 SCOPE OF WORK

The work covered by this section of the specifications consists of furnishing all plant, labor, equipment, appliances and materials and performing all operations in connection with the construction of concrete curbs, headers, sidewalks, driveways, complete and in place, in strict accordance with these specifications and the applicable drawings and subject to the terms and conditions of this contract.

1.02 RELATED SECTIONS

Section 03010: Concrete

1.03 REFERENCES

A. ACI 304 "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete".

B. ACI 318 "Building Code Requirements for Reinforced Concrete".

C. ACI 347 "Recommended Practice for Concrete Formwork".

D. Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.

1.04 SUBMITTALS

Submit copies of laboratory test reports for concrete materials and mix design test as specified.

PART 2 - PRODUCTS

2.01 MATERIALS

A. The materials used shall conform to the requirements specified in the sections of these specifications for the several items which constitute the complete structure.

B. Concrete shall be minimum of 3,000 PSI concrete.

PART 3 - EXECUTION

3.01 FORMS

A. Construct forms complying with ACI 347.

B. Construction and dummy joints shall be placed where indicated and may be either formed or sawed.

3.02 CONSTRUCTION

A. Excavation shall be made to the required depth; and the sub-grade or base upon which the curb or header is placed shall be properly compacted as specified.

B. Finish the edges as indicated on the drawing. Block out the work in 20' maximum length sections and install each section in one continuous operation so that the curb and gutter will be monolithic.

3.03 CONCRETE PLACEMENT

The concrete shall be placed in the forms to the depth specified, in layers four to five inches thick, and tamped and spaded until mortar entirely covers its surface. The top of the structure shall be floated smooth and the edges rounded to the radius shown.

3.04 EXPANSION JOINTS

A. Curb and Gutters

Provide expansion joints with filler as specified hereinbefore, on 20 ft. maximum centers, and at other locations indicated.

B. Driveway Aprons

Provide expansion joints with filler as specified hereinbefore, at each end of all aprons where they abut the curb and gutter.

C. Concrete Sidewalk

Provide expansion joints with filler as specified hereinbefore, where sidewalk abuts curb and gutter, driveway and other locations.

3.05 FINISH OF FORMED SURFACES

The curb top, face and header top shall be given a surface finish while the concrete is still green. A brush finish will be required unless noted otherwise; however, additional finishing may be required in areas considered too rough or with minor defects.

3.06 CURBING AND PROTECTION

When completed, the curb, or headers shall be covered with suitable material and kept moist for a period of three (3) days or longer if necessary, and shall be protected in a satisfactory manner from damage by the elements or other cause until acceptance of the work.

3.07 REMOVAL OF FORMS

A. The forms may be removed twenty-four hours after the concrete has been placed, and minor defects then filled with mortar composed of one part of Portland Cement and two parts of fine aggregate. All rejected curb, or header shall be removed and replaced without additional compensation.

B. After concrete has set sufficiently, the spaces in front and back of the curb shall be refilled to the required elevation with suitable material, which shall be placed and thoroughly compacted in layers of not more than six inches in thickness.

END OF SECTION

SECTION 02618

PAVEMENT MARKING

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Work Included:

1. Thermoplastic and paints for traffic striping and markings
2. Signs
3. Arrows
4. Letters
5. Raised retro-reflective paint markers (RPM's)

B. Related Work:

1. Asphaltic Concrete Pavement
2. Surface Coating
3. Fire Lanes

1.02 REFERENCE

Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Latest Edition.

1.03 SUBMITTALS

Submit paint tests, as indicated in Sections 706, 710, 711, and 971 of FDOT Specifications and as applicable to hereinafter-indicated material.

1.04 QUALITY ASSURANCE

A. Perform work in accordance with the Contract Documents in a neat and accurate manner.

B. Equipment shall be of a type and design which will readily obtain the required uniformity of application of the pavement markings both as to thickness of coating and as to alignment.

1.05 STANDARDS

Where reference is made herein to the FDOT Specifications delete therefrom the basis of payment and other pay measurement requirements.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Traffic Paint and Thermoplastic Traffic Markings: In accord with requirements as indicated in Sections 971-12 and 711-2 of the FDOT Specifications.

B. Paint Color: White and yellow. As shown on the drawings. All handicapped related markings are to be painted blue.

PART 3 - EXECUTION

3.01 APPLICATION

A. In accordance with Sections 706, 710 and 711 of the FDOT Specifications.

3.02 PROTECTION OF PAINTED MARKINGS

A. Protection of Stripes: Newly-painted stripes, or other markings, shall be protected until the paint is sufficiently dry to permit vehicles to cross the marking without damage from the tires. While the stripes are being painted all traffic shall be routed to the opposite side of the painting operations and the newly-painted stripe.

B. Protection of Traffic: Warning signs shall be set up before the beginning of each operation and extra signs shall be kept well ahead of the painting equipment. The painting equipment shall be so operated that traffic may pass safely. Warning signs are to be placed only where operations are in progress and are to be relocated as often as is necessary.

C. Protective Devices: Erect adequate warning signs, and take necessary precautions for the protection of the wet paint and the safety of the public. Cones, rubber "Z" guards, or similar protective devices, shall be placed along the newly-painted stripe to prevent traffic from crossing the wet paint. Any such devices used shall be of a type that will not cause damage to vehicular traffic in the event that these objects are accidentally passed over.

D. Repair of damaged Areas: Any portions of the stripes damaged by passing traffic or from any other cause shall be repainted at no cost to the Owner.

3.03 CORRECTIVE MEASURES

A. Painting markings which fail to meet the guidelines, including the permissible tolerances and the appearance requirements, or are marred or damaged by traffic or from any other cause shall be corrected at no cost to the Owner. Drips and spattered paint shall be removed. Whenever it is necessary to remove paint it shall be done by means which will not damage the underlying surface of the pavement. When necessary to correct a deviation which exceeds the permissible tolerance in alignment, that portion of the stripe affected shall be removed and repainted in accordance with these guidelines.

C. Corrective Devices: Misalignment, defective surfaces, and the like, shall be corrected by sandblasting or by any other type of mechanical device which will effectively remove the paint without damage to the pavement surface.

END OF SECTION

SECTION 02720

STORM DRAINAGE

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Storm drainage piping, fittings, structures, and accessories.

B. The extent of the storm drainage system is shown on the drawings.

1.02 RELATED SECTIONS

A. Section 02105 - Site Clearing.

B. Section 02200 - Earthwork, General.

C. Section 02225 - Trenching, Backfilling, and Compacting.

1.03 REFERENCES

A. ANSI/ASTM A74 - Cast Iron Soil Pipe and Fittings.

B. ANSI/ASTM C14 - Concrete Sewer, Storm Drain, and Culvert Pipe.

C. ANSI/ASTM C76 - Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.

D. ASTM F405, F667, D2321; AASHTO M294, M252 - High density polyethylene, corrugated, smooth wall culvert (ADS N-12 or approved equal).

E. FDOT Standard Specifications for Road and Bridge Construction, Latest Edition, Sections 125, 430, 941, 942, 943, 945 and 948.2.

1.04 REGULATORY REQUIREMENTS

A. Conform to all applicable federal, state, and local codes for materials and installation of the work of this section.

1.05 SUBMITTALS

A. Submit shop drawings for pipe, catch basins, manholes, and accessories.

1.06 PROJECT RECORD DOCUMENTS

A. Accurately record location of pipe runs, connections, catch basins, manholes, cleanouts, and invert elevations. These shall be submitted to the Project Engineer on reproducible media, signed by a Professional Land Surveyor and also electronically per Section III, E., 2.

PART 2 - PRODUCTS

2.01 DRAINAGE PIPE MATERIALS

A. Reinforced concrete pipe: ANSI/ASTM C76, CLASS III, with wall type B, mesh reinforcement, unless otherwise indicated on the drawings.

