

**NOTICE TO BIDDERS
PETER PRINCE FIELD
SERVICE ROAD & AVIATION DR. EXTENSION**

Notice is hereby given that the Board of County Commissioners of Santa Rosa County, Florida will receive sealed bids for construction of the Peter Prince Field – Service Road & Aviation Drive Extension located at the Peter Prince Field. The project includes the construction of an 890 lineal foot service road, a 433 lineal foot extension of an aviation drive, storm water collection systems, and storm water retention areas. Only properly licensed and contractors are invited to submit proposals.

All bids must be in writing and delivered by hand, overnight courier service, or U.S. Mail to the Santa Rosa County Procurement Department, 6495 Caroline Street, Suite J, Milton, Florida 32570, and must be received by 09:00 a.m., September 6, 2016, at which time will be publicly opened. Secondary delivery location shall be to Suite M at the above address. Only bids received by the aforesated time and date will be considered. All bids shall be sealed and clearly labeled, **“ITB# 16-059 PETER PRINCE FIELD – SERVICE ROAD & AVIATION DR. EXTENSION”**. Please provide the original proposal, labeled **“ORIGINAL”**, and FOUR (4) copies labeled **“COPY”** (5 total complete packages) along with one (1) electronic file in OCR (readable) PDF format.

Specifications may be secured by download from the Santa Rosa County Website:
(www.santarosa.fl.gov/bids/openbids.html).

Questions concerning this bid should be directed in writing to Marc Bonifay, Project Engineer, at MarcB@santarosa.fl.gov prior to 4:30 p.m., August 26, 2016.

The Board of County Commissioners reserves the right to accept or reject any and all bids in whole or in part and to waive all informalities and to award the bid that it determines to be in the best interest of Santa Rosa County. Santa Rosa County does not discriminate on the basis of race, color, national origin, sex, religion, age, or handicapped status in employment or provision of service.

By order of the Board of County Commissioners of Santa Rosa County, Florida.

PROJECT MANUAL

PETER PRINCE FIELD

SERVICE ROAD &

AVIATION DR. EXTENSION

JULY 2016



**OWNER: BOARD OF COUNTY
COMMISSIONERS
SANTA ROSA COUNTY, FLORIDA**

COUNTY ENGINEER: ROGER BLAYLOCK

PROJECT ENGINEER: MARC BONIFAY

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SECTION 00110 - INVITATION TO BID

PETER PRINCE FIELD – SERVICE ROAD & AVIATION DR. EXTENSION

Only properly licensed Contractors are invited to bid on the construction of the **PETER PRINCE FIELD – SERVICE ROAD & AVIATION DR. EXTENSION** project. The project includes the construction of an 890 lineal foot service road, a 433 lineal foot extension of aviation drive, stormwater collection systems, and stormwater retention areas.

All bids must include lump sum prices. **Unit prices must be submitted for basis of any change orders due to changes in the work.**

The Board of County Commissioners of Santa Rosa County, Florida (Owner) will receive sealed bids from qualified licensed Contractors only until 9:00 A.M. (CST) September 6 2016 at the Santa Rosa County Procurement Department, 6495 Caroline Street, Suite J, Milton, Florida 32570. Bids received after this time will be rejected and returned unopened to the bidder. Bids will be opened publicly and read aloud at Santa Rosa County Procurement Department, 6495 Caroline Street, Suite J, Milton.

Specifications may be secured by download from the Santa Rosa County Website: (www.santarosa.fl.gov/bids/openbids.html).

Each bid shall be submitted on the bid form provided and must be accompanied by a Certified Check or bid Bond in the amount of five percent (5%) of the Base Bid, and copies of all required licenses. Such Bid Bond or Check is given with the understanding and agreement that it guarantees: (1) that the bidder will not withdraw his bid for a period of 60 days after the bids have been opened; and, (2) that if his bid is accepted, the Bidder will enter into the written Contract with Santa Rosa County and furnish the required Performance Bond Payment Bond Insurance Certificates, within 10 days after receipt of Notice of Award of his bid. Pursuant to Florida Statutes, Section 255.05, should the contract exceed \$100,000, the Contractor shall be required to execute and record performance and payment bonds. These bonds must state the name and principal business address of both the principal and the surety and a description of the project sufficient to identify it. In the event the bidder fails to comply with any of these conditions and requirements in whole or in part, the full amount of the bond or check shall be automatically forfeited to Santa Rosa County as damages on account of the default of the bidder.

Santa Rosa County Board of County Commissioners encourages all segments of the business community to participate in its procurement opportunities, including small businesses, minority/women owned businesses, and disadvantaged business enterprises. The Board does not discriminate on the basis of race, color, religion, national origin, disability, sex, or age in the administration of contracts.

The Owner reserves the right to waive informalities in bids, to reject any or all bids with or without cause and to accept the bid that in its judgment is in the best interest of Santa Rosa County, Florida.

The Contract form shall be provided by the County Attorney.

Completion Time: The entire project shall be completed within Ninety (90) calendar days after the Notice to Proceed. Substantial completion must be met within Seventy-five (75) days after NTP.

The date of substantial completion of the work or designated portion thereof is the date certified by the Engineer when construction is sufficiently complete and approved in accordance with the Contract Documents so the Owner can occupy or utilize the work for the use which it was intended.

Liquidated damages will be established in the amount of \$1,000.00 per calendar day for each calendar day after completion date if the work is not substantially complete as certified by the Engineer.

Payment requests approved by the Engineer for work completed satisfactorily in accordance with the Contract Documents shall be reduced by a ten percent (10%) retainer. The ten percent (10%) retainer shall be retained by the Owner until final completion and acceptance of the work by the Engineer and Santa Rosa County, Florida.

END OF SECTION 00110

SECTION 00120 - INSTRUCTIONS TO BIDDERS

1.00 BID FORMS:

A Bid form is included in these specifications.

Bid documents shall be sealed and clearly labeled with the words “**ITB# 16-059 PETER PRINCE FIELD – SERVICE ROAD & AVIATION DR. EXTENSION**”, name of bidder and date and time of opening so as to guard against premature opening of any bid.

The Owner may consider as informal any bid on which there is an alteration of or departure from the Bid Form hereto attached.

The Bid shall be based upon the completion of the Work according to the drawings and specifications, together with all addenda thereto.

Evidence of all appropriate required licenses and Business Tax Receipt shall be attached to the Bid Documents.

2.00 INTERPRETATION:

No oral interpretation will be made to any Bidder as to the meaning of the drawings or specifications. Every interpretation made to a Bidder will be in the form of an Addendum to the specifications. Addenda will be furnished to each Plan Holder, but it shall be the Bidder's responsibility to make inquiry as to Addenda issued. All such addenda shall become part of the contract and all Bidders shall be bound by such Addenda whether or not received by the Bidders. Any questions regarding the drawings or specifications must be submitted in writing to Marc Bonifay, Project Engineer, at MarcB@santarosa.fl.gov prior to **4:30 p.m., August 26, 2016**.

3.00 FAMILIARITY WITH LAWS:

It is the Bidder's responsibility to be familiar with all Federal, State, and local laws, ordinances, rules, and regulations that in any manner, affect the work. Ignorance thereof the part of the Bidder will in no way relieve him from responsibility.

4.00 EXAMINATION OF DOCUMENTS AND SITE:

Before submitting his proposal, Bidder shall visit the site of the proposed work and familiarize himself with the nature and extent of the work and any local conditions that may in any manner affect the work to be done and the equipment, materials, and labor required. He shall also examine the drawings, specifications, and other Contract Documents to inform himself thoroughly regarding any and all conditions and requirements that may in any manner affect the work to be performed under the contract.

5.00 RIGHT TO REJECT PROPOSAL:

The Owner reserves the right to waive informalities in bids to reject any or all bids with or without cause and accept the bid that in its judgment is in the best interest of the County.

6.00 TIME OF COMPLETION:

The entire project shall be completed within Ninety (90) calendar days after the Notice to Proceed. Substantial completion must be met within Seventy-five (75) days after NTP.

7.00 FORM OF AGREEMENT:

The Contract form shall be provided by the County Attorney.

8.00 BID GUARANTEE:

Each bid shall be submitted on the bid form provided and must be accompanied by a Certified Check or bid Bond in the amount of five percent (5%) of the Base Bid, and copies of all required licenses. Such Bid Bond or Check is given with the understanding and agreement that it guarantees: (1) that the bidder will not withdraw his bid for a period of 60 days after the bids have been opened; and, (2) that if his bid is accepted, the Bidder will enter into the written Contract with Santa Rosa County and furnish the required Performance Bond Payment Bond Insurance Certificates, within 10 days after receipt of Notice of Award of his bid. Pursuant to Florida Statutes, Section 255.05, should the contract exceed \$100,000, the Contractor shall be required to execute and record performance and payment bonds. These bonds must state the name and principal business address of both the principal and the surety and a description of the project sufficient to identify it. In the event the bidder fails to comply with any of these conditions and requirements in whole or in part, the full amount of the bond or check shall be automatically forfeited to Santa Rosa County as damages on account of the default of the bidder.

END OF SECTION 00120

SECTION 00130 - BID FORM

(To be copied by the Bidder on his own letterhead and submitted.)

TO: Santa Rosa County Procurement Department
6495 Caroline Street, Suite J
Milton, Florida 32570

REFERENCE: **ITB# 16-059 PETER PRINCE FIELD – SERVICE ROAD & AVIATION
DR. EXTENSION**

BASE BID PRICE: _____

Gentlemen:

I have received the Bidding Documents consisting of Drawings and Specifications (Project Manual) entitled **PETER PRINCE FIELD – SERVICE ROAD & AVIATION DR. EXTENSION**, prepared by Santa Rosa County Engineering, 6051 Old Bagdad Highway, Suite 300, Milton, Florida 32570, (850) 981-7100.

I have also received Addenda Numbers _____ and have included their provisions in my Bid. I have examined both the Bidding Documents and the site.

In submitting the Bid, I agree:

1. To hold my bid in full force and effect for a period of sixty (60) calendar days after the time of the opening of this Bid.
2. To accept the provisions of the Instructions to Bidders regarding disposition of Bid Guarantee.
3. To enter into and execute a Contract within 10 (ten) calendar days after said Contract is delivered to me, if awarded on the basis of this Bid.
4. To accomplish the work in accordance with the Contract Documents.
5. To commence work under this Contract on or before a date to be specified in written "Notice of Proceed" by the County Attorney and to complete project within ninety (90) calendar days thereafter, with substantial completion coming at seventy-five (75) days.
6. To pay as liquidated damages, the sum of \$1,000.00 for each consecutive calendar day after completion date, as called for in the Contract Agreement as modified.
7. Provide Santa Rosa County with Performance Bonds and adhere to project manual.

I will construct this project for the lump sum price of:

BASE _____ (\$ _____)

Unit prices are attached for informational purposes. Change orders and progress payments will be based on unit prices provided.

FIRM: _____

BY (print): _____

SIGNATURE: _____

TITLE: _____

DATE: _____

MAILING ADDRESS _____

PHONE (____) _____ FAX (____) _____

EMAIL _____

END OF SECTION 00130

SWORN STATEMENT UNDER SECTION 287.133 (3) (A),
FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS:

1. This sworn statement is submitted to _____
by _____
(print individual's name and title)
for _____
(print name of entity submitting sworn statement)
whose business address is _____ and (if applicable) its Federal
Employer Identification Number (FEIN) is _____. If the entity has no FEIN,
include the Social Security Number of the individual signing this sworn statement: _____.
2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation..
3. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.
4. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:
 1. A predecessor or successor of a person convicted of a public entity crime; or
 2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a Public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of public entity crime.
5. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or appeals to bid on contracts for the provisions of goods and services et by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.
6. Based on the information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. (Indicate which statement applies.)
____Neither the entity submitting this sworn statement, nor one or more of the officers,, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.
____The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.
____The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officers determined that it was not in the public interest to Place the entity submitting this sworn statement on the convicted vendor list. (ATTACH A COPY OF THE FINAL ORDER.)

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING IN TO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

(Signature)

Sworn to and subscribed before me this _____ day of _____, 2_____.

Personally known _____

or Produced identification _____ Notary Public – State of _____

(Type of identification) My commission expires _____

(Printed typed, or stamped commissioned name of notary public.)

INSURANCE

INSURANCE REQUIREMENTS

- (1) THE CONTRACTOR SHALL OBTAIN AND MAINTAIN SUCH INSURANCE AS WILL PROTECT IT FROM: (1) CLAIMS UNDER WORKER'S COMPENSATION LAWS, DISABILITY BENEFIT LAWS, OR OTHER SIMILAR EMPLOYEE BENEFIT LAWS; (2) CLAIMS FOR DAMAGES BECAUSE OF BODILY INJURY, OCCUPATIONAL SICKNESS OR DISEASE OR DEATH OF HIS EMPLOYEES INCLUDING CLAIMS INSURED BY USUAL PERSONAL INJURY LIABILITY COVERAGE; (3) CLAIMS FOR DAMAGES BECAUSE OF BODILY INJURY, SICKNESS OR DISEASE, OR DEATH OF ANY PERSON OTHER THAN HIS EMPLOYEES INCLUDING CLAIMS INSURED BY USUAL PERSONAL INJURY LIABILITY COVERAGE; AND (4) FROM CLAIMS FOR INJURY TO OR DESTRUCTION OF TANGIBLE PROPERTY INCLUDING LOSS OR USE RESULTING THEREFROM - - ANY OR ALL OF WHICH CLAIMS MAY ARISE OUT OF, OR RESULT FROM, THE SERVICES, WORK AND OPERATIONS CARRIED OUT PURSUANT TO AND UNDER THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, WHETHER SUCH SERVICES, WORK AND OPERATIONS BE BY THE CONTRACTOR, ITS EMPLOYEES, OR BY SUBCONTRACTOR(S), OR ANYONE EMPLOYED BY OR UNDER THE SUPERVISION OF ANY OF THEM, OR FOR WHOSE ACTS ANY OF THEM MAY BE LEGALLY LIABLE.
- (2) THIS INSURANCE SHALL BE OBTAINED AND WRITTEN FOR NOT LESS THAN THE LIMITS OF LIABILITY SPECIFIED HEREINAFTER, OR AS REQUIRED BY LAW, WHICHEVER IS GREATER.
- (3) THE CONTRACTOR SHALL REQUIRE, AND SHALL BE RESPONSIBLE FOR ASSURING THROUGHOUT THE TIME THE AGREEMENT IS IN EFFECT, THAT ANY AND ALL OF ITS SUBCONTRACTORS OBTAIN AND MAINTAIN UNTIL THE COMPLETION OF THAT SUBCONTRACTOR'S WORK, SUCH OF THE INSURANCE COVERAGES DESCRIBED HEREIN AS ARE REQUIRED BY LAW TO BE PROVIDED ON BEHALF OF THEIR EMPLOYEES AND OTHERS.
- (4) THE CONTRACTOR SHALL REQUIRE THE INSURANCE AGENT/BROKER TO PROVIDE REPLACEMENT CERTIFICATES OF INSURANCE ON A TIMELY BASIS, PREFERABLY NO LATER THAN FIVE (5) DAYS PRIOR TO POLICY TERMINATION.
- (5) THE CONTRACTOR SHALL OBTAIN AND MAINTAIN THE FOLLOWING INSURANCE COVERAGES AS PROVIDED HEREIN BEFORE, AND IN THE TYPE, AMOUNTS AND IN CONFORMANCE WITH THE FOLLOWING MINIMUM REQUIREMENTS:
 - A. FLORIDA STATUTORY WORKERS' COMPENSATION AND EMPLOYERS LIABILITY WITH MINIMUM LIMITS OF \$500,000, WHETHER REQUIRED BY CHAPTER 440, FLORIDA STATUTES OR NOT. IN ADDITION, COVERAGE UNDER THE U. S. LONGSHOREMEN & HARBOR WORKERS' AND JONES ACT, MAY BE REQUIRED COVERAGES BY LAW OR REGULATION FOR THE WORK SPECIFIED IN THIS CONTRACT. CONTRACTOR AND SUBCONTRACTORS MAY PROVIDE A VALID CERTIFICATE OF EXEMPTION ISSUED BY THE STATE OF FLORIDA IN LIEU OF WORKERS' COMPENSATION INSURANCE COVERAGE.