B. Corrugated aluminum pipe: AASHTO M196.

C. Corrugated steel pipe and pipe arch: AASHTO M 36.

D. Corrugated steel pipe and arch.

E. High density polyethylene, corrugated, smooth wall storm sewer culvert.

F. All pipe, fittings, jointing, materials, grates, manhole frames and covers, and other appurtenances shall be new material; and, if not specifically described in these specifications, shall be of the best quality and entirely suitable for the service intended. The Project Engineer prior to installation shall approve all such material.

2.02 MANHOLES AND CATCH BASINS

A. Provide precast reinforced concrete manholes and catch basins, unless otherwise indicated on the drawings.

2.03 FILL MATERIAL

A. Fill material shall meet the requirements of Sections 02200 and 02225.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that excavation base is ready to receive work, and excavations, dimensions, and elevations are as indicated on the drawings.

3.02 PREPARATION

A. Hand trim excavations to required elevations. Correct over excavation with fill material of lean concrete or other approved material.

B. Remove large stones or other hard matter which could damage pipe or impede consistent backfilling or compaction.

C. Excavation of trenches, preparation, preparation of trench bottoms, backfilling, and other earthwork in connection with installation of storm sewers shall be in accordance with the other applicable sections of these specifications.

D. Inspect piping before installation to detect apparent defects. Mark defective materials with white paint and promptly remove from site.

3.03 INSTALLATION - PIPE

A. Pipe shall be protected during storage and handling against impact shocks and free fall. Pipe shall be kept clean at all times.

B. Lay pipe to slope gradients noted on the drawings with a maximum variation from true slope of 1/8 inch in 10 feet.

C. All pipe shall be carefully installed starting at the lowest end, with hubs upgrade and tongue end fully entered into the hub.

D. Any pipe that is not in true alignment or which shows any settlement after installment shall be taken up and re-installed without additional compensation. All pipe joints irrespective of pipe material are to be wrapped using filter fabric. The filter fabric is to extend a minimum of 1.0' beyond the joint and to be wrapped completely around the pipe with a minimum of one (1) foot of overlap.

E. Place plugs in ends of uncompleted conduit at end of day or whenever work stops.

F. SPECIFIC REQUIREMENTS FOR CONCRETE PIPE:

1. When rubber gaskets are used the pipe joints shall meet the requirement of the latest edition of FDOT Standard Specifications for Road and Bridge Construction Section 941-1.5. The gasket and the surface of the pipe joint, including the gasket recess, shall be clean and free from grit, dirt, and other foreign matter at the time the joints are made.

2. Pipe shall be set firmly, according to the lines and grade; and preparatory to making joints for concrete pipe, all surfaces of the portion of the pipe to be jointed shall be thoroughly cleaned. The pipe shall be laid with the groove upstream. A shallow excavation shall be made underneath the pipe at the joint.

3. Immediately prior to installation, the entire interior of the groove of the pipe already installed, and the rubber gasket of the pipe to be installed shall be coated with an approved vegetable soap lubricant. The groove and spigot ends shall be cleaned prior to application of the lubricant. The pipe shall then be aligned with the previously installed pipe and the joint pulled together. The joint shall be pulled by the use of interior or exterior pull jacks or winches, anchored by suitable means. The choice of method and type of equipment will depend on trench conditions, type and size of pipe, and its ability to properly seat the gasket. If, while making the joint, the gasket becomes loose and can be seen through the exterior joint recess, when the joint is pulled up to within one inch (1") of closure, the pipe shall be removed and the joint remade to the satisfaction of the Engineer.

3.04 INSTALLATION - CATCH BASINS, MANHOLES

A. Form bottom of excavation clean and smooth to correct elevation.

B. Form and place cast-in-place base pad, with provisions for storm sewer pipe end sections.

C. The contractor may substitute precast inlets, manholes, and junction boxes in lieu of cast-in place units unless otherwise shown on the plans.

D. Establish elevations and pipe inverts for inlets and outlets as indicated.

E. Mount lid and frame level in grout, secured to top cone and set to elevation indicated.

F. Where unsuitable material for foundations is encountered, the contractor shall excavate the unsuitable material and backfill with suitable material prior to constructing or setting inlets, manholes, and junction boxes.

G. Rap all joints with filter fabric per plan, irrespective of pipe material.

3.05 BACKFILLING

A. Backfilling operations will closely follow the laying, jointing, and bedding of pipe and are to be in accordance with the applicable divisions of Section 02225.

3.06 TESTS

A. After completion of construction of the storm drainage system, or sections thereof, the Project Engineer may make tests of the completed work for correct grade and alignment. When completed, the interior surface of the piping shall conform accurately to the grade and alignment fixed by the Project Engineer.

B. It is the intent of these specifications to secure construction of a storm drainage system with a minimum amount of leakage.

3.07 RESPONSIBILITY

A. The contractor shall be held strictly responsible for all parts of the work that bear the load of the backfill. If structural failures in the storm drainage piping or appurtenances develop within one (1) year from the date of final acceptance of the work, the contractor shall be required to replace all faulty material at his full expense. To this end, the contractor is advised to purchase material under a guarantee from the manufacturer, guaranteeing proper service under conditions which are established by the drawings, specifications and local conditions.

END OF SECTION

SECTION 02831

CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Fence framework, fabric, and accessories.

B. Excavation for post bases.

C. Manual gates and related hardware.

D. Concrete anchorage for posts.

1.02 SCOPE OF WORK

A. Provide permanent fence, gates, footings, and accessories as shown on the drawings.

1.03 REFERENCES

A. ASTM A121-86 - Zinc Coated Steel barbed Wire.

B. ASTM A123-89 – Zinc (Hot-Dipped Galvanized) Coatings on Iron and Steel Products.

C. ASTM A307-91 - Carbon Steel Bolts and Studs, 60000 psi Tensile.

D. ASTM A392-91 – Zinc-Coated Steel Chain-Link Fence Fabric.

E. ASTM A563-91 – Carbon and Alloy Steep Nuts.

F. ASTM A569-91 – Steel, Carbon (0.15 Maximum, Percent), Hot-Rolled Sheet and Strip Commercial Quality.

G. ASTM B6-87 – Zinc.

H. ASTM C94-91 – Ready-Mixed Concrete.

I. ASTM F552-88 – Definitions of Terms Relating to Chain Link Fencing.

J. ASTM F567-91 – Practice for Installation of Chain-Link Fence.

K. ASTM F626-91 – Fence Fittings.

L. ASTM F668-91 – Poly (Vinyl Chloride) (PVC) – Coated Steel Chain-Link Fence Fabric.

M. ASTM F900-84 – Industrial and Commercial Swing Gates.

N. ASTM A120 – Pipe, Steel, Black and Hot-Dipped Zinc Coated (Galvanized) Welded and Seamless

1.04 SUBMITTALS

A. Manufacturer's catalog cuts with printed specifications.

B. Shop Drawings with complete details of fence and gate construction, fence height, post spacing, dimensions and unit weights of framework, and concrete footing details.

1.5 QUALITY ASSURANCE

A. Manufacturer: Company specializing in commercial quality chain link fencing with a minimum of two (2) years experience.

B. Installation: ANSI/ASTM F567 and manufacturer's instructions.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Framing (Steel): ASTM A569, Schedule 40 steel pipe, one piece without joints.
B. Fabric Wire (Steel): ASTM A392.

C. Bolts: ASTM A307, Grade A.

D. Nuts: ASTM A563, Grade A.

E. Concrete: ASTM C94; Normal Portland Cement, 2000 psi minimum compressive strength at 28 days, 3 inch slump, 1 inch nominal sized coarse aggregate.

2.02 COMPONENTS

A. Line Posts: 2.38 inch outside diameter.

B. Corner and End Posts: 2.88 inch outside diameter.

C. Gate Posts: 2.88 inch outside diameter.

D. Top and Brace Rails: 1.66 inch outside diameter, plain end, sleeve coupled.

E. Gate Frame: 2.38 inch outside diameter.

F. Fabric: 2 inch diamond mesh interwoven wire, 9 gage steel core, top selvage twisted tight, bottom selvage knuckle end closed.

G. Brace and Tension Bands: 1/8 inch thick steel.

H. Tension Bar: 1/4 inch thick steel.

I. Tension Wire: 6 gage steel core, single strand.

J. Tie Wire: 13 gage core, aluminum alloy steel.

K. Caps: Malleable iron, galvanized, sized to post diameter, stainless steel set screw retainer.

2.03 ACCESSORIES

A. Extension Arms: Cast steel to accommodate 3 strands of barbed wire, single arm sloped to 45 degrees. Withstand a weight of 200 pounds.

B. Gate Hardware: Fork latch for single swing gate, center gate stop and drop rod for double swing gates, keeper for double swing gates, hardware for padlock, and two 180 degree hinges per leaf.

2.03 FINISHES

A. Zinc Coating

1. Components and Framing: ASTM A123
2. Fabric: ASTM A392, 1.2 oz./sq. ft.
3. Hardware: ASTM A153
4. Extension Arms: ASTM A153

B. Vinyl Coating

1. General: Factory coated (unless noted otherwise), fusion bonded PVC.
2. Components and Framing: 10-14 mils vinyl coating over galvanizing per ASTM A123.
3. Fabric: 7-12 mils vinyl coating per ASTM F668, Class 2B over 0.3 oz./sq. ft. of galvanizing per ASTM A641.
4. Hardware: Spray paint hardware in the field to match vinyl coating.
5. Extension Arms: 10-14 mils vinyl coating over galvanizing per ASTM A153.

PART 3 - EXECUTION

3.01 SITE PREPARATION

A. Before installing chain-link fence, all necessary site clearing and grading is to be completed.

B. Where the clearing and grubbing for the Project does not include the area occupied by the fence, clearing is to be done to a width of at least two feet on each side of the fence line, except that the Project Engineer may direct that valuable trees to be left in place. Do not extend clearing beyond the right-of-way.

3.02 INSTALLATION

A. General

1. Install framework, fabric, accessories, and gates in accordance with ASTM F567.
2. Install all fasteners with the nuts on the inside face of the fence.

B. Posts

1. Space at intervals not exceeding 10 feet on center. Measure the interval parallel to the grade of the fence and in the line of fence from center to center of the post.
2. Set line posts in concrete foundations of not less than 10 inches in diameter +2 feet deep below grade.
3. Set terminal and gate posts in concrete foundations not less than 18 inches in diameter and/or 4 feet deep below grade.
4. Recess foundations 1/8" to 1/4" below finished grade. Slope concrete away from the posts to provide for proper water drainage.
5. Install corner posts whenever the fence alignment changes 10 degrees or more.
6. Fence height shall be 4'-0" unless otherwise shown on the Drawings.

C. Terminal Post Bracing

1. Brace each gate and terminal post to adjacent line post with horizontal center rail.
2. Braces are not required on fences 6 feet high or less.

D. Top Rail

1. Provide a top rail so that a continuous brace from end to end of each stretch of fence is formed.
2. Support at each line post.
3. Securely fasten to terminal posts and join with sleeves or coupling to allow for expansion and contraction.
4. Top rail to be installed straight and level. Significant grade changes shall be discussed with superintendent prior to installation of fence.

E. Fabric

1. Place chain-link fabric on the outside of the area to be enclosed or as directed by the Project Engineer.
2. Stretch fabric between terminal posts or at intervals of 100 feet maximum, whichever is less.
3. Position bottom of fabric at grade.
4. Fasten fabric to line posts at intervals not exceeding 15 inches and to top rail at intervals not exceeding 24 inches with wire ties.
5. Provide bands or clips of adequate strength to attach fabric to tension bars at all corners, end, and gateposts at intervals not exceeding 12 inches.
6. Do not place fabric until posts have been permanently positioned and concrete foundations have attained adequate strength.
7. Fabric to be 9 Gauge 2" x 2".

F. Gates

1. Provide 2-12’ swing gates at each location shown on the Drawings (total opening width 24’).
2. Install gates with self-closing mechanism. Install three hinges per leaf, latch catches, drop bolt, boot bolts and sockets, torsion spring retainer, retainer and locking clamp.

G. Electrical Grounds

1. Wherever a power line passes over the fence, a ground must be installed directly below the point of crossing. The ground rod is to consist of an aluminum or galvanized rod, with connection of similar metal if required, or of other appropriate material, eight feet in length and at least 5/8 inch in diameter. Drive the road vertically until the tip of the road is approximately six inches below the ground surface. Use a No. 6 conductor to connect the road and all fence elements. Connect the conductor to each fence element and the ground rod by means of electrical clamps which will prevent corrosion.

3.03 PROJECT CLEAN UP

A. At completion of the fence work, remove from the site and premises, debris, and surplus material, not wanted by the Owner. Remove construction chain link and wood fence and footings from site and restore all damaged areas to original condition.

END OF SECTION

SECTION 02840

GUARDRAIL

PART 1 - GENERAL

1.01 DESCRIPTION

Work Included: The work specified in this section consists of the construction of metal guardrail on posts of concrete, timber, steel, or aluminum, as specified. The work shall be constructed in accordance with these specifications and in conformity with the lines, grades, dimensions, and notes shown on the plans.

PART 2 - PRODUCTS

2.01 GUARDRAIL

The materials used shall conform to the standard requirements specified in Section 536 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, (Latest Edition).

PART 3 - EXECUTION

3.01 INSTALLATION

All work shall be constructed as detailed on the plans and shall conform to the standard construction methods outlined in Section 536 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, (Latest Edition).

END OF SECTION

SECTION 02930

RIPRAP

PART 1 - GENERAL

1.01 DESCRIPTION

The work shall consist of the placing of all riprap, including filter layer or bedding where indicated on the Drawings.

1.02 WORK INCLUDED

The Contractor shall furnish all materials, equipment, tools and labor necessary for the placing of the riprap including filter layer or bedding as shown on the Drawings.

1.03 REFERENCE SPECIFICATION

Florida Department of Transportation "Standard Specifications for Road and Bridge Construction", latest edition, Section 530 “Riprap”.

PART 2 - PRODUCTS

2.01 GENERAL

See section 530-2.3 of the reference specifications.

PART 3 - EXECUTION

3.01 GENERAL

Construction methods shall be in accordance with the details shown on all the Drawings, and the reference specifications, Section 530-3.3 FDOT Standard Specifications.

PART 4 - MEASUREMENT AND PAYMENT

4.01 GENERAL

Measurement and payment shall be in accordance with the reference specification. Cost to be included in the lineal foot price of the bulkhead.

END OF SECTION

SECTION 02938

SODDING

PART 1 - GENERAL

1.01 SCOPE OF WORK

The work covered by these specifications consist of furnishing all plant, labor, equipment, appliances and materials, and performing all operations in connection with furnishing and placing grass sod, all complete and in place, in strict accordance with these specifications, the engineering drawings, and subject to the terms and conditions of the contract.

PART 2 - PRODUCTS

2.01 GENERAL

Materials and construction methods in connection with furnishing and placing sod shall be in accordance with the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition, Section 575, except as herein specified. Sod shall be Centipede or Bahia grass, unless otherwise noted on the construction drawings.