B. COMMERCIAL GENERAL LIABILITY WITH MINIMUM COMBINED SINGLE LIMITS OF \$1,000,000, INCLUDING COVERAGE PARTS OF BODILY INJURY, BROAD FORM PROPERTY DAMAGE, PERSONAL INJURY, INDEPENDENT CONTRACTORS, BLANKET CONTRACTUAL LIABILITY AND PRODUCTS AND COMPLETED OPERATIONS. THE EXCLUSION FOR UNDERGROUND DAMAGE, EXPLOSION AND COLLAPSE SHALL BE REMOVED THROUGH A POLICY ENDORSEMENT. THE COMMERCIAL GENERAL LIABILITY POLICY'S TOTAL POLLUTION EXCLUSION SHALL BE REMOVED BY ENDORSEMENT. COMPLETED OPERATIONS AND PRODUCTS LIABILITY SHALL BE MAINTAINED FOR A PERIOD OF TWO (2) YEARS AFTER FINAL PAYMENT.

C. AUTOMOBILE LIABILITY WITH MINIMUM COMBINED SINGLE LIMITS OF \$1,000,000 FOR ALL HIRED, OWNED AND NON-OWNED VEHICLES.

D. EXCESS OR UMBRELLA LIABILITY WITH MINIMUM LIMITS OF \$2,000,000 WHICH ARE NO MORE RESTRICTIVE THAN THE UNDERLYING LIMITS. UMBRELLA COVERAGE SHALL DROP DOWN TO PROVIDE COVERAGE WHERE THE UNDERLYING LIMITS ARE EXHAUSTED.

E. PROFESSIONAL LIABILITY INSURANCE WITH MINIMUM LIMITS OF \$500,000 FOR ENGINEERS AND ARCHITECTS EMPLOYED BY THE CONTRACTOR, IF ANY.

F. BUILDERS RISK INSURANCE UNDERWRITTEN ON THE "ALL RISKS OF PHYSICAL LOSS" BASIS FOR REPLACEMENT COST FOR THE FULL VALUE OF THE COMPLETED PROJECT TO COVER THE OWNER AND CONTRACTOR AS THEIR INTEREST MAY APPEAR. AN INSTALLATION FLOATER MAY BE AN ALTERNATIVE IF APPROPRIATE TO THIS SPECIFIC CONTRACT.

G. CONTRACTOR SHALL PROCURE AND FURNISH OWNER'S PROTECTION LIABILITY INSURANCE POLICY NAMING SANTA ROSA COUNTY WITH THE FOLLOWING LIMITS:

1. \$1,000,000 PER OCCURRENCE.
2. \$2,000,000 AGGREGATE.

ARTICLE 1 GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents consist of the Agreement between Owner and Contractor (hereinafter the Agreement), Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Engineer. Unless specifically enumerated in the Agreement, the Contract Documents do not include other documents such as bidding requirements (advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or portions of Addenda relating to bidding requirements).

1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Engineer and Contractor, (2) between the Owner and a Subcontractor or Sub-Subcontractor, (3) between the Owner and Engineer or (4) between any persons or entities other than the Owner and Contractor. The Engineer shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Engineer's duties.

1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner or by separate Contractors.

1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

1.1.7 THE PROJECT MANUAL

The Project Manual is a volume assembled for the Work which may include the bidding requirements, sample forms, Conditions of the Contract and Specifications.

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is

required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

1.2.3 Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

1.3 CAPITALIZATION

1.3.1 Terms capitalized in these General Conditions include those which are (1) specifically defined, (2) the titles of numbered articles and identified references to Paragraphs, Subparagraphs and Clauses in the document.

1.4 INTERPRETATION

1.4.1 In the interest of brevity the Contract Documents frequently omit modifying words such as “all” and “any” and articles such as “the” and “an”, but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

1.5 EXECUTION OF CONTRACT DOCUMENTS

1.5.1 The Contract Documents shall be signed by the Owner and Contractor. If either the Owner or Contractor or both do not sign all the Contract Documents, the Engineer shall identify such unsigned Documents upon request.

1.5.2 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

1.6 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

1.6.1 The Drawings, Specifications and other documents, including those in electronic form, prepared by the Engineer and the Engineer's consultants are Instruments of Service through which the Work to be executed by the Contractor is described. The Contractor may retain one record set. Neither the Contractor nor any Subcontractor, Sub-Subcontractor or material or equipment supplier shall own or claim a copyright in the Drawings, Specifications and other documents prepared by the Engineer or the Engineer's consultants, and unless otherwise indicated the Engineer and the Engineer's consultants shall be deemed the authors of them and will retain all common law, statutory and other reserved rights, in addition to the copyrights. All copies of Instruments of Service, except the Contractor's record set, shall be returned or suitably accounted for to the Engineer, on request, upon completion of the Work. The Drawings, Specifications and other documents prepared by the Engineer and the Engineer's consultants, and copies thereof furnished to the Contractor, are for use solely with respect to this Project. They are not to be used by the Contractor or any Subcontractor, Sub-Subcontractor or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Engineer and the Engineer's consultants. The Contractor, Subcontractors, Sub-Subcontractors and material or equipment suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Engineer and the Engineer's consultants appropriate to and for use in the execution of their Work under the Contract Documents. All copies made under this authorization shall bear the statutory copyright notice, if any, shown on the Drawings, Specifications and other documents prepared by the Engineer and the Engineer's

consultants. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Engineer's or Engineer's consultants' copyrights or other reserved rights.

ARTICLE 2 OWNER

2.1 GENERAL

2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Subparagraph **4.2.1**, the Engineer does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

2.2.1 The Owner shall, at the written request of the Contractor, prior to commencement of the Work and thereafter, furnish to the Contractor reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. Furnishing of such evidence shall be a condition precedent to commencement or continuation of the Work. After such evidence has been furnished, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

2.2.2 Except for permits and fees, including those required under Subparagraph **3.7.1**, which are the responsibility of the Contractor under the Contract Documents, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

2.2.4 Information or services required of the Owner by the Contract Documents shall be furnished by the Owner with reasonable promptness. Any other information or services relevant to the Contractor's performance of the Work under the Owner's control shall be furnished by the Owner after receipt from the Contractor of a written request for such information or services.

2.2.5 Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, such copies of Drawings and Project Manuals as are reasonably necessary for execution of the Work.

2.3 OWNER'S RIGHT TO STOP THE WORK

2.3.1 If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents as required by Paragraph **12.2** or persistently fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Subparagraph **6.1.3**.

2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

2.4.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may after such seven-day period give the Contractor a second written notice to correct such deficiencies within a three-day period. If the Contractor within such three-day period after receipt of such second notice fails to commence and continue to correct any deficiencies, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Engineer's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Engineer. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

3.1 GENERAL

3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Contractor" means the Contractor or the Contractor's authorized representative.

3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Engineer in the Engineer's administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor.

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

3.2.1 Since the Contract Documents are complementary, before starting each portion of the Work, the Contractor shall carefully study and compare the various Drawings and other Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Subparagraph **2.2.3**, shall take field measurements of any existing conditions related to that portion of the Work and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, any errors, inconsistencies or omissions discovered by the Contractor shall be reported promptly to the Engineer as a request for information in such form as the Engineer may require.

3.2.2 Any design errors or omissions noted by the Contractor during this review shall be reported promptly to the Engineer, but it is recognized that the Contractor's review is made in the Contractor's capacity as a Contractor and not as a licensed design professional unless otherwise specifically provided in the Contract Documents. The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations, but any nonconformity discovered by or made known to the Contractor shall be reported promptly to the Engineer.

3.2.3 If the Contractor believes that additional cost or time is involved because of clarifications or instructions issued by the Engineer in response to the Contractor's notices or requests for information pursuant to Subparagraphs **3.2.1** and **3.2.2**, the Contractor shall make Claims as provided in Subparagraphs **4.3.6** and **4.3.7**. If the Contractor fails to perform the obligations of Subparagraphs **3.2.1** and **3.2.2**, the Contractor shall pay such costs and damages to the Owner as would have been avoided if

the Contractor had performed such obligations. The Contractor shall not be liable to the Owner or Engineer for damages resulting from errors, inconsistencies or omissions in the Contract Documents or for differences between field measurements or conditions and the Contract Documents unless the Contractor recognized such error, inconsistency, omission or difference and knowingly failed to report it to the Engineer.

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Engineer and shall not proceed with that portion of the Work without further written instructions from the Engineer. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any resulting loss or damage.

3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for or on behalf of the Contractor or any of its Subcontractors.

3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

3.4 LABOR AND MATERIALS

3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

3.4.2 The Contractor may make substitutions only with the consent of the Owner, after evaluation by the Engineer and in accordance with a Change Order.

3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

3.5 WARRANTY

3.5.1 The Contractor warrants to the Owner and Engineer that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

3.6 TAX

3.6.1 The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor which are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

3.7 PERMITS, FEES AND NOTICES

3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit and other permits and governmental fees, licenses and inspections necessary for proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required when bids are received or negotiations concluded.

3.7.2 The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations and lawful orders of public authorities applicable to performance of the Work.

3.7.3 It is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. However, if the Contractor observes that portions of the Contract Documents are at variance therewith, the Contractor shall promptly notify the Engineer and Owner in writing, and necessary changes shall be accomplished by appropriate Modification.

3.7.4 If the Contractor performs Work knowing it to be contrary to laws, statutes, ordinances, building codes, and rules and regulations without such notice to the Engineer and Owner, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

3.8 ALLOWANCES

3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

3.8.2 Unless otherwise provided in the Contract Documents:

- .1** allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2** Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances;
- .3** whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Clause **3.8.2.1** and (2) changes in Contractor's costs under Clause **3.8.2.2**.

3.8.3 Materials and equipment under an allowance shall be selected by the Owner in sufficient time to avoid delay in the Work.

3.9 SUPERINTENDENT

3.9.1 The Contractor shall employ competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for prior approval by Owner and Engineer Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

3.10.2 The Contractor shall prepare and keep current, for the Engineer's approval, a schedule of submittals which is coordinated with the Contractor's construction schedule and allows the Engineer reasonable time to review submittals.

3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Engineer.

3.11 DOCUMENTS AND SAMPLES AT THE SITE

3.11.1 The Contractor shall maintain at the site for the Owner one record copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to record field changes and selections made during construction, and one record copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Engineer and shall be delivered to the Engineer for submittal to the Owner upon completion of the Work.

3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

3.12.3 Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. The purpose of their submittal is to demonstrate for those portions of the Work for which submittals are required by the Contract Documents the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review by the Engineer is subject to the limitations of Subparagraph **4.2.7**. Informational submittals upon which the Engineer is not expected to take responsive action may be so identified in the Contract Documents. Submittals which are not required by the Contract Documents may be returned by the Engineer without action.

3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Engineer Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate Contractors. Submittals which are not marked as reviewed for compliance with the Contract Documents and approved by the Contractor may be returned by the Engineer without action.

3.12.6 By approving and submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information

contained within such submittals with the requirements of the Work and of the Contract Documents.

3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals until the respective submittal has been approved by the Engineer.

3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Engineer's approval of Shop Drawings, Product Data, Samples, or similar submittals unless the Contractor has specifically informed the Engineer in writing of such deviation at the time of submittal and (1) the Engineer has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals by the Engineer's approval thereof.

3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Engineer on previous submittals. In the absence of such written notice the Engineer's approval of a resubmission shall not apply to such revisions.

3.12.10 The Contractor shall not be required to provide professional services which constitute the practice of Engineer or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Engineer will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Engineer. The Owner and the Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided the Owner and Engineer have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Subparagraph **3.12.10**, the Engineer will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

3.13 USE OF SITE

3.13.1 The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

3.14 CUTTING AND PATCHING

3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate Contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the

Owner or a separate Contractor except with written consent of the Owner and of such separate Contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate Contractor the Contractor's consent to cutting or otherwise altering the Work.

3.15 CLEANING UP

3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove from and about the Project waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials.

3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the cost thereof shall be charged to the Contractor.

3.16 ACCESS TO WORK

3.16.1 The Contractor shall provide the Owner and Engineer access to the Work in preparation and progress wherever located.

3.17 ROYALTIES, PATENTS AND COPYRIGHTS

3.17.1 The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Engineer harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract documents or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Engineer. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Engineer.

3.18 INDEMNIFICATION

3.18.1 To the fullest extent permitted by law and to the extent claims, damages, losses or expenses are not covered by Project Management Protective Liability insurance purchased by the Contractor in accordance with Article 11, the Contractor shall indemnify and hold harmless the Owner, Engineer, Engineer's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Paragraph **3.18**.

3.18.2 In claims against any person or entity indemnified under this Paragraph **3.18** by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Subparagraph **3.18.1** shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ADMINISTRATION OF THE CONTRACT

4.1 ENGINEER

4.1.1 The Engineer is the person lawfully licensed to practice Engineering or an entity lawfully practicing Engineering identified as such in the Agreement and is referred to throughout the Contract Documents as

if singular in number. The term "Engineer" means the Engineer or the Engineer's authorized representative.

4.1.2 Duties, responsibilities and limitations of authority of the Engineer as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Engineer. Consent shall not be unreasonably withheld.

4.1.3 If the employment of the Engineer is terminated, the Owner shall employ a new Engineer against whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the former Engineer.

4.2 ENGINEER'S ADMINISTRATION OF THE CONTRACT

4.2.1 The Engineer will provide administration of the Contract as described in the Contract Documents, and will be an Owner's representative (1) during construction, (2) until final payment is due and (3) with the Owner's concurrence, from time to time during the one-year period for correction of Work described in Paragraph **12.2**. The Engineer will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

4.2.2 The Engineer, as a representative of the Owner, will visit the site at intervals appropriate to the stage of the Contractor's operations (1) to become generally familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed, (2) to endeavor to guard the Owner against defects and deficiencies in the Work, and (3) to determine in general if the Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Engineer will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Engineer will neither have control over or charge of, nor be responsible for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Subparagraph **3.3.1**.

4.2.3 The Engineer will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Engineer will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

4.2.4 Communications Facilitating Contract Administration. Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Engineer about matters arising out of or relating to the Contract. Communications by and with the Engineer's consultants shall be through the Engineer. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate Contractors shall be through the Owner.

4.2.5 Based on the Engineer's evaluations of the Contractor's Applications for Payment, the Engineer will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

4.2.6 The Engineer will have authority to reject Work that does not conform to the Contract Documents. Whenever the Engineer considers it necessary or advisable, the Engineer will have authority to require inspection or testing of the Work in accordance with Subparagraphs **13.5.2** and **13.5.3**, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Engineer nor a

decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Engineer to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

4.2.7 The Engineer will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Engineer's action will be taken with such reasonable promptness as to cause no delay in the Work or in the activities of the Owner, Contractor or separate Contractors, while allowing sufficient time in the Engineer's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Engineer's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Paragraphs **3.3**, **3.5** and **3.12**. The Engineer's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Engineer, of any construction means, methods, techniques, sequences or procedures. The Engineer's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

4.2.8 The Engineer will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Paragraph **7.4**.

4.2.9 The Engineer will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion, will receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment upon compliance with the requirements of the Contract Documents.

4.2.10 If the Owner and Engineer agree, the Engineer will provide one or more project representatives to assist in carrying out the Engineer's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

4.2.11 The Engineer will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Engineer's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If no agreement is made concerning the time within which interpretations required of the Engineer shall be furnished in compliance with this Paragraph **4.2**, then delay shall not be recognized on account of failure by the Engineer to furnish such interpretations until **15** days after written request is made for them.

4.2.12 Interpretations and decisions of the Engineer will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and initial decisions, the Engineer will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions so rendered in good faith.

4.2.13 The Engineer's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

4.3 CLAIMS AND DISPUTES

4.3.1 Definition. A Claim is a demand or assertion by one of the parties seeking, as a matter of right,

adjustment or interpretation of Contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. Claims must be initiated by written notice. The responsibility to substantiate claims shall rest with the party making the Claim.

4.3.2 Time Limits on Claims. Claims by either party must be initiated within **21** days after occurrence of the event giving rise to such Claim or within **21** days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be initiated by written notice to the Engineer and the other party.

4.3.3 Continuing Contract Performance. Pending final resolution of a Claim except as otherwise agreed in writing or as provided in Subparagraph **9.7.1** and Article **14**, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

4.3.4 Claims for Concealed or Unknown Conditions. If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then notice by the observing party shall be given to the other party promptly before Conditions are disturbed and in no event later than **21** days after first observance of the conditions. The Engineer will promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Engineer determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Engineer shall so notify the Owner and Contractor in writing, stating the reasons. Claims by either party in opposition to such determination must be made within **21** days after the Engineer has given notice of the decision. If the conditions encountered are materially different, the Contract Sum and Contract Time shall be equitably adjusted, but if the Owner and Contractor cannot agree on an adjustment in the Contract Sum or Contract Time, the adjustment shall be referred to the Engineer for initial determination, subject to further proceedings pursuant to Paragraph **4.4**.

4.3.5 Claims for Additional Cost. If the Contractor wishes to make Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Paragraph **10.6**.

4.3.6 If the Contractor believes additional cost is involved for reasons including but not limited to (1) a written interpretation from the Engineer, (2) an order by the Owner to stop the Work where the Contractor was not at fault, (3) a written order for a minor change in the Work issued by the Engineer, (4) failure of payment by the Owner, (5) termination of the Contract by the Owner, (6) Owner's suspension or (7) other reasonable grounds, Claim shall be filed in accordance with this Paragraph **4.3**.

4.3.7 CLAIMS FOR ADDITIONAL TIME

4.3.7.1 If the Contractor wishes to make Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

4.3.7.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

4.3.8 Injury or Damage to Person or Property. If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding **21** days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

4.3.9 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

4.3.10 Claims for Consequential Damages. The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes:

- .1** damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2** damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article **14**. Nothing contained in this Subparagraph **4.3.10** shall be deemed to preclude an award of liquidated direct damages, when applicable, in accordance with the requirements of the Contract Documents.

4.4 RESOLUTION OF CLAIMS AND DISPUTES

4.4.1 The Engineer will review Claims and take one or more of the following preliminary actions within ten days of receipt of a Claim: (1) request additional supporting data from the claimant; (2) submit a schedule to the parties indicating when the Engineer expects to take action; (3) reject the: Claim in whole or in part stating reasons for rejection; (4) recommend approval of the Claim by the other party; or (5) suggest a compromise. The Engineer may also, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim.

4.4.2 If a Claim has been resolved, the Engineer will prepare or obtain appropriate documentation.

4.4.3 If a Claim has not been resolved, the party making the Claim shall, within ten days after the Engineer's preliminary response take one or more of the following actions: (1) submit additional supporting data requested by the Engineer; (2) modify the initial Claim; or (3) notify the Engineer that the initial Claim stands.

4.4.4 If a Claim has not been resolved after consideration of the foregoing and of further evidence presented by the parties or requested by the Engineer, the Engineer will notify the parties in writing that the Engineer's decision will be made within seven days, which decision shall be final and binding on the parties. Upon expiration of such time period, the: Engineer will render to the parties the Engineer's written decision relative to the Claim, including any change in the Contract Sum or Contract Time or both. If there is a surety and there appears to be a possibility of a Contractor's default, the Engineer may, but is not obligated to, notify the surety and request the surety's assistance in resolving the: controversy.

ARTICLE 5 SUBCONTRACTORS

5.1 DEFINITIONS

5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate Contractor or Subcontractors of a separate Contractor.

5.1.2 A Sub-Subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-Subcontractor or an authorized representative of the Sub-Subcontractor.

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Engineer the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Engineer will promptly reply to the Contractor in writing stating whether or not the Owner or the Engineer, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Owner or Engineer to reply promptly shall constitute notice of no reasonable objection.

5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Engineer has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

5.2.3 If the Owner or Engineer has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Engineer has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

5.2.4 The Contractor shall not change a Subcontractor, person or entity previously selected if the Owner or Engineer makes reasonable objection to such substitute.

5.3 SUBCONTRACTUAL RELATIONS

5.3.1 By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Engineer. Each subcontract agreement shall preserve and protect the rights of the Owner and Engineer under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-Subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement which may be at variance with the Contract Documents. Subcontractors will similarly make copies of

applicable portions of such documents available to their respective proposed Sub-Subcontractors.

5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner provided that:

- .1** assignment is effective only after termination of the Contract by the Owner for cause pursuant to Paragraph **14.2** and only for those subcontract agreements which the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2** assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

5.4.2 Upon such assignment, if the Work has been suspended for more than **30** days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Paragraph **4.3**.

6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate Contractors and the Owner in reviewing their construction schedules when directed to do so. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate Contractors and the Owner until subsequently revised.

6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights which apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article **3**, this Article **6** and Articles **10**, **11** and **12**.

6.2 MUTUAL RESPONSIBILITY

6.2.1 The Contractor shall afford the Owner and separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Engineer apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the

Contractor so to report shall constitute an acknowledgment that the Owner's or separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

6.2.3 The Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a separate Contractor because of delays, improperly timed activities or defective construction of the Contractor. The Owner shall be responsible to the Contractor for costs incurred by the Contractor because of delays, improperly timed activities, damage to the Work, or defective construction of a separate Contractor.

6.2.4 The Contractor shall promptly remedy damage wrongfully caused by the Contractor to completed or partially completed construction or to property of the Owner or separate Contractors as provided in Subparagraph **10.2.5**.

6.2.5 The Owner and each separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Subparagraph **3.14**.

6.3 OWNER'S RIGHT TO CLEAN UP

6.3.1 If a dispute arises among the Contractor, separate Contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Engineer will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

7.1 GENERAL

7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Engineer; a Construction Change Directive requires agreement by the Owner and Engineer and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Engineer alone.

7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

7.2 CHANGE ORDERS

7.2.1 A Change Order is a written instrument prepared by the Engineer and signed by the Owner, Contractor and Engineer, stating their agreement upon all of the following:

- .1** change in the Work;
- .2** the amount of the adjustment, if any, in the Contract Sum; and
- .3** the extent of the adjustment, if any, in the Contract Time.

7.2.2 Methods used in determining adjustments to the Contract Sum may include those listed in Subparagraph **7.3.3**.

7.3 CONSTRUCTION CHANGE DIRECTIVES

7.3.1 A Construction Change Directive is a written order prepared by the Engineer and signed by the Owner and Engineer, directing a change in the Work prior to agreement on adjustment, if any, in the

Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

7.3.3 If the Construction Change directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1** mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2** unit prices stated in the Contract Documents or subsequently agreed upon;
- .3** cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4** as provided in Subparagraph **7.3.6**.

7.3.4 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Engineer of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

7.3.5 A Construction Change Directive signed by the Contractor indicates the agreement of the Contractor therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

7.3.6 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the method and the adjustment shall be determined by the Engineer on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, a reasonable allowance for overhead and profit. In such case, and also under Clause **7.3.3.3**, the Contractor shall keep and present, in such form as the Engineer may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Subparagraph **7.3.6** shall be limited to the following:

- .1** costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2** costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3** rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4** costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- .5** additional costs of supervision and field office personnel directly attributable to the change.

7.3.7. The amount of credit to be allowed by the Contractor to the Owner for a deletion or change which results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Engineer. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

7.3.8 Pending final determination of the total cost of a Construction Change Directive to the Owner, amounts not in dispute for such changes in the Work shall be included in Applications for Payment

accompanied by a Change Order indicating the parties' agreement with part or all of such costs. For any portion of such cost that remains in dispute, the Engineer will make an interim determination for purposes of monthly certification for payment for those costs. That determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a claim in accordance with Article 4.

7.3.9 When the Owner and Contractor agree with the determination made by the Engineer concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and shall be recorded by preparation and execution of an appropriate Change Order.

7.4 MINOR CHANGES IN THE WORK

7.4.1 The Engineer will have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

ARTICLE 8 TIME

8.1 DEFINITIONS

8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

8.1.2 The date of commencement of the Work is the date established in the Agreement. The date shall not be postponed by the failure to act of the Contractor or of persons or entities for whom the Contractor is responsible.

8.1.3 The date of Substantial Completion is the date certified by the Engineer in accordance with Paragraph **9.8**.

8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

8.2 PROGRESS AND COMPLETION

8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the work.

8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article **11** to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance. Unless the date of commencement is established by the Contract Documents or a notice to proceed given by the Owner, the Contractor shall notify the Owner in writing not less than five days or other agreed period before commencing the Work to permit the timely filing of mortgages, mechanic's liens and other security interests.

8.2.3 The Contractor shall proceed with the project expeditiously and continuously with adequate forces and shall achieve Substantial Completion within the Contract Time. Contractor shall progress with and maintain continuous construction even if construction is ahead of the approved construction schedule. If the percentage dollar value of the completed work is 15% or more below the dollar value of work that should have been completed in accordance with the approved construction schedule, further payment under this contract to Contractor shall be suspended until the percentage dollar value of completed work

is within 5% of the dollar value of work that should have been completed in accordance with the approved construction schedule.

8.3 DELAYS AND EXTENSIONS OF TIME

8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Engineer, or of an employee of either, or of a separate Contractor employed by the Owner, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries; unavoidable casualties or other causes beyond the Contractor's control, then the Contract Time shall be extended by Change Order for such reasonable time as the Engineer may determine.

8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Paragraph 4.3.

ARTICLE 9 PAYMENTS AND COMPLETION

9.1 CONTRACT SUM

9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

9.2 SCHEDULE OF VALUES

9.2.1 Before the first Application for Payment, the Contractor shall submit to the Engineer a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Engineer may require. This schedule, unless objected to by the Engineer, shall be used as a basis for reviewing the Contractor's Applications for Payment.

9.3 APPLICATIONS FOR PAYMENT

9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Engineer an itemized Application for Payment for operations completed in accordance with the schedule of values. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Engineer may require, such as copies of requisitions from Subcontractors and material suppliers, and reflecting retainage if provided for in the Contract Documents.

9.3.1.1 As provided in Subparagraph 7.3.8, such applications may include requests for payment on account of changes in the Work which have been properly authorized by Construction Change Directives, or by interim determination of the Engineer, but not yet included in Change Orders.

9.3.1.2 Such applications may not include requests for payment for portions of the Work for which the Contractor does not intend to pay to a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an

Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

9.4 CERTIFICATES FOR PAYMENT

9.4.1 The Engineer will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Engineer determines is properly due, or notify the Contractor and Owner in writing of the Engineer's reasons for withholding certification in whole or in part as provided in Subparagraph **9.5.1**.

9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Engineer to the Owner, based on the Engineer's evaluation of the Work and the data comprising the Application for Payment, that the Work has progressed to the point indicated and that, to the best of the Engineer's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Engineer. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Engineer has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

9.5 DECISIONS TO WITHHOLD CERTIFICATION

9.5.1 The Engineer may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Engineer's opinion the representations to the Owner required by Subparagraph **9.4.2** cannot be made. If the Engineer is unable to certify payment in the amount of the Application, the Engineer will notify the Contractor and Owner as provided in Subparagraph **9.4.1**. If the Contractor and Engineer cannot agree on a revised amount, the Engineer will promptly issue a Certificate for Payment for the amount for which the Engineer is able to make such representations to the Owner. The Engineer may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Engineer's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Subparagraph **3.3.2**, because of:

- .1** defective Work not remedied;
- .2** third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3** failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4** reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5** damage to the Owner or another Contractor;
- .6** reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7** persistent failure to carry out the Work in accordance with the Contract Documents.

9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

9.6 PROGRESS PAYMENTS

9.6.1 After the Engineer has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Engineer.

9.6.2 The Contractor shall promptly pay each Subcontractor, upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of such Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-Subcontractors in a similar manner.

9.6.3 The Engineer will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Engineer and Owner on account of portions of the Work done by such Subcontractor.

9.6.4 Neither the Owner nor Engineer shall have an obligation to pay or to see to the payment of money to a Subcontractor except as may otherwise be required by law.

9.6.5 Payment to material suppliers shall be treated in a manner similar to that provided in Subparagraphs **9.6.2**, **9.6.3** and **9.6.4**.

9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

9.7 FAILURE OF PAYMENT

9.7.1 If the Engineer does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Engineer or awarded by arbitration, then the Contractor may, upon seven additional days' written notice to the Owner and Engineer, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

9.8 SUBSTANTIAL COMPLETION

9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Engineer a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

9.8.3 Upon receipt of the Contractor's list, the Engineer will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Engineer's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Engineer. In such case, the Contractor shall then submit a request for another inspection by the Engineer to determine Substantial Completion.

9.8.4 When the Work or designated portion thereof is substantially complete, the Engineer will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate, Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

9.9 PARTIAL OCCUPANCY OR USE

9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Article 11 and authorized by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Engineer as provided under Subparagraph 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Engineer.

9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Engineer shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

9.10 FINAL COMPLETION AND FINAL PAYMENT

9.10.1 Upon receipt of written notice that the Work is ready for final inspection and acceptance and upon

receipt of a final Application for Payment, the Engineer will promptly make such inspection and, when the Engineer finds the Work acceptable under the Contract Documents and the Contract fully performed, the Engineer will promptly issue a final Certificate for Payment stating that to the best of the Engineer's knowledge, information and belief, and on the basis of the Engineer's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Engineer's final Certificate for Payment will constitute a further representation that conditions listed in Subparagraph 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Engineer (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Engineer so confirms, the Owner shall, upon application by the Contractor and certification by the Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Engineer prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from:

- .1 liens, claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

10.1.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety

precautions and programs in connection with the performance of the Contract.

10.2 SAFETY OF PERSONS AND PROPERTY

10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

- .1** employees on the Work and other persons who may be affected thereby;
- .2** the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-Subcontractors; and
- .3** other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

10.2.2 The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Clauses **10.2.1.2** and **10.2.1.3** caused in whole or in part by the Contractor, a Subcontractor, a Sub-Subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Clauses **10.2.1.2** and **10.2.1.3**, except damage or loss attributable to acts or omissions of the Owner or Engineer or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Paragraph **3.18**.

10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Engineer.

10.2.7 The Contractor shall not load or permit any part of the construction or site to be loaded so as to endanger its safety.

10.3 EMERGENCIES

10.3.1 In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Paragraph **4.3** and Article **7**.

ARTICLE 11 INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable.

- .1** claims under workers' compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed;
- .2** claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3** claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4** claims for damages insured by usual personal injury liability coverage;
- .5** claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6** claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7** claims for bodily injury or property damage arising out of completed operations; and
- .8** claims involving contractual liability insurance applicable to the Contractor's obligations under Paragraph **3.18**.

11.1.2 The insurance required by Subparagraph **11.1.1** shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverage's, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until date of final payment and termination of any coverage required to be maintained after final payment.

11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. These certificates and the insurance policies required by this Paragraph **11.1** shall contain a provision that coverage's afforded under the policies will not be canceled or allowed to expire until at least **30** days prior written notice has been given to the Owner. If any of the foregoing insurance coverage's are required to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment as required by Subparagraph **9.10.2**. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness in accordance with the Contractor's information and belief.

11.2 INDEMNIFICATION AND INSURANCE

11.2.1. Contractor agrees to save harmless, indemnify, and defend Owner and its, agents, officers and employees from any and all claims, losses, penalties, interest, demands, judgments, and costs of suit, including attorneys fees and paralegals' fees, for any expense, damage or liability incurred by any of them, whether for personal injury, death, property damage, direct or consequential damages, or economic loss, including environmental impairment, arising directly or indirectly on account of or in connection with the work done by Contractor under this agreement or by any person, firm or corporation (including but not limited to the Engineer/engineer) to whom any portion of the work is subcontracted by Contractor or resulting from the use by Contractor, or by any one for whom Contractor is legally liable, of any materials, tools, machinery or other property of Owner. Owner and Contractor agree the first \$100.00 of the contract amount paid by Owner to Contractor shall be given as separate consideration for this indemnification, and any other indemnification of Owner by Contractor provided for within the Contract Documents, the sufficiency of such separate consideration being acknowledged by Contractor by

Contractor's acceptance and execution of the agreement. The Contractor's obligation shall not be limited by, or in any way to, any insurance coverage or by any provision in or exclusion or omission from any policy of insurance. The Contractor agrees to pay on behalf of Santa Rosa County, as well as provide a legal defense for the Owner, both of which will be done only if and when requested by the Owner, for all claims made. Such payment on the behalf of the Owner shall be in addition to any and all other legal remedies available to the Owner and shall not be considered to be the Owner's exclusive remedy.

11.2.2. Contractor shall obtain and carry, at all times during its performance under the Contract Documents, insurance of the types and in the amounts set forth in Article 11. All insurance policies shall be from responsible companies duly authorized to do business in the State of Florida and/or responsible risk retention group insurance companies or trusts which are registered with the State of Florida. Foreign or offshore insurance carriers are not acceptable for work under this contract unless admitted to the State of Florida. All commercial insurance carriers providing the Contractor with required insurance shall be "A" (excellent) rated with a minimum financial size category of "IX", according to the A. M. Best Key Rating Guide, latest edition. Within ten (10) calendar days after notice of award is received by Contractor and prior to the commencement of work, Contractor shall provide Owner with properly executed certificates of insurance to evidence Contractor's compliance with the insurance requirements of the Contract Documents. Said certificates of insurance shall be on forms approved by Owner, such as "Acord Form 25". The certificates of insurance shall be personally, manually signed by the authorized representatives of the insurance company/companies shown on the certificates of insurance, with proof that they are authorized representatives thereof. Certificates of insurance shall be mailed to Santa Rosa County Board of County Commissioners in care of: Hunter Walker, County Administrator, 6495 Caroline Street, Suite D, Milton, Florida 32570. In addition, true and exact copies of all insurance policies required hereunder shall be provided to Owner, on a timely basis, when requested by Owner.