PART 3 - EXECUTION

3.01 INSPECTION

A. Verify that prepared soil base is ready to receive the work of this section.

B. Beginning of installation means acceptance of existing site conditions.

3.02 PREPARATION OF SUBSOIL

Prepare subsoil to eliminate uneven areas and low spots. Maintain lines, levels, profiles, and contours. Make changes in grade gradual. Blend slopes into level areas.

3.03 GRADING AND SODDING SWALES

Where sodding is indicated within drainage swales, the soil shall be evenly graded to a line two inches below the elevation indicated on the plans. The sodding, having a minimum thickness of two inches, shall then be placed and firmly embedded by light tamping, bringing the contour of the swale to the elevation shown on the plans.

3.04 LAYING SOD

A. Moisten prepared surface immediately prior to laying sod.

B. Lay sod immediately upon delivery to site to prevent deterioration.

C. Lay sod tight with no open joints visible, and no overlapping; stagger joints 12 inches minimum. Do not stretch or overlap sod pieces.

END OF SECTION

SECTION 02940

GRASSING (BY SEEDING) & HYDRO-SEEDING

GRASSING (BY SEEDING)

PART 1 - GENERAL

1.01 SECTION INCLUDES

The work specified in this Section consists of the establishing of a stand of grass called for, by seeding and mulching. The work of grassing under this Section shall include seeding and fertilizing, mulching as required and maintaining the grassed areas until the completion of the project.

Any of the items of work covered by this Section may be eliminated from the contract, at the discretion of the Engineer.

Work to conform with Section 570 Grassing (by Seeding), F.D.O.T. Standard Specifications for Road and Bridge Construction, latest edition.

1.02 QUALITY ASSURANCE

A. Provide seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location where packaged.

1.03 REGULATORY REQUIREMENTS

A. Comply with regulatory agencies for fertilizer and herbicide composition.
B. Section 570, 981,982 and 983 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.

1.04 DELIVERY, STORAGE AND HANDLING

A. Deliver seed mixture in sealed containers. Seed in damaged packaging is not acceptable.
B. Deliver fertilizer in waterproof bags showing weight, chemical analysis and name of manufacturer.

1.05 EXISTING CONDITIONS

A. All existing grass areas that are damaged or destroyed during construction are to be repaired with new grass. Contractor is responsible for the restoration of the grass to the conditions that existed prior to construction.

1.06 FIELD MEASUREMENTS

A. Seeded areas will be measured based on areas shown on the Drawings. Seed required to be placed in excess of the areas detailed on the Drawings will be at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Topsoil: Muck; free of plants, weeds and roots. PH level between 5.0 and 7.0. Organic content of at least 1.5 percent.

B. Fertilizer: Use fertilizer Type I to conform with Section 982 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.

C. Seed: Section 981-1 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.

D. Mulching: When mulching is called for, approximately two inches, loose thickness, or the mulch material shall then be applied uniformly over the seeded area, and the mulch material cut into the soil with the equipment specified, so as to produce a loose mulched thickness of three to four inches. Care shall be exercised that the materials are not cut too deeply into the soil. When green mulch is used the green mulch shall be incorporated into the soil not later than two days after being cut, and not artificial watering of the mulch shall be done before it is applied.

E. Water: Per Section 983 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.

PART 3 - EXECUTION

3.01 PREPARATION OF SUBSOIL

A. Prepare sub-soil to eliminate uneven areas and low spots. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.

B. Remove foreign materials, weeds and undesirable plants and their roots.

3.02 PLACING TOPSOIL

Application of Fertilizer: The fertilizer and/or limestone shall be spread uniformly in one or more applications as specified below:

A. Spread topsoil to a minimum thickness of 2 inches over the entire area to be seeded.
B. Place topsoil during dry weather.
C. Roto-till to a depth of 6 inches.
D. Fine grade the area to be seeded to eliminate ridges, depressions and other irregularities, and to ensure positive drainage.

3.03 FERTILIZING

A. Fertilizing operations will not be permitted when wind velocities exceed 15 miles per hour.
B. Apply fertilizer uniformly at a rate of 400-500 pounds per acre.
C. Apply after smooth raking of topsoil and prior to seeding.
D. Apply fertilizer no more than 48 hours before seeding. When hydro-seeding, mix fertilizer with seed and mulch.
E. Lightly water to aid the dissipation of fertilizer.

F. Spread fertilizer by hand on steep slopes or other areas where machine spreading may not be practical.

3.04 SEEDING AND MULCHING

A. Seeding operations will not be permitted when wind velocities exceed 15 miles per hour.
B. Seed only when the soil is moist and in proper condition to induce growth.
C. Seed Application Rate: 8-10 pounds of Argentine Bahia per 1,000 square feet. During late fall, winter, and early spring applications, add 4-5 pounds of rye seed to the Bahia per 1,000 square feet. During late springs, summer and early fall, add 1-1/2 – 2 pounds of red top millet seed to the Bahia per 1,000 square feet.
D. Immediately after completion of the seeding, roll entire seeded area. At least two trips over the entire area are required.
E. Immediately following seeding and rolling, apply mulch to a loose thickness of 1 inch over the entire seeded area.
F. Apply water with a fine spray immediately after each area has been mulched.
G. Newly seeded areas are not to be watered to force seed germination but only to sustain grass growth.

3.05 HYRDO-SEEDING

A. Seed Application Rate: 8-10 pounds of Argentine Bahia per 1,000 square feet. During late fall, winter, and early spring applications, add 4-5 pounds of rye seed to the Bahia per 1,000 square feet. During late springs, summer and early fall, add 1-1/2 – 2 pounds of red top millet seed to the Bahia per 1,000 square feet.
B. Mulch Application Rate: 1,100 pounds per acre.
C. Add to the mixture a dispersing agent to insure proper dispersion and a uniform application.
D. Spray hydro mulch, seed, tackifier, and fertilizer in a one step operation. Keep mixture in a homogeneous slurry at all times.
E. Hydraulically spray on the ground to form a ground cover impregnated uniformly with grass seed. Allow absorption of moisture from rainfall or mechanical watering to percolate to the underlying soil.
F. Water so as to provide optimum growth conditions for the establishment of grass 24 hours after hydro-seeding. Irrigate for brief intervals, 3 to 4 times a day, until established. Keep top layer of soil moist until seeds germinate.

3.06 MAINTENANCE

A. Maintenance begins immediately after each area is planted.
B. Water to keep surface soil moist.
C. Repair washed out areas by filling with topsoil, fertilizing, seeding, and mulching.
D. Mow grass at regular intervals to maintain a maximum height of 4 inches. Do not cut more than 1/3 of grass blade at any one mowing.
E. Immediately remove clippings after mowing.
F. Roll surface to remove minor depressions or irregularities.
G. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.
H. Continue maintenance for the duration of the Contract Time but in no case less than two weeks.

3.07 ACCEPTANCE

A. If, at the end of the maintenance period, a satisfactory stand of grass has not been produced, renovate and reseed the unsatisfactory portions thereof immediately.
B. A satisfactory stand is defined as grass or section of grass that has:
    1. No bare spots larger than 3 square feet.
    2. Not more than 10 percent of total area with bare spots larger than 1 square foot.
    3. No more than 15 percent of total area with bare spots larger than 6 inches square.

END OF SECTION

SECTION 13 CONCRETE SPECIFICATIONS

SECTION 03010

CONCRETE WORK

PART 1 - GENERAL

1.00 RELATED DOCUMENTS

General and Supplementary Conditions apply to the work specified in this Section.

1.01 THIS WORK INCLUDES

Concrete work as shown on the plans.