11.2.3. The certificates of insurance and required insurance policies shall contain provisions that thirty (30) days prior written notice by registered or certified mail shall be given Owner of any cancellation, intent not to renew, or reduction in the policies or coverage's, except in the application of the aggregate limits provisions. In the event of a reduction in the aggregate limit of any policy, Contractor shall immediately take steps to have the aggregate limit reinstated to the full extent permitted under such policy.

11.2.4. All insurance coverage's of the Contractor shall be primary to any insurance or self insurance program carried by the Owner applicable to this project. The acceptance by Owner of any certificate of insurance does not constitute approval or agreement by the Owner that the insurance requirements have been satisfied or that the insurance policy shown on the certificate of insurance is in compliance with the requirements of the Contract Documents. No work shall commence at the project site unless and until the required certificates of insurance are received by the Owner

11.2.5. Contractor shall require each of its Subcontractors to procure and maintain, until the completion of the Subcontractor's work, insurance of the types and to the limits specified in Article 11, unless such insurance requirements for the Subcontractor is expressly waived in writing by the Owner. All liability insurance policies, other than professional liability, worker's compensation and employer's liability policies, obtained by Contractor to meet the requirements of the Contract Documents shall name the Santa Rosa County Board of County Commissioners as an additional insured and shall contain severability of interest provisions. The Board of County Commissioners shall also be designated as certificate holder with the address of 6495 Caroline Street, Suite M, Milton, Florida 32570. If any insurance provided pursuant to the Contract Documents expires prior to the completion of the work, renewal certificates of insurance and, if requested by Owner, certified, true copies of the renewal policies, shall be furnished by Contractor within thirty (30) days prior to the date of expiration. Upon expiration of an insurance policy term during the course of work under the contract, succeeding insurance policies shall be consecutive to the expiring policy.

11.2.6 All liability policies shall be underwritten on the "occurrence" basis, unless otherwise approved in writing by the county division of risk management. "Claims made" policies, if approved by the risk manager, and subsequent insurance certificates shall provide a "retro-date" which shall include the effective date of the contract. "Claims-made" renewals or carrier and policy replacements shall reflect the original "retro-date."

11.2.7 Should at any time the Contractor not maintain the insurance coverage's required herein, the Owner may terminate the agreement or at its sole discretion shall be authorized to purchase such coverage's and charge the Contractor for such coverage's purchased. The Owner shall be under no obligation to purchase such insurance, nor shall it be responsible for the coverage's purchased or the insurance company or companies used. The decision of the Owner to purchase such insurance coverage's shall in no way be construed to be a waiver of any of its rights under the Contract Documents.

11.2.8 Contractor shall submit to Owner a copy of all accident reports arising out of any personal injuries or property damages arising or alleged to have arisen on account of any work by Contractor or Subcontractor under the Contract Documents.

11.2.9 Duty to Provide Legal Defense. The Contractor agrees to pay, to Santa Rosa County, as well as provide a legal defense for the Owner, which shall include attorneys' fees and costs, both of which will be done only if and when requested by the Owner, for all claims as described in paragraph **13.1**. Such payment on the behalf of the Owner shall be in addition to any and all other legal remedies available to the Owner and shall not be considered to be the Owner's exclusive remedy.

11.3 PERFORMANCE BOND AND PAYMENT BOND

11.3.1 BONDS.

11.3.1 Contractor shall provide performance and payment bonds, per AIA format, in the amount of 100% of the contract amount, the costs of which to be paid by Contractor. The performance and payment bonds shall be underwritten by a surety authorized to do business in the State of Florida and otherwise acceptable to Owner; provided; however, the surety shall be rated as "A" or better and Class XII or higher rating as to financial size category and the amount required shall not exceed 2% of the reported policy holders surplus, all as reported in the most current best key rating guide, published by A.M. Best Company, Inc. of 75 Fulton Street, New York, New York 10038.

11.3.2 If the surety for any bond furnished by Contractor is declared bankrupt, becomes insolvent, its right to do business is terminated in the State of Florida, or it ceases to meet the requirements imposed by the Contract Document, the Contractor shall, within five (5) calendar days thereafter, substitute another bond and surety, both of which shall be subject to the Owner's approval.

11.3.3 As per Florida Statutes, Section 255.05, the Contractor shall be required to execute and record the performance and payment bonds. The bonds must state the name and principal business address of both the principal and the surety and a description of the project sufficient to identify it.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

12.1 UNCOVERING OF WORK

12.1.1 If a portion of the Work is covered contrary to the Engineer's request or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Engineer, be uncovered for the Engineer's examination and be replaced at the Contractor's expense without change in the Contract Time.

12.1.2 If a portion of the Work has been covered which the Engineer has not specifically requested to examine prior to its being covered, the Engineer may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate Contractor in which event the Owner shall be responsible for payment of such costs.

12.2 CORRECTION OF WORK

12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

12.2.1 The Contractor shall promptly correct Work rejected by the Engineer or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections and compensation for the Engineer's services and expenses made necessary thereby, shall be at the Contractor's expense.

12.2.2 AFTER SUBSTANTIAL COMPLETION

12.2.2.1 In addition to the Contractor's obligations under Paragraph **3.5**, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Subparagraph **9.9.1**, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Engineer, the Owner may correct it in accordance with Paragraph **2.4**. -

12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work.

12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Paragraph **12.2**.

12.2.3 The Contractor shall remove from the site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate Contractors caused by the Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents.

12.2.5 Nothing contained in this Paragraph **12.2** shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the one-year period for correction of Work as described in Subparagraph **12.2.2** relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time

within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

12.3 ACCEPTANCE OF NONCONFORMING WORK

12.3.1 If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

13.1 GOVERNING LAW

13.1.1 The Contract shall be governed by the law of the place where the Project is located.

13.2 SUCCESSORS AND ASSIGNS

13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to partners, successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Subparagraph **13.2.2**, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

13.2.2 The Owner may, without consent of the Contractor, assign the Contract to an institutional lender providing construction financing for the Project. In such event, the lender shall assume the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

13.3 WRITTEN NOTICE

13.3.1 Written notice shall be deemed to have been duly served if delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended, or if delivered at or sent by registered or certified mail to the last business address known to the party giving notice.

13.4 RIGHTS AND REMEDIES

13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

13.4.2 No action or failure to act by the Owner, Engineer or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

13.5 TESTS AND INSPECTIONS

13.5.1 Tests, inspections and approvals of portions of the Work required by the Contract Documents or by laws, ordinances, rules, regulations or orders of public authorities having jurisdiction shall be made at an appropriate time. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Engineer timely notice of when and where tests and inspections are to be made so that the Engineer may be present for such procedures. The Owner shall bear costs of tests, inspections or approvals which do not become requirements until after bids are received or negotiations

concluded.

13.5.2 If the Engineer, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Subparagraph **13.5.1**, the Engineer will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Engineer of when and where tests and inspections are to be made so that the Engineer may be present for such procedures. Such costs, except as provided in Subparagraph **13.5.3**, shall be at the Owner's expense.

13.5.3 If such procedures for testing, inspection or approval under Subparagraphs **13.5.1** and **13.5.2** reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Engineer's services and expenses shall be at the Contractor's expense.

13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Engineer.

13.5.5 If the Engineer is to observe tests, inspections or approvals required by the Contract Documents, the Engineer will do so promptly and, where practicable, at the normal place of testing.

13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

13.6 INTEREST

13.6.1 Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

13.7 COMMENCEMENT OF STATUTORY LIMITATION PERIOD

13.7.1 As between the Owner and Contractor:

- .1** Before Substantial Completion. As to acts or failures to act occurring prior to the relevant date of Substantial Completion, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than such date of Substantial Completion;
- .2** Between Substantial Completion and Final Certificate for Payment. As to acts or failures to act occurring subsequent to the relevant date of Substantial Completion and prior to issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of issuance of the final Certificate for Payment; and
- .3** After Final Certificate for Payment. As to acts or failures to act occurring after the relevant date of issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of any act or failure to act by the Contractor pursuant to any Warranty provided under Paragraph **3.5**, the date of any correction of the Work or failure to correct the Work by the Contractor under Paragraph **12.2**, or the date of actual commission of any other act or failure to perform any duty or obligation by the Contractor or Owner, whichever occurs last.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 TERMINATION BY THE CONTRACTOR

14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of **30** consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-Subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons.

- .1** issuance of an order of a court or other public authority having jurisdiction which requires all Work to be stopped;
- .2** an act of government, such as a declaration of national emergency which requires all Work to be stopped;
- .3** because the Engineer has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Subparagraph **9.4.1**, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4** the Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Subparagraph **2.2.1**.

14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-Subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Paragraph **14.3** constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or **120** days in any 365-day period, whichever is less.

14.1.3 If one of the reasons described in Subparagraph **14.1.1** or **14.1.2** exists, the Contractor may, upon seven days' written notice to the Owner and Engineer, terminate the Contract and recover from the Owner only as provided in Subparagraph **14.3.1**.

14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has persistently failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Engineer, terminate the Contract and recover from the Owner only as provided in Subparagraph **14.3.1**.

14.2 TERMINATION FOR DEFAULT.

14.2.1 Contractor shall be considered in material default of the agreement and such default shall be considered cause for Owner to terminate the agreement, in whole or in part, as further set forth in this section, if Contractor: (1) fails to begin the work under the Contract Documents within the time specified herein; or (2) fails to properly and timely perform the work as directed by the Owner or as provided for in the approved progress schedule; or (3) performs the work unsuitably or neglects or refuses to remove materials or to correct or replace such work as may be rejected as unacceptable or unsuitable; or (4) discontinues the prosecution of the work; or (5) fails to resume work which has been suspended within a reasonable time after being notified to do so; or (6) becomes insolvent or is declared bankrupt, or commits any act of bankruptcy; or (7) allows any final judgment to stand against it unsatisfied for more than ten (10) days; or (8) makes an assignment for the benefit of creditors; or (9) fails to obey any applicable codes, laws, ordinances, rules or regulations with respect to the work; or (10) materially breaches any other provision of the Contract Documents.

14.2.2 Owner shall notify Contractor in writing of Contractor's default(s). If Owner determines that Contractor has not remedied and cured the default(s) within seven (7) calendar days following receipt by Contractor of said written notice, then Owner, at its option, without releasing or waiving its rights and remedies against the Contractor's sureties and without prejudice to any other right or remedy it may be

entitled to hereunder or by law, may terminate Contractor's right to proceed under the agreement, in whole or in part, and take possession of all or any portion of the work and any materials, tools, equipment, and appliances of Contractor, take assignments of any of Contractor's subcontracts and purchase orders, and complete all or any portion of Contractor's work by whatever means, method or agency which Owner, in its sole discretion, may choose.

14.2.3 If Owner deems any of the foregoing remedies necessary, Contractor agrees that is shall not be entitled to receive any further payments hereunder until after the project is completed. All monies expended and all of the costs, losses, damages and extra expenses, including all management, administrative and other overhead and other direct and indirect expenses (including attorneys' fees) or damages incurred by Owner incident to such completion, shall be deducted from the contract amount, and if such expenditures exceed the unpaid balance of the contract amount, Contractor agrees to pay promptly to Owner on demand the full amount of such excess, including costs of collection, attorney's fees (including appeals) and interest thereon at the maximum legal rate of interest until paid. If the unpaid balance of the contract amount exceeds all such costs, expenditures and damages incurred by the Owner to complete the work, such excess shall be paid to the Contractor. The amount to be paid to the Contractor or Owner, as the case may be, and this obligation for payment shall survive termination of the agreement.

14.2.4. The liability of Contractor hereunder shall extend to and include the full amount of any and all sums paid, expenses and losses incurred, damages sustained, and obligations assumed by Owner in good faith under the belief that such payments or assumptions were necessary or required, in completing the work and providing labor, materials, equipment, supplies, and other items therefor or re-letting the work, in settlement, discharge or compromise of any claims, demands, suits, and judgments pertaining to or arising out of the work hereunder.

14.2.5 If, after notice of termination of Contractor's right to proceed pursuant to this section, it is determined for any reason that Contractor was not in default, or that its default was excusable, or that Owner is not entitled to the remedies against Contractor provided herein, then Contractor's remedies against Owner shall be the same as and limited to those afforded Contractor below under subsection **14.3.1**, termination for convenience.

14.3 TERMINATION FOR CONVENIENCE AND RIGHT OF SUSPENSION.

14.3.1. Owner shall have the right to terminate this agreement without cause upon seven (7) calendar day's written notice to Contractor. In the event of such termination for convenience, Contractor's recovery against Owner shall be limited to that portion of the contract amount earned through the date of termination, together with any retainage withheld and reasonable termination expenses incurred, but Contractor shall not be entitled to any other or further recovery against Owner, including, but not limited to, damages or any anticipated profit on portions of the work not performed.

14.3.2. Owner shall have the right to suspend all or any portions of the work upon giving Contractor two (2) calendar days' prior written notice of such suspension. If all or any portion of the work is so suspended, Contractor's sole and exclusive remedy shall be to seek an extension of time to its schedule in accordance with the procedures set forth in the Contract Documents. In no event shall the Contractor be entitled to any additional compensation or damages. Provided, however, if the ordered suspension exceeds three (3) months, the Contractor shall have the right to terminate the agreement with respect to that portion of the work which is subject to the ordered suspension.

SECTION 00800 SUPPLEMENTARY CONDITIONS

1.0 GENERAL CONDITIONS:

The following conditions supplement, modify, change, delete from or add to the General Conditions of the Contract, Articles 1 through 14. Where an Article of the General Conditions is modified or a Paragraph, Subparagraph, or Clause thereof is modified or deleted by these supplement, the unaltered provisions of that Article, Paragraph, Subparagraph, or Clause shall remain in effect.

2.0 FORM OF CONTRACT AND BONDS:

The contract form as furnished by Santa Rosa County shall be utilized. Performance and Payment Bond forms as approved by Santa Rosa County shall be utilized.

3.0 MATERIALS:

Whenever "or approved equal" is indicated, items proposed for use shall be submitted for Engineer's approval. Wherever an item or class of material is specified exclusively by trade name or by name of the maker or by catalog reference, only such items shall be used unless previously approved through addenda by the Engineer. Should the Contractor desire to substitute another material for one or more specified by name they shall state the credit or extra involved by the use of such material, in their bid. No such materials shall be used unless approved in writing by the Engineer.

4.0 PROGRESS CHART:

Within ten (10) days after receipt of signed Contract the Contractor shall file with the Engineer a progress chart showing the order in which the Contractor proposes to accomplish the work, the dates on which he proposes to begin the various parts of the work and the dates he contemplates completing them.

5.0 TIME FOR COMPLETION:

Time for completion of all work included in this contract shall not exceed 90 days from date of written Notice to proceed. The number of days allowed does not include an allowance for calendar days missed due to weather. Extension of time will be allowed for delays due to weather if properly documented and reported to the Engineer.

6.0 PRECONSTRUCTION CONFERENCE:

Within ten (10) days after the effective date of the agreement, but before Contractor starts the work at the Project site, a conference will be held for review and acceptance of the schedules referred to in paragraph 4.0, to establish procedures for processing applications for payment, and to establish a working understanding among the parties as to the work.

7.0 RECORD KEEPING

The Contractor shall maintain all relevant project records for three years after the Owner has made final payment to the Contractor.

END OF SECTION 00800

**SECTION 02050
DEMOLITION**

PART 1-GENERAL

1.1 SUMMARY:

1.1.1. Demolition and removal of structures/slabs/pavement.

1.1.2. Required demolition is indicated on the drawings and is described herein.

1.2 RELATED WORK:

1.2.1. Clearing and Grubbing, Section 02100

1.2.2. Earthwork, Section 02200

1.3 QUALITY ASSURANCE:

1.3.1. Contractor Qualifications: Minimum of 5 years experience in demolition of comparable structures.

1.3.2. Requirements of Regulatory Agencies:

1.3.2.1. Comply with requirements of local ordinances.

1.3.2.2. Comply with requirements of local Public Health Authority

1.3.2.3. Comply with local utility companies and/or utility districts.

1.3.2.4. Comply with State and Federal regulations.

1.4 SUBMITTALS:

1.4.1. Certificates of severance of utility services.

1.4.2. Permit for transport and disposal of debris.

1.4.3. Demolition procedures and operational sequence for review by Owner's Representative.

1.5 JOB CONDITIONS:

1.5.1. Occupancy:

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- 1.5.1.1. Adjacent structures will not be vacated during demolition activities.
- 1.5.1.2. Existing facility operations exist on adjacent parcels. Contractor shall maintain access to adjacent property owner at all times.

1.5.2. Existing Conditions:

- 1.5.2.1. After the project is begun, the Contractor is responsible for the condition of structures to be demolished. The owner does not warrant that the condition of structures to be demolished will not have changed since the time of inspection for bidding purposes.
 - 1.5.2.2. Contractor shall verify that demolition activities associated with utility removal do not impact adjacent property owner services.
- 1.5.3. Unforeseen Conditions: Should unforeseen conditions be encountered that affect design or function of project, the contractor shall report immediately to the engineer. While awaiting the engineer's response, reschedule operations if possible to avoid delay of overall project.
- 1.5.4. Protection: Erect erosion control devices to prevent sediment runoff.

1.6 MAINTAINING TRAFFIC:

- 1.6.1. Ensure minimum interference with roads and streets. Maintain safe access to adjacent facilities at all times. Any closure must have prior approval of the County Engineer.
- 1.6.2. Do not close or obstruct streets, sidewalks, alleys or passageways without permission from authorities having jurisdiction. See Clearing, Grubbing, and Stripping, Section 02100.

PART 2 - EXECUTION:

- 2.1 SCHEDULE: Do not commence work until conditions are acceptable to Owner's Representative.
- 2.2 PREPARATION:
 - 2.2.1. Arrange for shut off, and verify termination of utility services to include removing meters and capping lines.
 - 2.2.2. Protect items scheduled to remain for Owner.

2.2.3. Disconnect and cap indicated utilities before starting demolition operations.

2.2.4. Identify location of capped utilities on project record documents.

2.3 DEMOLITION:

2.3.1. Sprinkle debris to limit dust to lowest practicable level.

2.3.2. Break concrete and masonry into sections less than 3 ft. in any dimension.

2.3.3. Remove on-grade and covered slabs and appertained structures as shown on drawings.

2.3.4. Completely remove below grade construction, including foundation and above grade signs and footings.

2.3.5. Removal of water, sewer, electric, and gas lines shall be coordinated and according to local utility districts or companies.

2.4 FILLING BELOW GRADE AREAS AND VOIDS:

2.4.1. Below-grade areas and voids resulting from demolition of structures which occur in areas scheduled for new construction or pavements shall be filled or excavated further, as appropriate, according to requirements specified elsewhere in these specifications.

2.4.2. Areas not scheduled for new construction or pavements shall be filled according to requirements specified in this section.

2.4.3. Completely fill below-grade areas and voids resulting from demolition of structures.

2.4.4. Use only clean, non-frozen, and approved soil material, stone, gravel, or sand that is free from deleterious materials.

2.4.5. Do not place fill on saturated or frozen grade, frost, or deleterious material.

2.4.5. Place fill materials in 6 inch loose lifts and compact at optimum moisture content to original density of adjacent ground.

2.4.7. Grade completed surface to drain and to meet adjacent contours.

2.5 DISPOSAL:

2.5.1. Remove demolition debris daily.

2.5.2. Burning will not be permitted on project site.

2.5.3. Transport demolition debris to off-site and dispose of in a legal manner.

2.6.1 MEASUREMENT AND PAYMENT: Demolition shall be measured for payment by lump sum. Compensation for lump sum will include furnishing all materials, labor, equipment, tools, permits, and incidentals required to accomplish all work in accordance with the plans and these specifications.

END OF SECTION 02050

SECTION 02100
CLEARING, GRUBBING, AND STRIPPING

PART 1-GENERAL

- 1.1 DESCRIPTION: This Section describes the work included in clearing, grubbing, stripping, and otherwise preparing the project site for construction operations.
- 1.2 EXISTING TREES AND SHRUBBERY: Existing trees, shrubbery, and other vegetative material may not be shown on the drawings. Inspect the site as to the nature, location, size, and extent of vegetative material to be removed or preserved, as specified herein. Trees located directly on the right of way line are to remain.
- 1.3 CLEARING AND GRUBBING LIMITS: All excavation and embankment areas associated with new structures, slabs, roadway and general grading areas which are disturbed shall be cleared and grubbed.

PART 2 - EXECUTION

- 2.1 PRESERVATION OF EXISTING TREES, SHRUBS, AND OTHER PLANT MATERIAL
- 2.1.1 All plant materials (trees, shrubbery, and plants) beyond the limits of clearing and grubbing shall be saved and protected from damage resulting from work- No filling, excavating, trenching, or stockpiling of materials will be permitted within the drip line of these plant materials. The drip line is defined as a circle drawn by extending a line vertically to the ground from the outermost branches of a plant or group of plants. To prevent soil compaction within the drip line area, no equipment will be permitted within this area.
- 2.1.2 When trees are close together, restrict entry to area within drip line by fencing. In areas where no fence is erected, the trunks of all trees 2 inches or greater in diameter shall be protected by encircling the trunk entirely with boards held securely by 12-gauge wire and staples. This protection shall extend from ground level to a height of 6 feet. Cut and remove tree branches where such cutting is necessary to effect construction operation. Remove branches other than those required to effect the work to provide a balanced appearance of any tree. Sears resulting from the removal of branches shall be treated with tree sealant.
- 2.2 CLEARING AND GRUBBING
- 2.2.1 Clearing and grubbing shall be performed in the areas indicated and where required to provide adequate work space areas, including ditches, where fill will be placed and where structures will be erected, and including spaces for control stakes and hubs for pipeline

work. Should such items be damaged, they shall be replaced in kind or restored to at least as good condition as that in which they were found immediately before the work was begun, at the expense of the Contractor and to the satisfaction of the Engineer.

- 2.2.2 All weeds, rubbish and all other obstructions resting on or protruding through the surface of existing ground, shall be collected and satisfactorily disposed of as specified herein and in compliance with the applicable laws and regulations. All such material shall be removed to a depth of one foot below finish grade.
- 2.2.3 Where excavation is performed within areas cleared and grubbed, all stumps, roots over one inch in diameter, and deleterious material thereby exposed shall be removed to a depth of one foot below the excavated surface.
- 2.2.4 Where debris is removed from areas other than those where subsequent excavation, filling, and grading will be done, no depressions shall be left, but the resulting holes shall be filled and neatly graded to conform to the grades indicated on the drawings.

2.3 STRIPPING

- 2.3.1 Areas to be Stripped: All excavation and embankment areas associated with new structures, slabs, walks, and roadway shall be stripped. Stockpile areas shall be stripped.
- 2.3.2 Stripping: Remove and dispose of all organic sod, topsoil, grass and grass roots, and other objectionable material remaining after clearing and grubbing from the areas designated to be stripped.

2.4 DISPOSAL OF CLEARING AND GRUBBING DEBRIS

- 2.4.1 All material removed in clearing and grubbing shall be removed from the project site and disposed of as promptly as practical and shall not be left until the completion of the Contract.
- 2.4.2 Combustible clearing and grubbing materials from the site maybe burned in accordance with all local laws, codes, and ordinances. All necessary permits for burning shall be secured by the Contractor at his own expense. In the event permits for burning are denied for whatever reason the Contractor shall be responsible for disposing, clearing and grubbing material at a suitable city, county or private dump in accordance with all applicable laws and regulations. All dumping charges are to be paid by the Contractor.
- 2.4.3. The use of herbicides or blasting in clearing and grubbing is specifically prohibited.

END OF SECTION 02100

**SECTION 02200
EARTHWORK**

PART1-GENERAL

- 1.1 SCOPE: The work under this section includes the furnishing of all labor, materials, tools and equipment necessary to complete the earthwork shown on the drawings and specified herein, including rough grading.
- 1.2 GENERAL REQUIREMENTS:
- 1.2.1 Bidders shall examine the site of the work and make their own determination of the character of materials and the conditions to be encountered on the work, and their proposal shall be based upon their own investigations. Neither the Owner nor the Engineer shall be held responsible for variations found to exist between any soils data which may be included for information only, and actual field conditions that develop through the period of construction.
- 1.2.2 Underground structures and utilities shown on the drawings are located according to the best available records. However, it shall be the Contractor's responsibility to acquaint himself with all information and to locate all underground structures and utilities along the line of work in order to avoid conflict with existing facilities. Neither the Owner nor the Engineer shall be held responsible for the inaccuracies or omissions in the location or grade of facilities of this type.
- 1.2.3 Where actual conflicts are unavoidable, work shall be performed so as to cause as little interference as possible with the service rendered by the facility disturbed. Facilities or structures damaged in the prosecution of the work shall be repaired immediately at the Contractor's expense, in conformance with the best standard practice, to the satisfaction of the facility owner and to the extent required, including replacement.
- 1.2.4 Benchmarks and other reference points shall be carefully maintained and, if disturbed or destroyed by the Contractor, shall be replaced by a Professional Surveyor registered to practice in the State of Florida, to the satisfaction of the Engineer and at no additional cost to the Owner. Location of benchmarks and other reference points not shown on the drawings but used during construction shall be recorded on the Contractor's "as-builts" of the Contract Drawings.
- 1.2.5 On paved surfaces the Contractor shall not use or operate tractors, bulldozers, or other power operated equipment which would damage such surfaces. All surfaces which have been damaged by the Contractor's operations shall be restored to a condition at least equal to that in which they were found immediately before work was begun. Suitable materials

and methods as determined by the Engineer shall be used for such restoration.

- 1.2.6 Soil boring data, including groundwater elevations or conditions, are presented only for informational purposes. Data indicates certain conditions found and is limited to the exact locations and dates recorded. The inclusion of such data shall not be interpreted as an indication of conditions that may actually be encountered throughout the period of construction.

PART 2 - EXECUTION

2.1 STRIPPING AND STOCKPILING TOPSOIL

- 2.1.1 Topsoil suitable for final grading operations shall be stripped and stockpiled for reuse. Unsuitable material shall be removed from the site and disposed of in a manner satisfactory to the Engineer at no additional cost to the Owner.
- 2.1.2 The Owner reserves the right to claim and use for his own benefit all excess spoil material.

2.2 GRADING

- 2.1.2 Grade all areas as indicated. Fill shall be brought to finish grades shown and shall be graded to drain to positive outfall.

- 2.2.2 Overall Area Grading for Which No Grades are Indicated:
Within the limits of construction and outer limits of clearing and grubbing, all holes and other depressions shall be filled, all mounds and ridges cut down, and the area brought to sufficiently uniform control so that the Owner's subsequent mowing operation will not be hindered by irregular terrain. This work shall be done regardless of whether the irregularities were the result of the Contractor's operations or originally existed.

2.3 EXCESS MATERIAL:

- 2.3.1 Excess excavated material suitable for reuse as backfill, shall be immediately disposed of by the Contractor on site as directed by the Engineer or Owner, and at no additional cost to the Owner. Material shall be spread and graded in such a manner as to drain properly and not disturb existing drainage conditions.
- 2.3.2 Excess excavated material not suitable as reuse for backfill shall be immediately removed from the site and disposed of by the Contractor at no expense to the Owner.

- 2.4 UNSUITABLE MATERIAL: If unsuitable material is encountered, the Contractor shall immediately notify the Engineer. The Engineer shall arrange for an independent soils testing firm to define the limits of and quantify the unsuitable material to be removed and replaced. Contractor shall be responsible for the removal, disposal and replacement of unsuitable material. Wet materials will not be considered unsuitable and it is the Contractor's responsibility to dry suitable materials as necessary for use at the site.
- 2.5 DUST CONTROL: Dust control, if arises, will be the contractors responsibility. If, in the opinion of Owner or the Engineer, it is necessary to control dust from time to time during the progress of work, the Contractor shall use water trucks and/or furnish and spread calcium chloride at the site of the work as directed by the Engineer at no additional cost to the Owner.
- 2.6 SILTATION AND EROSION: The Contractor shall take steps and make suitable provisions to minimize siltation and erosion which may result from, or as a result of, his operations during the course of construction of this project. All siltation and erosion control shall be in strict accordance with applicable local, state, and federal requirements. The contractor shall be responsible for removing all erosion control barriers upon completion of the work.
- 2.7 COMPACTION: Refer to cover sheet of plans for density requirements.
- 2.8 TESTING: Testing shall comply with the requirements of paragraph 3.15 of Section 02215 entitled "Excavation, Backfill, and Compaction".

END OF [SECTION 02200](#)

SECTION 02205 - RIPRAP

PART 1-GENERAL

1.1 DESCRIPTION:

- A. The WORK under this Section includes providing all labor, material, tools and equipment necessary for furnishing and placing a protective covering of stone, as shown on the Drawings, or as directed by the ENGINEER.

PART 2 - PRODUCTS

2.1 MATERIALS:

- A. Stone for this WORK shall be hard angular quarry stones and have a percentage of wear of not more than 50 at 500 revolutions as determined by ASTM C 535. The least dimension of any piece of stone shall be not less than $\frac{1}{4}$ its greatest dimension. Rounded boulders or cobbles shall not be used on slopes steeper than 2:1. Stones shall meet the following gradation requirement for Class specified:

Class I

No more than 10% of the stones by total weight shall weigh more than 50 pounds per piece, and no more than 50% of the stones by total weight shall weigh less than 25 pounds per piece.

Class II

No more than ten percent of the stones by total weight shall weigh more than 400 pounds per piece, and no more than 15% of the stones by total weight shall weigh less than 25 pounds per piece. The stones shall be evenly graded and a minimum of 50% by weight of the stones shall weigh 200 pounds or more per piece.

Class III

No more than 10% of the stones by total weight shall weigh more than 1,400 pounds per piece, and no more than 15% of the stones by total weight shall weigh less than 25 pounds per piece. The stones shall be evenly graded and a minimum of 50% by weight of the stones shall weigh 700 pounds or more per piece.

- B. Geotextile Filter cloth designed for use with riprap.

PART 3 - EXECUTION

3.1 CONSTRUCTION:

- A. Foundation or toe trenches and other necessary excavation shall be completed before the placing of riprap is begun. Slopes to be protected with riprap shall be free of brush, trees, stumps, storm debris and other objectionable material and shall be dressed to a reasonably smooth surface.

- B. Geotextile Filter cloth shall then be install per manufacturer's specifications.
- C. The stones shall be handled or placed with an excavator as to secure a stone mass of the thickness, height and length shown on the Drawings, or as staked, with a minimum of voids.
- D. Undesirable voids shall be filled with small stones or spalls. The rock shall be manipulated sufficiently by means of bulldozer, excavator, rock tongs, or other suitable equipment to secure a reasonably regular surface and mass stability.
- E. Riprap protection shall be placed to its full course thickness at one operation and in such manner as to avoid damaging the geotextile filter cloth or displacing the underlying material. Placing of riprap protection layers or by dumping into chutes or by similar methods likely to cause segregation will not be permitted.
- F. All riprap shall be so placed and distributed that there will be no large accumulation or area composed mainly of either the larger or small sizes of stone.
- G. Unless otherwise authorized, the riprap protection shall be placed in conjunction with the construction of the embankment with only sufficient lag in construction of the riprap protection as may be necessary to place geotextile filter cloth and to prevent mixture of embankment and riprap material.
- H. The CONTRACTOR shall dump and sort typical loads of riprap at approved locations, as shown on the Drawings, and shall assist the ENGINEER as needed to sort and measure the stones for the purpose of determining if the riprap is within Specifications. Mechanical equipment as needed to assist in this sorting shall be provided by the CONTRACTOR at no additional cost.

END OF SECTION 02205

SECTION 02215
EXCAVATION, BACKFILL, AND COMPACTION

PART1-GENERAL

- 1.1 DESCRIPTION: This section includes materials, testing, and installation of earthwork for excavations, fills and embankments for structures, pavements, rights-of-way, and trench excavating, backfilling, and compacting for underground pipelines and appurtenant structures.
- 1.2 STANDARDS:
- 1.2.1 Determine the density of soil in place by the sand cone method, ASTM D 1556, by nuclear methods, ASTM D2922; or by the rubber balloon method, ASTM D2167.
 - 1.2.2 Determine laboratory options moisture-density relations of cohesive soils by ASTM D1557 (modified Proctor).
 - 1.2.3 Sample backfill materials by ASTM D75.
 - 1.2.4 For cohesive soils, "relative density" is the ratio, expressed as a percentage, of the in-place dry density to the laboratory maximum dry density as determined by ASTM D 1557 (modified Proctor).
 - 1.2.5 Determine the relative density of non-cohesive soils by ASTM D2049.
- 1.3 DEFINITIONS:
- 1.3.1 Subgrade: The undisturbed material immediately below the bottom of an excavation, below an area of fill, or below a structure.
 - 1.3.2 Excavation: Removal of earth or buried material, either temporarily or permanently, as specified or as necessary for construction of the project.
 - 1.3.3 Over-excavation: Excavation exceeding that specified or shown on the plans.
 - 1.3.4 Backfill: Earth material placed permanently in an excavated area.
 - 1.3.5 Fill: Earth material placed permanently above the existing grade.
 - 1.3.6 Borrow: Earth material brought from off the site to be used as fill or backfill.