1.02 QUALITY ASSURANCE

A. Codes and Standards - Latest Editions

Comply with the provisions of the following codes, specifications and standards, except where more stringent requirements are shown or specified:

1. ACI 301 "Specifications for Structural Concrete for Buildings."
2. ACI 311 "Recommended Practice for Concrete Inspection."
3. ACI 318 "Building Code Requirements for Reinforced Concrete."
4. ACI 347 "Recommended Practice for Concrete Formwork."
5. ACI 304 "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete."
6. Concrete Reinforcing Steel Institute, "Manual of Standard Practice."
7. ACI 302 “Guide for Concrete Floor & Slab Construction”.
8. ACI 305 "Hot Weather Concreting".
9. ACI 211-1 “Selecting Proportions for Normal Weight Concrete”.
10. ACI 305 “Hot Weather Concreting”.
11. ACI 308 “Curing Concrete”.

ATSM Standards

1. ASTM C31 Making and Curing Concrete Test Specimens in the Field.

2. ASTM C33 Concrete Aggregates.

3. ASTM C39 Compressive Strength of Cylindrical Concrete Specimens.

4. ASTM C94 Ready-Mixed Concrete.

5. ASTM C150 Portland Cement.

6. ASTM C172 Sampling Freshly Mixed Concrete.

7. ASTM C260 Air-Entraining Admixtures for Concrete.

8. ASTM C309 Liquid Membrane-Forming Compound for Curing Concrete Type 1or 1D Class A.

9. ASTM C823 Examination and Sampling of Hardened Concrete in Constructions.

10. ASTM C1046 Measuring Temperature of Freshly Mixed Concrete.

11. ASTM D448 Standard Sizes of Coarse Aggregate for Highway Construction.

12. ASTM E329 Inspection and Testing Agencies for Concrete Steel, and Bituminous Materials As Used in Construction.

13. ASTM C-618 "Chemical Admixtures for Concrete".

14. ASTM C-494 "FLYASH and Raw or Calcined natural Pozzolans for use as a mineral admixture in Portland Cement Concrete".

Florida Department of Transportation Standard Specifications, latest edition, Section 520, 522 and 525.

B. Workmanship

The Contractor is responsible for correction of concrete work which does not conform to the specified requirements, including strength, tolerances and finishes.

C. Laboratory Test Reports; Concrete Work

Submit two (2. copies of laboratory test reports for concrete materials and mix design test as specified.

PART 2 - PRODUCTS

2.00 FORM MATERIALS

A. Forms for Exposed Finish Concrete

Unless otherwise shown or specified, 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. Furnish in largest practicable sizes to minimize number of joints. Provide form material with sufficient thickness to withstand pressure of newly placed concrete without bow or deflection.

B. Forms for Unexposed Finish Concrete

From concrete surfaces which will be unexposed in finished structure with plywood, lumber, metal or other acceptable material. Provide lumber dressed on at least 2 edges and one side for tight fit.

C. Form Coatings

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.

D. Form Ties

1. Provide factory-fabricated, adjustable-length, removable or snap off metal form ties, designed to prevent form deflection and to prevent spilling of concrete surfaces upon removal.

2. Unless otherwise shown, install ties so portion remaining within concrete after removal is at least 1-1/2" inside concrete.

3. Unless otherwise shown, provide form ties which will not leave holes larger than 1" diameter in concrete surface.

E. Inserts

1. Provide metal inserts for anchorage of materials to concrete construction, not supplied by other trades and as required for the work.

2. Adjustable wedge inserts of malleable cast iron shall be complete with bolts, nuts and washers; 3/4" bolt size unless otherwise indicated.

3. Threaded inserts of malleable cast iron shall be furnished complete with full-depth bolts; 3/4" bolt size, unless otherwise indicated.

2.01 REINFORCING MATERIALS

A. Reinforcing Bar

1. ASTM A 615, Grade 60 deformed. Fabricate reinforcing bars to conform to required shapes and dimensions, with fabrication tolerances complying with CRSI "Manual of Standard Practice." In case of fabricating errors, do not rebend or straighten reinforcement in a manner that will injure or weaken the material. Reinforcement with any of the following defects will not be permitted in the work:

a. Bar lengths, depths and bends exceeding CRSI fabricating tolerances.

b. Bends or kinks not indicated on drawings or final shop drawings.

c. Bars with reduced cross section due to excessive rusting or other cause.

B. Supports for Reinforcement

1. Provide supports for reinforcement including bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcing bars and welded wire fabric in place. Use wire bar type support complying with CRSI recommendations, unless otherwise indicated. Wood, brick and other devices will not be acceptable.

2. For slabs-on-grade, use supports with sand plates or horizontal runners where base material will not support chair legs.

2.02 CONCRETE MATERIALS

A. Portland Cement

1. ASTM C 150, Type 1 or Type II, unless otherwise acceptable to Project Engineer.

2. Use only one brand of cement throughout the project, unless otherwise acceptable to Project Engineer.

B. Normal Weight Aggregates

1. ASTM C 33, and as herein specified. Provide aggregates from a single source for all exposed concrete.

C. Water

1. Clean, fresh, potable.

D. Admixtures

1. All admixtures shall be reported with proportions of mix per manufacturer's specification.

2. HRWR (Superplastisizer.: ASTM C-494 Type F/G.

3. Air-Entraining Admixture: ASTM C 260.

4. Water-Reducing and Retarding Admixture: ASTM C 494, Type A, B or D.

5. Calcium chloride will not be permitted in concrete.

E. FLYASH ASTM C-618 Class F (25% Mx. cement replacement..

2.03 RELATED MATERIALS

A. Moisture-Retaining Cover

1. One of the following, complying with ASTM C 171.

a. Waterproof paper.

b. Polyethylene film.

c. Polyethylene-coated burlap.

B. Curing Compounds

1. After the finishing operations have been completed and as soon as the concrete has hardened sufficiently such that marring of the surface will not occur, the entire surface and the edges of the newly placed concrete are to be cured using a liquid curing compound. Rate of application to be 200 square feet per gallon or as recommended by the manufacturer.

2. Do not leave concrete exposed for a period in excess of 30 minutes between stages of curing or during the curing period.

2.04 PROPORTIONING AND DESIGN OF MIXES

A. Normal Weight Concrete

1. Prepare design mix for type and strength of concrete in accordance with applicable provisions of ACI 221.1 and ACI 318, Chapter 4.

2. Recommended design mixes to provide normal weight with the following properties, as indicated on drawing and schedules:

B. Adjustment to Concrete Mixes

1. Mix design adjustments may be requested by the Contractor when characteristics of materials, use of admixtures, job conditions, method of placement, weather, test results, or other circumstances warrant, at no additional cost to the Owner and as approved by the Project Engineer. Laboratory test data for revised mix design and strength results must be submitted to and approved by the Project Engineer before using in the work.

C. Slump Limits

Proportion and design mixes to result in concrete slump at the point of placement as follows:

	Maximum	Minimum
Mass Concrete	3	1
Plain Concrete	4	2
Reinforcement Concrete	5	3
Concrete with HRWR	8	5

2.05 CONCRETE MIXING

A. Ready-Mix Concrete

1. Comply with the requirements of ASTM C-94, and as specified.

2. During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C-94 may be required.

a. When the air temperature is between 85° F and 90° F, reduce the mixing and delivery time to 75 minutes, and when the air temperature is above 90° F, reduce the mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.00 FORMS

A. Design, erect, support, brace and maintain formwork to support vertical and lateral loads that might be applied until such loads can be supported by the concrete structure. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation and position.

B. Construct forms complying with ACI 347. Provide for openings, offsets, sinkages, anchorages and inserts, and other features required in work. Use selected materials to obtain required finishes. Solidly butt joints and provide back-up at joint to prevent leakage of cement paste.

C. Form Ties

1. Factory fabricated, adjustable length, removable or snap-off metal form ties, designed to prevent form deflection, and to prevent spilling concrete surfaces upon removal.