- 1.3.7 Structural Backfill: Backfill placed beneath structures and in over-excavated areas
- 1.3.8 Structures: Buildings, foundations, and other man-made, stationary features above or below ground.

PART 2 - PRODUCTS

2.1 BACKFILL AND FILL

2.1.1 For Structures: Backfill and fill shall be clean soils that is free from clay balls containing no more than 10% by weight passing the No. 200 sieve. The gradation of this granular material shall be such as to achieve the specified compaction.

2.1.2 For pipe and appurtenance structures, conform as follows:

2.1.2.1 First Lift: From the excavation grade to a level 12 inches below the top of the pipeline. Exclude material with fragments larger than the following:

Pipe Type	Fragment Size (Greatest Dimension-Inches)
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Concrete, steel, cast or ductile iron and corrugated metal	2
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Polyvinyl Chloride (PVC) and Polyethylene (PE)	½
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2.1.2.2 Second Lift: From the top of the First Lift to the ground surface. Exclude material with fragments larger than six inches.

2.1.3 In the event there is insufficient satisfactory material from the excavation to meet the requirements for backfill or fill material, obtain borrow which meets the requirements for backfill material from sources secured by the Contractor,

2.2 STRUCTURAL BACKFILL: Structural backfill shall be free from clay balls and shall conform to ASTM D1241, Type 1, Gradation B.

2.3 WATER FOR COMPACTION: Water shall be free of acid, alkali, or organic materials and shall have a pH of 7.0 to 9.0. Provide all water needed for earthwork. Provide temporary piping, valves, and trucks to convey water from the source to the point of use. Provide any meters

required if the water is taken from a public water system.

PART 3 - EXECUTION:

- 3.1 DEWATERING: Provide and operate equipment adequate to keep excavations free of water. Dewater subgrade to a minimum of 3 feet below the bottom of the excavation. Remove water during periods when concrete is being deposited, when pipe is being laid, during the placing of backfill, and for proper inspection and/or testing of the exposed subgrade. These provisions shall apply during the noon hour as well as overnight. Do not drain trench water through the pipeline under construction. Avoid settlement or damage to adjacent property. Dispose of water in a manner that will not damage adjacent property or interfere with normal drainage. When dewatering open excavations, dewater from outside the structural limits and from a point below the bottom of the excavation. Obtain and comply with all required discharge permits from appropriate regulatory authorities.
- 3.2 EXCAVATION:
- 3.2.1 Excavate to the elevations shown on the drawings, to the bottom elevations of the slabs, structures, and foundations or the bottom of the roadway subbase (top of subbase if only to be compacted), whichever is the lowest elevation.
- 3.2.2 Perform all excavation regardless of the type, nature, or condition of the material encountered to accomplish the construction. Excavate for foundations to a point 5' horizontally behind the outside face of footings and base mats.
- 3.2.3 After the excavation has been completed, the Owner or his representative will observe the exposed subgrade to determine the need for any additional excavation. It is intended that additional excavation be conducted in all areas where unacceptable material is encountered and as directed by the engineer. Refill the over-excavated areas with structural backfill. All such over-excavation and refilling shall be executed in accordance with a change order. Payment for over-excavation and refill shall be made in accordance with the Standard General Conditions. No payment will be made by the Owner for over-excavation of wet subgrade materials. It shall be the Contractor's responsibility to dry wet subgrade materials as necessary for proper compaction and stabilization.
- 3.2.4 Do not carry excavation for footings, slabs, or conduits deeper than the elevations shown on the plans. Backfill over-excavations below the elevations shown to the proper elevation with compacted structural backfill material. Correct cuts below grade by similarly cutting adjoining areas and creating a smooth transition.

- 3.2.5 The Contractor will not receive any additional payment for over-excavation or refill material used for his convenience or which is not authorized by the Owner or his representative.
 - 3.2.6 The Contractor shall acquaint himself with existing conditions and locate all structures and utilities within the project area in order to avoid conflicts.
 - 3.2.7 Protect any pipes, conduits, wires, mains, footings or other underground structures encountered in trenching/excavating/backfilling from damage or displacement. Replace any pipes, conduits, wires, mains, footings or other structures disturbed during construction.
 - 3.2.8 Contact all utility companies with underground utilities in the project area and obtain their assistance in locating facilities prior to excavation.
 - 3.2.9 Excavate sufficiently in advance of pipe laying to discover obstructions in time to modify alignment, if necessary, to avoid the conflict. The Owner or his representative must review and approve such alignment modifications before they are encountered.
- 3.3 PREPARATION OF SUBGRADE PRIOR TO PLACING FOUNDATIONS: Excavate and shape subgrade to line, grade, and cross section. Remove soft material encountered and replace with structural backfill. Fill holes and depressions to the required line, grade, and cross sections with structural backfill. The finished subgrade shall be within a tolerance of ± 0.08 feet of the grade and cross section shown, smooth and free from irregularities, and at the specified relative density.
- 3.4 PREPARATION FOR PLACING FILL OR BACKFILL:
- 3.4.1 Remove loosened and disturbed materials at the subgrade.
 - 3.4.2 Remove any form materials and trash before placing fill or backfill. Obtain the specified compressive strength and finish of concrete work before backfilling.
 - 3.4.3 Do not operate earthmoving or excavation equipment within five feet of existing structures or newly completed structures. Place and compact fill or backfill adjacent to concrete walls with hand-operated tampers or other equipment that will not damage the structure.
 - 3.4.4 Fill or backfill around water-holding basins and channels only after specified leakage tests have been conducted.

3.5 COMPACTION:

3.5.1 Unless otherwise specified or shown on the drawings, areas outside pipe trenches must meet the following compaction requirements.

3.5.1.1 Structural Backfill: 98% relative density in 6-inch maximum layers.

3.5.1.2 Subgrade Underfill or Backfill: 95% relative density to a depth of 12 inches.

3.5.1.3 Subgrade Under Structural Backfill or Structures: 95% relative density to a depth of 24 inches.

3.5.1.4 Backfill or Fill Under Pavement: 98% relative density in 6-inch maximum layers.

3.5.1.5 All Other Areas: 95% relative density in 9-inch maximum layers.

3.5.2 Compact by using methods acceptable to the Engineer (powered tampers, vibrators, etc.). Compact the first 2 feet of backfill over pipe either by hand-operated tampering devices or with powered equipment which will not damage the pipe. Flooding or puddling with water to consolidate backfill is not acceptable, except where sand is encountered and the specified density can be obtained using this method.

3.5.3 During the compacting operations, maintain material within $\pm 2\%$ of optimum moisture. Aerate material containing excessive moisture by blading, discing, or harrowing to hasten the drying process.

3.5.4 Pipe and Appurtenant Structures: Unless otherwise shown on the drawings or otherwise described in the specifications for the particular type of pipe installed, compact soil in pipe trenches to the following minimum:

3.5.4.1 First Lift: 95% relative density.

3.5.4.2 Second Lift not Beneath Paving: 90% relative density.

3.5.4.3 Second Lift in Paved Areas and Under Structures: 98% relative density.

3.5.4.4 Refill for Over-excavation: 95% relative density.

3.6 SHEETING, SHORING, AND BRACING OF TRENCHES:

- 3.6.1 Install adequate sheeting and bracing to prevent damage to property and injury to persons. Comply with all applicable safety regulations and laws.
- 3.6.2 Remove sheeting when the trench has been backfilled to at least one-half its depth or when removal will not endanger proper pipe alignment or support.
- 3.6.3 When conditions or plans and specifications require that sheeting be left in place, cut off the top at an elevation 2.5 feet below finished grade, unless otherwise specified.

3.7 SIDEWALK, PAVEMENT AND CURB REMOVAL: Cut and remove bituminous and concrete pavements, curbs and sidewalks prior to excavation of the trenches. Width of the pavement or brick pavement cut shall be at least one foot wider than the required width of the trench at ground surface unless otherwise specified on the plans. Haul pavement and concrete materials from the site to disposal site secured by Contractor. Do not use for trench backfill.

3.8 TRENCHING:

- 3.8.1 Cut trenches to a minimum width equal to the outside diameter of the pipe at the joint plus eight inches for unsheeted trenches, or 12 inches for sheeted trenches. The maximum width of trench, measured at the top of the pipe, shall not exceed the outside pipe barrel diameter plus two feet, unless otherwise shown on the plans or details.
- 3.8.2 Maintain vertical trench walls from the bottom of the trench to a line measured 12 inches above the top of the pipe.
- 3.8.3 Utility Bedding: The minimum utility bedding allowable shall consist of a shaped trench bottom which provides firm bedding for the utility pipe. Bed the pipe in undisturbed firm soil of hand-shaped unyielding material, so that the pipe will be in continuous contact therewith for its full length and provide a minimum bottom segment support for the pipe equal to 0.6 of the outside diameter of the barrel. All bedding materials and installation for pipe shall be in accordance with the manufacturer's recommendations.
- 3.8.4 Construct special bedding as called for on the plans or in the contract documents as recommended by the pipe manufactures.
- 3.8.5 Excavate the trench to the lines and grades shown on the drawings with allowance for pipe thickness and for pipe base or special bedding. If the trench is excavated below the required grade, refill any part of the trench excavated below the required grade at no additional cost to the Owner. Place the refilling material over the full width of trench in

compacted layers not exceeding six inches deep to the established grade with allowance for the pipe base or special bedding.

- 3.8.6 During trench excavation, place the excavated material only within the project area. Do not obstruct any roadways or streets. Conform to federal, state, and local codes governing the safe loading of trenches with excavated material.
- 3.8.7 Limit the length of open trench to 800 feet in advance of pipe laying or amount of pipe that maybe installed in one working day. Complete backfilling and temporary or first layer paving not more than 1200 feet in the rear of pipe laying.
- 3.9 TRENCH EXCAVATION IN BACKFILL AND FILL AREAS: Construct trench excavation for pipe, pipes, or conduit in backfill or fill areas in accordance with the following procedures:
 - 3.9.1 Construct and compact the backfill or fill to an elevation of one foot minimum over the top of the pipe or conduit to be installed.
 - 3.9.2 Excavate trench in the compacted backfill or fill. Place pipe base material, install pipe or conduit, and backfill to 12 inches above the pipe as specified for the type of pipe used. Compact backfill above this point to the same relative density as the adjacent embankment.
- 3.10 STRUCTURAL BACKFILL: Place structural backfill where specified and in over-excavation areas, to the lines and grades shown or specified. Compact each layer. Stop structural backfill at least 6 inches below finished grade in all areas where topsoil is to be replaced. Moisten material as necessary to aid compaction.
- 3.11 TRENCH BACKFILLING:
 - 3.11.1 Excavate bell holes at each joint to permit proper assembly and inspection of the entire joint.
 - 3.11.2 Backfill for non-plastic pipe and appurtenant structures in accordance with the following procedures:
 - 3.11.2.1 After pipe has been bedded, place "First Lift" material simultaneously on both sides of the pipe, keeping the level of backfill the same on each side. Carefully place the material around the pipe so that the pipe barrel is completely supported and that no voids or uncompacted areas are left beneath the pipe.

Place material on the underside of the pipe in such a manner as to prevent lateral movement during subsequent backfilling.

3.11.2.2 Compact material placed within 12 inches of the outer surface of the pipe by hand tamping only.

3.11.2.3 Push the backfill material carefully onto the backfill previously placed in the "First Lift". Do not permit free fall of the material until at least two feet of cover is provided over the top of the pipe. Do not drop sharp, heavy pieces of material directly onto the pipe or the tamped material around the pipe.

3.11.3 Place backfill material in maximum 12 inch layers and compact each lift to the specified relative density.

3.12 SITE WORK

3.12.1 Shape the surface of earthwork to conform to lines, grades and cross sections that existed prior to beginning work or as shown on the drawings, within 1/10 of a foot. Round tops of banks to circular curves to not less than a 6-foot radius. Neatly and smoothly trim rounded surfaces. Do not over-excavate backfill to achieve the proper grade.

3.12.2 Remove excess, unsuitable, or cleared material resulting from the facility installation from the work site and dispose of at locations secured by the Contractor.

3.13 DRAINAGE, EROSION AND SEDIMENTATION: Maintain all existing drainage patterns and control run-off from the construction area to prevent erosion, sedimentation, or flooding due to the construction.

3.14 PROTECTION OF PROPERTY

3.14.1 Protect the trunks of trees adjacent to this work by enclosure with padding or wood. Operate excavating machinery with care to prevent damage to trees, particularly to overhanging branches and limbs.

3.14.2 Do not cut branches, limbs and roots unless they are within six inches of the facility under construction. Make all necessary cuts smoothly and neatly without splitting or crushing. Neatly trim and cover the tree with healing paint at all cut or damaged portions.

- 3.14.3 Do not cut or operate on paved surfaces any equipment with treads or wheels which will cut or otherwise damage paved surfaces. Provide adequate protective measures to avoid damages to the paved surfaces.
- 3.14.4 As promptly as practicable, restore existing property or structures. Do not leave restoration until the end of the construction period.

3.15 TESTING

- 3.15.1 Field density tests will be made in each vertical layer, and using the following approximate spacing.
 - 3.15.1.1 Under structures and slabs, one per 2500 square feet with at least two per structure or area.
 - 3.15.1.2 In trenches, one every 300 feet in continuous trenches under pavements or future pavements plus one at each intersection or one every 500 feet in continuous trenches not under pavements, plus one at each pavement of driveway crossing.
 - 3.15.1.3 Under pavements (including widening areas), one every 500 feet for each lane.
- 3.15.2 If any field density tests are below the specified relative density, re-compact or re-excavate, re-backfill and re-compact the area until the specified density is obtained. Make a minimum of two field density tests per re-compacted and/or re-excavated area, but do not exceed the spacing specified above.

END OF SECTION 02215

**SECTION 02500
SITE DRAINAGE**

PART 1 - GENERAL

- 1.1 SCOPE: The work under this section includes the furnishing of all labor material and equipment required to provide proper drainage of the site.
- 1.2 GENERAL REQUIREMENTS:
- 1.2.1 Pipe sizes shown on the drawings are based on concrete pipe with a coefficient of roughness based on Florida Department of Transportation Standards.
- 1.2.2 All workmanship, materials, equipment and plant shall be in accordance with the applicable portions of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition, and referred to hereinafter as Standard Specification. The specific sections of the above mentioned specifications which are applicable are listed below.

PART 2 - MATERIALS

- 2.1 CONCRETE PIPE:
- 2.1.1 Pipe: Concrete pipe for culverts shall conform to Section 449 of the Standard Specifications. All pipe shall be Class III unless otherwise noted on the drawings.
- 2.1.2 Sealing Joints: The joints of new pipe shall be sealed by use of round rubber gaskets as provided in Paragraph 430-7 of the Standard Specifications.
- 2.2 DRAINAGE STRUCTURES: Structures, including mitered end sections, shall be used where shown on the drawings and constructed in accordance with the details shown. Concrete shall be in accordance with Division III of the Standard Specifications.
- 2.3 POLYVINYL CHLORIDE PIPE:
- 2.3.1 Smooth Wall: Drainage pipe may be smooth wall PVC pipe in sizes ranging from 12 inches through 36 inches and conforming with AWWA C 900 or AWWA C 905, ASTM D 3034, minimum DR of 25.
- 2.3.2 Corrugated or Ribbed: Drainage pipe maybe corrugated ribbed PVC pipe with exterior ribs perpendicular to the axis ofthe pipe and in sizes ranging from 12 inches through 48 inches. Pipe shall conform to ASTM F 794 or ASTM F 949. Acceptable manufactures shall include Ultra-Rib, as manufactured by Extrusion Technologies, Inc., Contech A-2000 corrugated PVC sewer pipe, as manufactured by Contech Construction Products, Inc., or approved equal.

2.4 POLYETHYLENE CORRUGATED PIPE:

- 2.4.1 Drainage pipe may be high density polyethylene corrugated exterior/smooth interior pipe in sizes 12 inches through 36 inches and conforming with AASHTO M294, Type S. Material shall meet ASTM D 1248 Type III Category 4, Grade P33, Class C; or ASTM D3350CeUClassification324420C. Minimum conveyance factor shall be a Manning "n" value of 0.010. Acceptable manufacturer shall be Hi-Q, as manufactured by Hancor, Inc., N-12 polyethylene pipe, as manufactured by Advanced Drainage Systems, Inc., or approved equal.
- 2.4.2 Couplings and Fittings: Coupling bands shall cover at least one full corrugation on each section of pipe. When gasketed coupling bands are required, the gasket shall be made of closed-cell synthetic expanded rubber meeting the requirements of ASTM D 1056, Type 2. Gaskets shall be installed on the coupling band by the pipe manufacturer. All coupling bands shall meet or exceed the soil-tightness requirement of the AASHTO Standard Specification for Highway Bridges, Section 23, Paragraph 23.3.1.5.4(e). Pipe fittings shall conform to AASHTO M294.

2.5 MANHOLES:

- 2.5.1 Precast Concrete Manholes: ASTM C 478, precast reinforced concrete, of depth indicated with provision for rubber gasket joints.

Base Section: 6-inch minimum thickness for floor slab and 4-inch minimum thickness for walls and base riser section, and having a separate base slab or base section with integral floor.

- 2.5.1.1. Riser Sections: 4-inch minimum thickness, 48-inch diameter, and lengths to provide depth indicated.
- 2.5.1.2. Top Section: Eccentric cone type, unless concentric cone or flat-slab-top type is indicated. Top of cone to match grade rings.
- 2.5.1.3. Grade Rings: Provide 2 or 3 reinforced concrete rings, of 6 to 9 inches total thickness and match 24-inch diameter frame and cover.
- 2.5.1.4. Gaskets: ASTM C 443, rubber.

- 2.5.1.5. Steps: Cast into base, riser, and top sections sidewall at 12-to 16-inch intervals.
- 2.5.1.6. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to base section.
- 2.5.1.7. Channel and Bench: Concrete.
- 2.5.2 Cast-in-Place Manholes: Reinforced concrete of dimensions and with appurtenances indicated.
 - 2.5.2.1. Bottom, Walls, and Top: Reinforced concrete.
 - 2.5.2.2. Channel and Bench: Concrete.
 - 2.5.2.3. Steps: Cast into sidewall at 12- to 16-inch intervals.
- 2.5.3 Manhole Steps: Wide enough for an adult to place both feet on one step and designed to prevent lateral slippage off the step.

Material: Steel-reinforced plastic.
- 2.5.4 Manhole Frames and Covers: ASTM A 536, Grade 60-40-18, heavy-duty, ductile iron, 24-inch inside diameter by 7- to 9-inch riser with 4-inch minimum width flange, and 26-inch-diameter cover, indented top design, with lettering "STORM SEWER" cast into cover.

2.6 CATCH BASINS:

- 2.6.1 Precast Concrete Catch Basins: ASTM C 478 or ASTM C 858, precast reinforced concrete, of depth indicated. Sections shall have provision for rubber gasket joints. Base section slab shall have minimum thickness of 6 inches.
 - 2.6.1.1. Base Section: Base riser section and separate base slab, or base riser section with integral floor.
 - 2.6.1.2. Riser Sections: Sections shall be of lengths to provide depth indicated.
 - 2.6.1.3. Top Section: Type to match FDOT configuration detailed.
 - 2.6.1.3. Grade Rings: Provide 2 or 3 reinforced concrete rings, of 6 to 9 inches total thickness, as necessary.

- 2.6.1.5. Gaskets: ASTM C 443, rubber.
- 2.6.1.6. Steps: Cast into riser sidewall at 12- to 16-inch intervals.
- 2.6.1.7. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to base section.
- 2.6.1.8. Channel and Bench: Concrete.
- 2.6.2 Cast-in-Place Catch Basins: Reinforced concrete of dimensions and with appurtenances indicated.
 - 2.6.2.1. Bottom, Walls, and Top: Reinforced concrete.
 - 2.6.2.2. Channel and Bench: Concrete.
- 2.6.3 Catch Basin Steps: Wide enough for an adult to place both feet on one step and designed to prevent lateral slippage off the step.

Material: Steel-reinforced plastic.
- 2.6.4 Catch Basin Frames and Grates: Per FDOT Standard Frame and Grates.
- 2.6.5 Curb Inlets: Precast concrete, brick, or other materials, of dimensions conforming to Santa Rosa County standards.
- 2.7 OUTFALLS: General: Construct of reinforced concrete pipe, mitered end section, toewalls, and rip rap, as indicated.
- 2.8 CONCRETE AND REINFORCEMENT:
 - 2.8.1 Concrete: Portland cement mix, 3,000 psi.

Cement: ASTM C 150, Type II.

 - 2.8.1.1. Fine Aggregate: ASTM C 33, sand.
 - 2.8.1.2. Coarse Aggregate: ASTM C 33, crushed gravel.
 - 2.8.1.3. Water: Potable.

2.8.2 Reinforcement: Steel conforming to the following:

2.8.2.1. Fabric: ASTM A 185, welded wire fabric, plain.

2.8.2.2. Reinforcement Bars: ASTM A 615, Grade 60, deformed.

2.8.3 Forms:

2.8.3.1. Form Materials: Plywood, metal, metal-framed plywood, or other acceptable panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces without distortion or defects. Material shall be of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal.

2.8.3.2. Form Release Agent: Provide commercial formulation form-release agent with a maximum of 350 mg/1 volatile organic compounds (VOCs) that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces. Release agent to be within allowable volatile limits according to applicable local, state and federal codes.

2.9 MASONRY: Bricks for accessories shall be hard common clay brick. Mortar shall be one part Portland cement and three parts masonry sand to which shall be added lime putty in the amount of 50% of the volume cement. Special commercial mortar mixes maybe used if approved by the Engineer. All masonry materials shall conform to the latest applicable ASTM specifications. Set all masonry units in full beds of mortar, with full joints and strike all joints flush. Masonry reinforcements shall be galvanized Dur-O-Wal, or approved equal, and shall be installed at every other bed joint.

2.10 CURING MATERLALS:

2.10.1 Conform to TT-C-800, with 30-percent minimum solids content.

2.10.2 Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yard, complying with AASHTO M- 182, Class 2.

2.10.3 Moisture-Retaining Cover: One of the following, complying with ASTM C-171.

2.10.3.1. Waterproof paper

- 2.10.3.2. Polyethylene film
- 2.10.3.3. White burlap-polyethylene sheet
- 2.10.4 Clear Solvent-Borne Liquid Membrane-Forming Curing Compound: This is a solvent-borne membrane-forming curing compound. Revise to Type II and verify manufacturer's products when a white pigmented curing compound is required. Do not use if water-borne low-VOC emissions compounds are required. ASTM C-309, Type L Class A or B, wax free.
- 2.10.5 Clear Water-borne Membrane-Forming Curing Compound:
 - 2.10.5.1. This is a water-borne membrane-forming curing compound. Use when low VOC emissions are required. ASTM C-309, Type 1, Class B.
 - 2.10.5.2. Provide material that has a maximum volatile organic compound (VOC) rating of 350 mg per liter.
- 2.10.6 Evaporation Control: Monomolecular film-forming compound applied to exposed concrete surfaces for temporary protection from rapid moisture loss.

PART 3 – EXECUTION

3.1 PREPARATION OF FOUNDATION FOR BURIED STORMWATER SYSTEMS:

- 3.1.1 Grade trench bottom to provide a smooth, firm, stable, and rock-free foundation, throughout the length of the pipe.
- 3.1.2 Remove unstable, soft, and unsuitable materials at the surface upon which pipes are to be laid, and backfill with clean sand or pea gravel to indicated level.
- 3.1.3 Shape bottom of trench to fit bottom of pipe. Fill unevenness with tamped sand backfill. Dig bell holes at each pipe joint to relieve the bells of all loads and to ensure continuous bearing of the pipe barrel on the foundation.

3.2 INSTALLATION, GENERAL:

- 3.2.1 General Locations and Arrangements: Drawings (plans and details) indicate the general location and arrangement of the underground stormwater system piping. Location and arrangement of piping layout take into account many design considerations. Install the piping as indicated, to the extent practical.

- 3.2.2 Install piping beginning at low point of systems, true to grades and alignment indicated with unbroken continuity of invert, unless approved otherwise by the Engineer. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings in accordance with manufacturer's recommendations for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line and pull past each joint as it is completed. The pipe shall be carefully examined for defects and the inside cleaned. After placing pipe in the ditch, the ends shall be wiped free from all dirt, sand and foreign material. All pipe and joints shall be made, handled, and installed in strict accordance with the manufacturer's recommendations and instructions. A copy of the installation manual shall be furnished to the Engineer prior to placing pipe on the job site.
- 3.2.2.1. Install concrete pipe in accordance with applicable provisions of American Concrete Pipe Association "Concrete Pipe Field Manual", unless otherwise indicated.
- 3.2.2.2. Place concrete pipe with elliptical reinforcing so that the reference lines indicating top of pipe are not more than 5 degrees from vertical plane through longitudinal axis of pipe.
- 3.2.3 Use manholes or catch basins for changes in direction, except where a fitting is indicated. Use fittings for branch connections, except where direct tap into existing sewer is indicated. The Engineer shall be notified at least 24 hours before the pouring of any concrete is to be started, and such pouring shall not be started until the reinforcement has been approved as placed.
- 3.2.4 Use proper size increasers, reducers, and couplings, where different size or material of pipes and fittings are connected. Reduction of the size of piping in the direction of flow is prohibited.
- 3.2.5 Install piping pitched down in direction of flow, at minimum slope per plans.
- 3.2.6 Tunneling: Install pipe under streets or other obstructions that cannot be disturbed, by tunneling, jacking, or a combination of both.

3.3 MANHOLES:

- 3.3.1 General: Install manholes complete with accessories as indicated. Form continuous concrete or split pipe section channel and benches between inlets and outlet. Set tops of frames and covers flush with finish surface where manholes occur in pavements. Elsewhere, set tops 3 inches above finished grade, unless otherwise indicated.

- 3.3.2 Place precast concrete manhole sections as indicated, and install in accordance with ASTM C 891.
- 3.3.3 Construct cast-in-place manholes as indicated.
- 3.3.4 Provide rubber joint gasket complying with ASTM C 443 at joints of sections.
- 3.3.5 Apply bituminous mastic coating at joints of sections.
- 3.4 **CATCH BASINS:**
 - 3.4.1 Construct catch basins to sizes and shapes indicated.
 - 3.4.2 Set frames and grates to elevations indicated.
- 3.5 **OUTFALLS:** Construct outfalls of reinforced concrete which will attain 28-day compressive strength of not less than 3000 psi.
- 3.6 **TAP CONNECTIONS:**
 - 3.6.1 Make connections to existing piping and underground structures so that finished work will conform as nearly as practicable to the requirements specified for new work.
 - 3.6.2 Use commercially manufactured wye fittings for piping branch connections. Remove section of existing pipe, install wye fitting into existing piping, and encase entire wye fitting plus 6-inch overlap, with not less than 6 inches of 3000-psi 28-day compressive-strength concrete.
 - 3.6.3 Make branch connections from side into existing 15 to 18-inch piping by removing section of existing pipe and installing wye fitting into existing piping. Encase entire wye with not less than 6 inches of 3000-psi 28-day compressive-strength concrete.
 - 3.6.4 Make branch connections from side into existing 24-inch or larger piping or to underground structures by cutting opening into existing unit sufficiently large to allow 3 inches of concrete to be packed around entering connection. Cut end of connection pipe passing through pipe or structure wall to conform to shape of and be flush with inside wall, unless otherwise indicated. On outside of pipe or structure wall, encase entering connection in 6 inches of concrete for minimum length of 12 inches to provide additional support of collar from connection to undisturbed ground.

- 3.6.4.1. Provide concrete that will attain minimum 28-day compressive strength of 3000 psi, unless otherwise indicated.
- 3.6.4.2. Use epoxy bonding compound as interface between new and existing concrete and piping materials.
- 3.6.5. Protect existing piping and structures to prevent concrete or debris from entering while making tap connections. Remove debris, concrete, or other extraneous material that may accumulate.

3.7 CLOSING ABANDONED STORMWATER SYSTEMS:

- 3.7.1 Abandoned Piping: Close open ends of abandoned underground piping that is indicated to remain in place. Provide sufficiently strong closures to withstand hydrostatic or earth pressure that may result after ends of abandoned utilities have been closed.
 - 3.7.1.1. Close open ends of concrete pipe or structures with not less than 8-inch-thick brick masonry bulkheads. Fill pipe under roadways with grout as indicated on plans.
 - 3.7.1.2. Close open ends of other piping with plastic plugs, or other acceptable methods suitable for size and type of material being closed. Wood plugs are not acceptable.
- 3.7.2 Abandoned Structures: Remove structure and close open ends of the remaining piping or remove top of structure down to not less than 3 feet below final grade; fill structure with stone, rubble, gravel, or compacted dirt, to within 1 foot of top of structure remaining, and fill with concrete.

3.8 FIELD QUALITY CONTROL:

- 3.8.1 Testing: Perform testing of completed piping in accordance with local authorities having jurisdiction. All sampling and testing shall be conducted by a testing laboratory under the direction of a Professional Engineer, licensed in the State of Florida, at the contractor's expense. Submit test results directly to the Engineer. The following tests shall be taken:
 - 3.8.1.1. 28-day compressive test of concrete, minimum of three test cylinders per 50 cubic yards of concrete poured.
 - 3.8.1.2. Air content, minimum one test for each day's pour.

- 3.8.1.3. Slump test, minimum one test for each day's pour.
 - 3.8.1.4. Contractor shall replace materials removed for testing purposes.
 - 3.8.1.5. Should any work or materials fail to meet the requirements set forth in the plans and specifications, contractor shall pay for retesting of same.
- 3.8.2 Cleaning: Clear interior of piping and structures of dirt and other superfluous material as work progresses. Maintain swab or drag in piping and pull past each joint as it is completed.
- 3.8.2.1. In large, accessible piping, brushes and brooms may be used for cleaning.
 - 3.8.2.2. Place plugs in ends of uncompleted pipe at end of day or whenever work stops.
 - 3.8.2.3. Flush piping between manholes, to remove collected debris.
- 3.8.3 Interior Inspection: Inspect piping to determine whether line displacement or other damage has occurred.
- 3.8.4 Make inspections after pipe between manholes has been installed, cleaned and approximately 2 feet of backfill is in place, and again at completion of project. Each section of pipe between structures is to show from either end on examination, a full circle of light. Each appurtenance to the system shall be of the specified size and form, to neatly and substantially constructed, with the top set permanently to exact position and grade.
- If inspection indicates poor alignment, debris, displaced pipe, infiltration, or other defects, correct such defects and reinspect. All repairs shown necessary by the inspections are to be made, broken or cracked pipe replaced, all deposits removed and the pipe left true to line and grade as herein specified, or shown on the plans, entirely clean and free from abnormalities and ready for use.
- 3.8.5 Limits of Infiltration and Methods of Testing: The allowable limit of groundwater infiltration for the entire system of new stormwater systems or any one trunk, or interceptor shall be in complete accordance with ASTM C425-7 I T and shall not exceed a limit of infiltration equal to 0.2 gal/inch diameter/hour/100 linear feet of pipe.
- 3.8.5.1. The test will be made by measuring the infiltrated flow of water over a measuring weir set up in the invert of the sewer, or by an alternate method approved by the Engineer, a known distance from a temporary bulkhead

or other limiting point of infiltration. After the sewer or sewers have been pumped out, and normal conditions prevail, tests shall be started.

3.8.5.2. Tests shall be run continuously for a period of not less than three(3) hours, with weir readings taken at 20 minute intervals. The tests shall be made by the Contractor. The Engineer shall be notified 24 hours in advance. Where infiltration occurs in excess of the specified amount, the defective pipe or joints shall be located and repaired at the expense of the Contractor. If the defective portions cannot be located, the Contractor, at his own expense, shall remove and reconstruct as much of the original work as necessary to obtain a sewer within allowable infiltration limits upon such retesting as necessary.

3.8.6 Clean-up: Before final inspection and acceptance, the Contractor shall clean ditches, shape shoulders and restore all disturbed areas, including street crossings, grass plots, to as good as condition as existed before work started. All trenches shall be leveled and loose material removed from pavement gutters, sidewalks, pipe lines, and inlet sediment traps, employing hand labor, if necessary.