2. Unless otherwise shown, provide ties so portion remaining within concrete removal is at least 1-1/2" inside concrete.

3. Unless otherwise shown, provide form ties, which will not leave holes larger than 1" diameter in concrete surface.

D. Provisions for Other Trades

1. Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings from trades providing such items. Accurately place and securely support items built into forms.

E. Cleaning and Tightening

1. Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt or other debris just before concrete is placed. Retighten forms after concrete placement if required to eliminate mortar leaks.

F. Edge Forms and Screed Strips for Slabs

1. Set edge forms for bulkheads and intermediate screed strips for slabs to obtain the required elevations and contours in the finished slab surface. Provide and secure units sufficiently strong to support the types of screed strips by the use of strike-off templates or accepted compacting type screeds.

G. Preparation of Form Surfaces

1. Coat the contact surface for forms with a form-coating compound before reinforcement is placed.

2. Thin form-coating compounds only with thinning agent of type, and in amount, and under conditions of the form-coating compound manufacturer's directions. Do not allow excess form-coating material to accumulate in the forms or to come into contact with concrete surfaces against which fresh concrete will be placed. Apply in compliance with manufacturer's instructions.

3. Coat steel forms with non-staining, rust preventative form oil or otherwise protect against rusting. Rust-stained steel formwork is not acceptable.

3.01 PLACING REINFORCEMENT

A. General - Comply with the specified codes and standards, and 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, 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. Locate and support reinforcing by metal chairs, runners, bolsters, spacing, and hangers, as required.

D. Place reinforcement to obtain at least the minimum coverages for concrete protection. Arrange, space and securely tie bars and bar supports to hold reinforcement in position during concrete, not toward exposed concrete surfaces.

E. Do not place reinforcing bars more than 3" beyond the last leg of continuous bar support. Do not use supports as bases for runways for concrete conveying equipment and similar construction loads.

F. Install welded wire fabric in as long lengths as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset end laps in adjacent widths to prevent continuous laps in either direction.

G. Splice reinforcement by lapping ends, placing bars in contact, and tightly wire typing. Comply with requirements of ACI 318 for minimum laps of spliced bars.

3.02 JOINTS

A. General: Construct expansion, weakened-plane (contraction., and construction joints true-to-line with face perpendicular to surface of concrete.

B. Contraction Joints: Provide contraction joints, sectioning concrete into areas as shown on drawings. Construct contraction joints for a depth equal to at least 1/4 concrete thickness, as follows:

Sawed Joints: Form weakened-plan joints using powered saws equipped with shatterproof abrasive or diamond rimmed blades. Cut joints into hardened concrete as soon as surface will not be torn, abraded or otherwise damaged by cutting action.

C. Construction Joints:

1. Place construction joints at the end of pours and at locations where placement operations are stopped for a period of more than 1/2-hour, except where such pours terminate at expansion joints.

2. Locate and install construction joints, as indicated on the drawings so as not to impair the strength and appearance of the structure, as acceptable to the Project Engineer.

3. Provide keyways, at least 1 1/2" deep in construction joints in walls, slabs and between walls and footing.

3.03 EMBEDDED ITEMS

General:

Set and build into the work, anchorage devices and other embedded items required for other work that is attached or supported by, cast-in-place concrete. Use setting drawings, diagrams, instructions and directions provided by suppliers of the items to be attached thereto. All hardware used to attach or embed devices into concrete is to be stainless steel or approved equal.

3.04 CONCRETE PLACEMENT

A. General:

1. Place concrete in compliance with the practice and recommendations of ACI 304, and as herein specified. No water shall be added to the concrete after initial mixing, unless approved by Project Engineer's jobsite representative.

2. 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 of planes of weakness with the section. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation due to rehandling or flowing. Do not subject concrete to any procedure which will cause segregation.

3. Screed concrete which is to receive other construction to the proper level to avoid excessive skimming or grouting.

4. Do not use concrete which becomes non-plastic and unworkable, or does not meet the required quality control limits, or which has been contaminated by foreign materials. Do not use retempered concrete. Remove rejected concrete and dispose of at approved off-site location.

B. Placing Concrete Slabs:

1. Deposit and consolidate concrete slabs in a continuous operation, within the limits of construction joints, until the placing of a panel or section is completed.

2. Bring slab surface to the correct level with a straight-edge and strike-off. Use bull floats or other acceptable methods to smooth the surface, leaving it free of humps or hollows. Do not sprinkle water on the plastic surface. Do not disturb the slab surfaces prior to beginning finishing operations.

3. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners. Maintain reinforcing in the proper position during concrete placement operations.

C. Hot Weather Placing:

1. When hot weather conditions exist that would seriously impair the 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 95° to 100° F. Mixing water may be chilled, or chopped ice may be used to control the concrete temperature, provided the water equivalent of the ice is calculated to the total amount of mixing.

3. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that the steel temperature will not exceed the ambient air temperature immediately before embedment in concrete.

4. Wet forms thoroughly before placing concrete.

D. Bonding:

1. Roughen surfaces of set concrete at all joints, except where bonding is obtained by use of concrete bonding agent, and clean surfaces of laitance, coatings, loose particles, and foreign matter. Roughen surfaces a manner to expose bonded aggregate uniformly and to not leave laitance, loose particle of aggregate, or damaged concrete at the surface.

2. Prepare for bonding of fresh concrete to new concrete that has set but is not fully cured, as follows:

a. At joints between walls or columns and beams or slabs they support, and elsewhere unless otherwise specified herein, dampen, but do not saturate, the roughened and cleaned surface of set concrete immediately before placing fresh concrete.

3.05 FINISH OF FORMED SURFACES

Rough Form Finish:

For formed concrete surfaces not exposed to view in the finish work or by other construction, unless otherwise indicated. This is the concrete surface having the texture imparted by the form facing material used with tie holes and defective areas repaired and patched and fins and other projections exceeding 1/4" in height rubbed down or chipped off.

3.06 CURING AND PROTECTION

A. General:

Protect freshly placed concrete from premature drying and excessive cold or hot temperature, and maintain without drying at a relatively constant temperature for a period of time necessary for hydration of cement and proper hardening. Start curing as soon as free water has disappeared from concrete surface after placing and finishing. Keep continuously moist for not less than 72 hours. Continue curing for at least 7 days in accordance with ACI 301 procedures. Avoid rapid drying at end of curing period.

B. Curing Method:

1. After the finishing operations have been completed and as soon as the concrete has hardened sufficiently such that marring of the surface will not occur, the entire surface and the edges of the newly placed concrete are to be cured using a liquid curing compound. Rate of application to be 200 square feet per gallon or as recommended by the manufacturer.

2. Do not leave concrete exposed for a period in excess of 30 minutes between stages of curing or during the curing period.

3.07 REMOVAL OF FORMS

A. Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work may be removed after cumulatively curing at not less than 50°F for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided curing and protection operations are maintained.

3.08 MISCELLANEOUS CONCRETE ITEMS

A. Filling In:

1. Fill-in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place and cure concrete as herein specified, to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.

B. Curbs:

1. Provide monolithic finish to interior curbs by stripping form while concrete is still green and steel-troweling surfaces to a hard, dense finish with corners, intersections and terminations slightly rounded.

3.09 CONCRETE SURFACE REPAIRS

A. Patching Defective Areas:

1. Repair and patch defective areas with cement mortar immediately after removal of forms, as specified herein.

2. Cut out honeycomb, rock pockets, voids over 1/4" in any dimension, and holes left by tie roads and bolts, down to solid concrete, but in no case to a depth of less than 1". Make edges of cuts perpendicular to the concrete surface. Before placing cement mortar or proprietary patching compound, thoroughly clean, dampen with water and brush-coat the area to the patched with neat cement grout, or proprietary bonding agent.

B. Repair of Formed Surfaces:

1. Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Project Engineer. Surface defects, as such, include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, fins and other projections on surface, and stains and other discolorations that cannot be removed by cleaning.

2. Flush out form tie holes, fill with dry pack mortar, or precast cement cone plugs secured in place with bonding agent.

3. Repair concealed formed surfaces, where possible, that contain defects that adversely affect the durability of the concrete. If defects cannot be repaired, remove and replace the concrete.

C. Repair of Unformed Surfaces:

1. Test unformed surfaces, such as monolithic slabs, for smoothness and to verify surface plane to tolerances specified for each surface and finish. Correct low and high areas as herein specified. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness, using a template having the required slope.

2. Repair finished unformed surfaces that contain defects which adversely affect durability of concrete. Surface defects, as such, include crazing, cracks in excess of 0.01" wide or which penetrate to reinforcement or completely through non-reinforced sections regardless of width, spilling, pop-outs, honeycomb, rock pockets, and other objectionable conditions.

3. Correct high areas in unformed surfaces by grinding, after concrete has cured at least 14 days.

4. Correct low areas in unformed surfaces during or immediately after completion or surface finishing operations by cutting out low areas and replacing with fresh concrete. Finish repaired areas to blend into adjacent concrete. Proprietary patching compounds may be used when acceptable to the Project Engineer.

5. Repair isolated random cracks and single holes not over 1" in diameter by dry-pack method. Groove top of cracks and cur-out holes to sound concrete and clean of dust, dirt and loose particles. Dampen cleaned concrete surfaces and brush with neat cement grout coating or concrete bonding agent. Mix dry-pack, consisting of one part Portland cement to 2 1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for not less than 72 hours.

6. Use epoxy-based mortar for structural repairs, where directed by Project Engineer.

7. Repair methods not specified above may be used, subject to acceptance by the Project Engineer.

3.10 QUALITY CONTROL TESTING DURING CONSTRUCTION

A. General:

1. The Project Engineer shall submit the name of the testing laboratory they are using to the Contractor at least ten days before testing on material starts.

2. Sampling and testing for quality control during the placement of concrete shall include the following:

a. Slump: ASTM C 143; One test each 50 yards or when an apparent change in consistency is observed.

b. Air Content: ASTM C 231 pressure for normal weight concrete; one for each set of compressive strength test specimens.

c. Concrete Temperature: Test hourly when air temperature is 40°F and below or 80°F and above, and each time a set of compressive test specimens are made.

d. Compressive Tests Specimen: ASTM C 31; one set of five (5. standard cylinders for each compressive strength test.

e. Compressive Test Specimen: ASTM C 39; one set each 50 cubic yard or fraction thereof, of each concrete class placed in any one day or for each 1,000 square foot of surface area placed; 1 specimen tested at 3 days; 1 specimen tested at 7 days, 3 specimens tested at 28 days, and one specimen retained in reserve for later testing, if required.

f. Test results will be reported in writing to the Project Engineer, Ready-Mix supplier, and the Contractor on the same day that tests are made. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement,

name of concrete testing service, concrete type and class, location of concrete batch in the structure, design compressive strength at 28 days, concrete mix proportions and materials; compressive breaking strength and type of break for 3-day test, 7-day tests, and 28-day tests.

g. Additional Tests: The testing service will make additional tests of in-place concrete when test results indicate the specified concrete strength and other characteristics have not been attained in the structure, as directed by the Project Engineer. The testing service may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed. Contractor shall pay for such tests conducted, and any other additional testing as may be required, when unacceptable concrete is verified.

h. Defective Work: Concrete work which does not conform to the specified requirements, including strength, tolerances and finishes, shall be corrected at the Contractor's expense, without extension of time therefore. The Contractor shall be responsible for the cost of corrections to any other work affected by or resulting from corrections to the concrete work.

END OF SECTION

SECTION 03100

CONCRETE FORMWORK

PART 1 - GENERAL

1.01 SCOPE

Except as otherwise specified, the work shall consist of performing all formwork and related items for all cast-in-place concrete work indicated on the drawings in this section.

1.02 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

A. Definitions and Standards: Section 01068

B. Concrete Work Section 03010

PART 2 - PRODUCTS

2.01 FORMS

A. Steel Forms

Material shall meet the requirements of Paragraph 3.01.

B. Wood Forms

Wood forms shall be constructed of lumber or plywood. For exposed concrete surfaces, use dressed uniform thickness lumber or plywood with surfaces free from defects or irregularities. For non-exposed concrete surfaces and rough work, undressed lumber or plywood may be used.

2.02 FORM TIES

Shall be an approved type or removable bolts or rods. Ties shall have an adequate working strength and be of a type to adjust to the length required. Wire ties will not be permitted.

PART 3 - EXECUTION

3.01 CONSTRUCTION OF FORMS

A. Construct forms to slopes, lines and dimensions shown, plumb and straight, securely braced and shore forms to prevent displacement and to properly support construction loads. Provide access openings for cleaning and inspecting forms and reinforcement prior to depositing concrete. Do not coat forms with material that will stain or cause injury to exposed concrete surfaces. Keep wood forms wet.

Forms shall be constructed for easy removal without damage to concrete. Lumber once used in forms shall have nails removed and the surfaces cleaned before reuse.

B. Joints shall be tight and leak proof and arranged vertically or horizontally to conform to the pattern of the design.

C. Forms placed in successive units for continuous surfaces shall be fitted to accurate alignment so that the completed surface shall be smooth and free from irregularities.

D. For long spans, where intermediate supports are not possible, the anticipated deflection in the forms due to the weight of the fresh concrete shall be accurately considered in the form design so the finished concrete members will have true surfaces conforming accurately to the desired lines, planes and elevations.

E. Unless otherwise required by building code, or if tremies are not to be used, openings in sides of forms shall be used to limit the free fall of concrete to 4 feet.

F. All foundation and footing sides shall be formed.

G. All supporting forms and shoring shall have sufficient strength stiffness, bracing and stability to properly support all construction loads without excessive deflection.

H. Concrete shall not be placed in any form until inspected and approved by Project Engineer.

3.02 FORM TIES

A. Form ties shall be of an approved type. Ties used for exposed concrete surfaces shall be of a type approved by Project Engineer. Ties shall be of such type that any metal remaining in place will not be closer than 1-1/2 inches to the concrete surface.

B. Ties shall not be fitted with any lugs, cones, washers or other device to act as a spreader within the forms of an other purpose which will leave a hole or depression larger than 7/8 inch in diameter or a depression back of the exposed surface of the concrete.

C. Ties that are to be removed shall be coated with cup grease or other approved material to facilitate removal.

D. Holes remaining from bolts or tie rods shall be filled solid with cement mortar. Holes passing entirely through the wall or beam shall be filled form inside face with a device that will force the mortar through to the outside face using a stop held at the outside wall surface to assure complete filling. Holes which do not pass entirely through the walls shall be packed thoroughly full. All excess mortar at the face of filled holes shall be struck off flush.

3.03 WETTING AND OILING FORMS

The inside surface of wood board forms shall be soaked with clean water prior to placing concrete. Except as otherwise specified, plywood or metal forms shall be treated with an approved form of oil or lacquer. If oil is used, all excess oil shall be wiped off with rags to leave the surface of the forms just oily to the touch.

3.04 INSERTS AND FASTENING DEVICES IN FORMWORK

A. Provide for installation of inserts, conduit, pipe or duct sleeves, drains, hangers, metal ties, anchors, bolts, angle guards, dowels, anchor slots, nailing strips, blocking, grounds and other fastening devices required for attachment of other work. Properly locate in cooperation with other trades and secure in position before concrete is placed. See drawings and other sections of specifications for extent, locations and details of items to be embedded or placed in concrete.

B. All sleeves, chases, inserts, lifting devices, etc. which are provided and placed in the forms shall be maintained in position and protected until the concrete work is completed. Lifting devices shall be anchored to the main reinforcing bars.

3.05 REMOVAL OF FORMS

A. Forms shall be removed, in accordance with requirements of the ACI Building Code Requirements for Reinforced Concrete, without damage to concrete and in manner to insure complete safety of the structure. Leave shoring in place until concrete member will safely support its own weight plus any live loads that may be placed upon it. Reshore all members as required by conditions to properly and adequately carry all construction loads.

B. Upon removal of forms the Project Engineer shall be notified by the Contractor in order that an inspection of the newly stripped surfaces can be made.

C. Upon approval by Project Engineer, freshly stripped surface shall be patched and concrete rubbed out within 24 hours.

D. All temporary bracing, shoring and re-shoring as required for in place concrete shall be provided.

E. Face forms or non-supporting forms may be removed within 24 hours after placement of concrete.

F. Supporting forms shall not be removed until the in-place concrete has reached 70% of the specified design strength except the bridge slabs shall reach 100% design strength, but in no event until seven days after concrete placement, without approved concrete cylinder breaks.

SECTION 03400

PRE-CAST CONCRETE

PART 1 - GENERAL

1.01 SCOPE

The Work consists of performing all precast and prestressed concrete work and related items as indicated on drawings and specified in this section.

1.02 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

A.	Definitions and Standards:	Section 01068
B.	Concrete Formwork:	Section 03100

1.03 REFERENCED SPECIFICATIONS

Florida Department of Transportation "Standard Specifications for "Road and Bridge Construction" Sections 346, 400, 413, and 415, Latest Edition.

1.04 WORK INCLUDED

A. The work shall be to construct precast and prestressed structures and other items as detailed on drawings or as approved by shop drawings.

B. Records: The Contractor shall record on the drawings in color code, the time, date and location of all precast and prestressed concrete items installed. These drawings shall be kept on file at the project and be subject to inspection by the Project Engineer.

1.05 CODES

American Concrete Institute and Prestressed Concrete Institute Code.

1.06 NOTICE

The Project Engineer shall be given 24 hours advance notice of installation of all precast and prestressed concrete elements and no elements shall be installed without approval of the Project Engineer.

1.07 QUALITY ASSURANCE

Acceptable Manufacturers: Minimum of three years experience in precast and prestressed structure work of quality and scope required on this project.

PART 2 - PRODUCTS

2.01 PORTLAND CEMENT

ASTM C-150 - Type 1 Portland Cement shall be used in all precast and prestressed concrete items, unless otherwise specified on plans.

2.02 FINE AGGREGATE SAND

See Section 03010. – 1.02.

2.03 COARSE AGGREGATE

See Section 03010. – 1.02.

2.04 MIXING WATER

See Section 03010. – 1.02.

2.05 MIXING PROPORTIONING

A. Precast: To be Class IV in accordance with Section 345 of the referenced specifications and produce 28 day compressive strength of moisture cured laboratory samples 3400 p.s.i. minimum.

B. Minimum cement content: 564 lbs./cubic yard.

2.06 MIXES

A. Equivalent to ASTM C-94-72.

B. Mix concrete only in quantities for immediate use.

C. Do not re-temper or use set concrete.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Placing Concrete

1. Convey concrete from mixer to final position by method which will prevent separation or loss of materials.

2. Deposit concrete in continuous operation until section is completed.

3. Regulate rate of placement so concrete remains plastic and flows into position.

4. All other items of handling and placing concrete shall be in accordance with ACI 318-83.

B. Consolidating Concrete

1. Use mechanical vibrating equipment for consolidation. No placement of concrete will be allowed to commence unless the Contractor has a minimum of two operable vibrators on the job.

2. Vertically insert and remove hand-held vibrators at points 18 inches to 30 inches apart.

3. Do not use vibrators to transport concrete in forms.

4. Vibrators shall be 2 1/4" to 2 5/8" in diameter, and shall have a minimum frequency of 10, 000 impulses/minute.

5. Vibrate concrete minimum amount required for consolidation.

C. Construction Joints

Construction joints and/or expansion joints not shown on the plans will be made only with the approval of the Project Engineer.

D. Finishing

1. Tops of forms:

a. Strike concrete smooth at tops of forms.
b. Float to texture comparable to formed surfaces.
c. Steel trowel to seal.

2. Formed surfaces:

a. As-cast finish.
b. Patch the holes and defects after form removal.
c. Remove fins from surfaces.

E. Curing

1. Keep concrete moist by keeping surfaces continually dampened, continuing for minimum of 72 hours, or

2. Apply an approved (white pigmented. membrane curing compound AASHTO M 148 Type 2.

F. Tolerances

1. Overall dimensions of members = 1/4" per 10 feet with ±1" maximum after completion of erection.

2. Cross Section Dimensions

a. Sections less than 3 inches = +3/8", -1/8".
b. Sections over 3 inches and less than 18 inches = +1/2", -1/4"
c. Sections over 18 inches = +3/4", -1/2".

3.02 PROTECTION OF COMPLETED WORK

During curing period, protect concrete from damaging mechanical disturbances, water flow, loading, shock and vibration.

3.03 INSPECTION AND TESTING

A. Fabricators Tests: The fabricator shall take a minimum of five concrete compression cylinders for each days concrete placing of each type of product covered by this division and for every 50 cubic yards of concrete placed each day. The five test cylinders shall be cured with the project. Two shall be used to determine if the proper release strength has been achieved. Two cylinders shall then be water cured for twenty-eight days and tested. Three copies of the test reports shall be furnished to the Project Engineer. Regular moisture and grading determinations shall be made on materials and the concrete mix adjusted accordingly.

B. Fabricators Inspections: The fabricator shall inspect initial prestress forces and maintain a check on the manufacturing process in accordance with standards referenced in this section.

Three copies of mix reports on cement, reinforcing steel and strand steel, concrete design, and aggregate gradation shall be furnished to the Project Engineer prior to fabrication of the units.

If so directed by the Owner, the Project Engineer will employ the services of an independent testing laboratory to conduct additional testing. The cost of this testing will be paid by the Owner.

Project Engineer and their authorized representatives shall be allowed access to the casting yard at any time to inspect the fabrication of units for this project.

END OF SECTION

SECTION 14 ELECTRIC ACTUATOR SPECIFICATIONS

PART 1 – GENERAL

1.01 DESCRIPTION

The actuator shall be EIM model **2FLG-8** for 24 RPM applications or model **2FRG-8** for 48 RPM applications where the gate stem size, torque and thrust requirements are within the ratings of the identified actuators. The Gate stem shall support a clockwise to close output form the actuator. Alternate actuator models will require engineering approval. The desired operation speed of the gate shall be 12 inches per minute. In no case shall the actuator motor be smaller that 1 HP. In addition the actuator shall include the following mechanical and control options:

-2” square AWWA handwheel drive nut.
-EIM “RINO” coating system for entire actuator.
-Actuator drive sleeve and handwheel shall rotate Clockwise to Close.
-Integral reversing starter and control transformer.
-4-20mA output signal for reporting of valve position, A Mechanical Dial Position Window Shall **“NOT”** be provided.
-4 train 4 gear, geared limit switch base
-Open and close torque switch.
- Monitor relay (control power and motor thermals)
-Control compartment heater.

Control elements listed below shall be contained inside the actuator cover with no lenses, buttons, knobs on the cover.
-3 push buttons (open – stop – close)
-The stop button shall be active in both local and remote modes.
- 4 lights (open – close- power on- over torque)
-Local / Off / Remote switch.
EIM Wiring Diagram: NPB1