3.9 MEASUREMENT AND PAYMENT: No additional payment shall be made for the work herein before specified. The Contractor's unit price or lump sum bid as set forth in the PROPOSAL shall constitute full compensation for the work involved for each item.

END OF SECTION 02500

**SECTION 02510
STABILIZED ROADWAY**

PART 1-GENERAL

1.1 WORK INCLUDED:

- 1.1.1 The work specified in this section consists of the construction of a stabilized roadway where indicated on the drawings. Construction shall be to the uniformity, density and bearing ration specified hereinafter. Roadways shall be stabilized to the depths and dimensions indicated on the drawings.
- 1.1.2 Definitions: The stabilizing shall be FDOT Type B as described hereinafter. The required bearing ratio value shall be obtained by the stabilizing the roadway material by the addition and mixing in of suitable stabilizing material. Such work shall be done in accordance with these specifications, lines, grades, thicknesses and notes shown on the drawings.

1.2 GENERAL REQUIREMENTS:

- 1.2.1 Except as otherwise provided herein, materials and methods of operations required to install new and replacement pavements shall be in accordance with the applicable requirements of the "Standard Specifications for Road and Bridge Construction".

1.3 QUALITY ASSURANCE: The work shall conform to the latest revisions to the applicable provisions of the following standards, except as modified herein:

- 1.3.1 Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition (FDOT):

FDOT Section 160	Stabilizing.
FDOT Section 911	Limerock Material for Base and Stabilized Base.
FDOT Section 913/913A	Shell Material./Shell-Rock Material.
FDOT Section 914	Materials for Subgrade Stabilization.

- 1.4 SUBMITTALS: The Contractor shall provide copies of certificates from an independent testing laboratory that the job mix formula meets the requirements of Section 160, 911, 913/913A and/or 914 of the FDOT Standard Specifications.

STABILIZED ROADWAY

PART 2 - MATERIALS

2.1 COMMERCIAL MATERIALS:

2.1.1 General: Materials which are designated as commercial materials which are to be used for this stabilizing may be either commercial limerock, limerock overburden or crushed shell.

2.1.2 Limerock: For limerock and limerock overburden, the percentage of carbonates of calcium and magnesium shall be at least 70, and the plasticity index shall not exceed 10. The gradation of both commercial limerock and limerock overburden shall be such that 97 percent of these materials will pass a 1 1/2 inch sieve. Limerock material shall otherwise conform to the requirements of FDOT 911.

2.1.3 Crushed Shell: Crushed shell for this use shall be mollusk shell (i.e., oysters, mussels, clams, cemented coquina, etc.). Steamed shell will not be permitted. Shell material shall meet the following requirements:

2.1.3.1 At least 97 percent by weight of the total material shall pass a 1–inch screen and at least 50 percent by weight of the total material shall be retained on the No. 4 sieve.

2.1.3.2 Not more than 7.5 percent by weight of the total material shall pass the No. 200 sieve. The determination of the percentage passing the No. 200 sieve shall be made by washing the material over the sieve.

2.1.3.3 In the event that the shell meets the above requirements without crushing, crushing will not be required.

2.1.3.4 Shell material shall otherwise conform to the requirements of FDOT 913.

2.2 LOCAL MATERIAL:

2.2.1 General: Local materials used for this stabilizing maybe high-bearing-value soils or sandclay material. The material passing the 40-mesh sieve shall have a liquid limit not greater than 30 and a plasticity index not greater than 10.

2.2.2 Blending: No blending of materials to meet these requirements will be permitted unless authorized by the Engineer. When blending is permitted, the blended material shall be tested and approved before being spread on the roadway.

STABILIZED ROADWAY

2.3 TYPE B STABILIZATION

- 2.3.1 The type of materials, commercial or local, shall be at the Contractor's option.
- 2.3.2 No separate payment for stabilizing materials will be made.
- 2.3.3 Bearing value determinations will be made by the Limerock Bearing Ratio Method
- 2.3.4 Under this method, it shall be the Contractor's responsibility that the finished roadbed section meets the bearing value requirements, regardless of the quantity of stabilizing materials necessary to be added. Also under this method, full payment will be made for any areas where the existing sub-grade materials meet the design bearing value requirements without the addition of stabilizing additives, as well as areas where the Contractor may elect to place select high-bearing materials from other sources, within the limits of the stabilizing.
- 2.3.5 After the roadbed grading operations have been substantially completed, the Contractor shall make his own determination as to the quantity (if any) of stabilizing material, of the type selected by him, necessary for compliance with the bearing value requirements. The Contractor shall notify the Engineer of the approximate quantity to be added, and the spreading and mixing in of such quantity of materials shall meet the approval of the Engineer as to uniformity and effectiveness.

PART 3 - EXECUTION

3.1 GENERAL:

- 3.1.1 Prior to the beginning of stabilizing operations, the area to be stabilized shall have been constructed to an elevation such that upon completion of stabilizing operations the completed stabilized roadway will conform to the lines, grades and cross section shown in the plans. Prior to the spreading of any additive stabilizing material, the surface of the roadbed shall be brought to a plane approximately parallel to the plane of the proposed finished surface.
- 3.1.2 The roadway to be stabilized maybe processed in one course, unless the equipment and methods being used to not provide the required uniformity, particle size limitation, compaction and other desired results, in which case, the Engineer will direct that the processing be done in more than one course.

3.2 APPLICATION

- 3.2.1 When additive stabilizing materials are required, the designated quantity shall be spread uniformly over the area to be stabilized.

STABILIZED ROADWAY

- 3.2.2 When materials from an existing base are to be utilized in the stabilizing at a particular location, all of such materials shall be placed and spread prior to the addition of other stabilizing additives.
- 3.2.3 Commercial stabilizing material shall be spread by the use of mechanical material spreaders except that where use of such equipment is not practicable other means of spreading may be used, but only upon written approval of the proposed alternate method.
- 3.3 **MIXING:**
 - 3.3.1 The mixing shall be done with rotary tillers, or other equipment meeting the approval of the Engineer. The area to be stabilized shall be thoroughly mixed throughout the entire depth and width of the stabilizing limits.
 - 3.3.2 The mixing operations, as specified, will be required regardless of whether the existing soil, or any select soils placed within the limits of the stabilized sections, have the required bearing value without the addition of stabilizing materials.
- 3.4 **MAXIMUM PARTICLE SIZE OF MIXED MATERIALS:** At the completion of mixing, all particles of material within the limits of the area to be stabilized shall pass a 3-1/2 inch ring. Any particles not meeting this requirement shall be removed from the stabilized area or shall be broken down so as to meet this requirement.
- 3.5 **COMPACTION:** After the mixing operations have been completed and requirements for bearing value, uniformity and particle size have been satisfied, the stabilized area shall be compacted, in accordance with Paragraph 3. 10.1 hereinafter. The materials shall be compacted at a moisture content permitting the specified compaction. If the moisture content of the material is improper for attaining the specified density, either water shall be added or the material shall be permitted to dry until the proper moisture content for the specified compaction is reached.
- 3.6 **FINISH GRADING:** The completed stabilized roadway shall be shaped to conform with the cross-section indicated in the drawings. The roadway shall be checked by the use of elevation stakes, or other means approved by the Engineer.
- 3.7 **REQUIREMENTS FOR CONDITION OF COMPLETED ROADWAY**
 - 3.7.1 After the stabilizing and compacting operations have been completed, the roadway shall be firm and substantially unyielding, to the extent that it will support construction equipment and will have the bearing value required by the drawings.
 - 3.7.2 All soft and yielding material, and any other portions of the roadway which will not compact readily, shall be removed and replaced with suitable material and the whole roadway brought to grade, with proper allowance for subsequent compaction.

STABILIZED ROADWAY

3.8 MAINTENANCE OF COMPLETED ROADWAY: After the roadway has been completed as specified above, the Contractor shall maintain free from ruts, depressions and any damage resulting from the hauling or handling of materials, equipment, tools, etc. It shall be the Contractor's responsibility to maintain the required density until the entire widening is in place. Such responsibility shall include any repairs, replacement which might become necessary in order to recompact the roadway in the event of erosion or other damage occurring to the previously compacted roadway. Any such work required for re-compaction shall be at the Contractor's expense.

3.9 FIELD QUALITY CONTROL

3.9.1 Bearing Value Requirements:

3.9.1.1 General: Bearing value samples will be obtained and tested at the contractor's expense at completion of satisfactory mixing of the stabilized area. For any area where the bearing value obtained is deficient from the value indicated in the drawings, in excess of the tolerances established herein, additional stabilizing material shall be spread and mixed in accordance with Paragraphs 3.2 and 3.3. This reprocessing shall be done for the full width of the roadway being stabilized and longitudinally for a distance of 50 feet beyond the limits of the area in which the bearing value is deficient.

3.9.1.2 Tolerances in Bearing Value Requirements: The following undertolerances from the specified bearing value will be allowed as based on tests performed on samples obtained after mixing operations have been completed:

<u>Specified Bearing Value</u>	<u>Undertolerances</u>
LBR	5.0

3.10 DENSITY REQUIREMENTS:

3.10.1 General: With the entire limits of the width and depth of the areas to be stabilized, the minimum density acceptable at any location will be 98 percent of the maximum density as determined by AASHTO T 180, Test Method D.

END OF SECTION 025 10

**SECTION 02513
ASPHALT CONCRETE PAVING**

PART 1-GENERAL

1.1 RELATED DOCUMENTS: Drawings and general provisions of Contract, including General and Supplementary Conditions and Division I of the FDOT Standard Specifications sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

1.2.1 Extent of asphalt concrete paving work is shown on drawings.

1.2.2 Prepared aggregate base is specified in earthwork and appropriate base sections.

1.2.3 Saw-cutting of edges of existing pavement is specified in site clearing section.

1.3 SUBMITTALS:

Material Certificates: Provide copies of materials certificates signed by material producer and Contractor, certifying that each material item complies with, or exceeds, specified requirements.

1.4 QUALITY ASSURANCE: Codes and Standards: Comply with State highway or transportation department standard specifications, latest edition, and with local governing regulations if more stringent than herein specified.

1.5 SITE CONDITIONS:

1.5.1 Weather Limitations: Apply prime and tack coats when ambient temperature is above 50 deg.F (10 deg.C), and when temperature has not been below 35 deg.F (1 deg.C) for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.

1.5.2 Construct asphalt concrete surface course when atmospheric temperature is above 40 deg.F (4 deg.C), and when base is dry. Base course may be placed when air temperature is above 30 deg.F (-1 deg.C) and rising.

1.5.3 Grade Control: Establish and maintain required lines and elevations.

PART 2-PRODUCTS

2.1 MATERIALS:

2.1.1 General: Use locally available materials and gradations which exhibit a satisfactory record of previous installations.

2.1.2 Base Course Aggregate: Sound, angular crushed stone, crushed gravel, or crushed slag, sand, stone or slag screenings. Uncrushed gravel may be used in base course mixture if required to suit local material availability.

- 2.1.3 Surface Course Aggregate Crushed stone, crushed gravel, crushed slag, and sharp-edged natural sand. Sand prepared from stone, blast-furnace slag, or gravel, or combinations thereof may be used if required to suit local material availability.
- 2.1.4 Mineral Filler: Rock or slag dust, hydraulic cement, or other inert material complying with AASHTO M 17 (ASTM D 242).
- 2.1.5 Asphalt Cement: AASHTOM226 (ASTMD 946) for penetration-graded material and AASHTO M 2 (ASTM D 946) for penetration-graded material.
- 2.1.6 Prime Coat: Cut-back asphalt type; AASHTO M 82 (ASTM D 2027) MC- 30, MC-70 or MC-250.
- 2.1.7 Tack Coat: Emulsified asphalt; AASHTO M 140 (ASTM D 977) or M 208 (D 2397); SS-1, SS-1h, CSS-1 or CSS-1h, diluted with one part water to one part emulsified asphalt.
- 2.1.8 Herbicide Treatment: Commercial chemical for weed control, registered by Environmental Protection Agency. Provide granular, liquid, or wettable powder form.
- 2.1.8.1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:
- 2.1.8.2. Manufacturers: Subject to compliance with requirements, provide products of one of the following:
- Allied Chemical Corp.
Achem Products, Inc.
Ciba-Geigy Corp.
Dow Chemical U.S.A.
E.I. DuPont De Nemours & Co., Inc.
FMC Corp.
Thompson-Hayward Chemical Co.
U.S. Borax and Chemical Corp.
- 2.1.9 Lane Marking Paint: Paint shall meet or exceed Federal Specification TT-P- I 952B and conform to the reflective requirements of FDOT Specifications, Section 710.
- 2.2 ASPHALT-AGGREGATE MIXTURE: Provide plant-mixed, hot-laid asphalt-aggregate mixture complying with AS TM D 3 5 15 and as recommended by local paving authorities to suit project conditions.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION:

- 3.1.1 Remove loose material from compacted subbase surface immediately before applying herbicide treatment.
- 3.1.2 Proof roll prepared subbase surface to check for unstable areas and areas requiring additional compaction.
- 3.1.3 Notify Engineer of unsatisfactory conditions. Do not begin paving work until deficient subbase areas have been corrected and are ready to receive paving.
- 3.1.4 Herbicide Treatment: Apply chemical weed control agent in strict compliance with manufacturers recommended dosages and application instructions. Apply to compacted, dry subbase prior to application of prime coat.
- 3.1.5 Prime Coat: Apply at rate of 0.30 to 0.50 gal. per sq. yd., over compacted base. Apply material to penetrate and seal, but not flood, surface. Cure and dry as long as necessary to attain penetration and evaporation of volatile.
- 3.1.6 Tack Coat: Apply to contact surfaces of previously constructed asphalt or portland cement concrete and surfaces abutting or projecting into asphalt concrete pavement. Distribute at rate of 0.05 to 0.15 gal. per sq. yd. of surface.
- 3.1.7 Allow to dry until at proper condition to receive paving.
- 3.1.8 Exercise care in applying bituminous materials to avoid smearing of adjoining concrete surfaces. Remove and clean damaged surfaces.

3.2 PLANT MIX ASPHALTIC SURFACE COURSE:

- 3.2.1 General: This item shall consist of a wearing surface constructed of asphaltic concrete on a prepared base, in accordance with the plans and specifications.
- 3.2.2 Materials: The materials and construction methods shall comply with those set forth for Superpave Asphaltic Concrete in the latest edition of the FDOT Standard Specifications, Section 334. The asphaltic cement shall meet the requirements of Section 320 for plant methods, and equipment. Meet the general requirements of Section 330, including the provisions for Quality Control Plans and Quality Control Systems as specified in 6-8.
- 3.2.3 Thickness: The thickness of the surface shall be as shown on the construction plans. This requirement shall be checked by cores and where a deficiency of more than 1/4" exists, the Contractor shall be required to correct the deficiency either by replacing the full thickness or overlaying the area to the satisfaction of the Engineer.

3.3 PLACING MIX:

3.3.1 General: Place asphalt concrete mixture on prepared surface, spread and strike-off. Spread mixture at minimum temperature of 225 deg.F (107 deg.C). Place inaccessible and small areas by hand. Place each course to required grade, cross-section, and compacted thickness.

3.3.2 Paver Placing: Place in strips not less than 10' wide, unless otherwise acceptable to Engineer. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete base course for a section before placing surface course.

3.3.3 Joints: Make joints between old and new pavements, or between successive days' work, to ensure continuous bond between adjoining work. Construct joints to have same texture, density and smoothness as other sections of asphalt concrete course. Clean contact surfaces and apply tack coat.

3.4 ROLLING:

3.4.1 General: Begin rolling when mixture will bear roller weight without excessive displacement. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.

3.4.2 Breakdown Rolling: Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check surface after breakdown rolling, and repair displaced areas by loosening and filling, if required, with hot material.

3.4.3 Second Rolling: Follow breakdown rolling as soon as possible, while mixture is hot. Continue second rolling until mixture has been thoroughly compacted.

3.4.4 Finish Rolling: Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained maximum density.

3.4.5 Patching: Remove and replace paving areas mixed with foreign materials and defective areas. Cut-out such areas and fill with fresh, hot asphalt concrete. Compact by rolling to maximum surface density and smoothness.

3.4.6 Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.5 TRAFFIC AND LANE MARKINGS:

3.5.1 Cleaning: Sweep and clean surface to eliminate loose material and dust.

3.5.2 Striping: Paint shall meet or exceed Federal Specification II-P- I 952B and conform to the reflective requirements of MOT Specifications, Section 710.

- 3.5.3 Striping: Use chlorinated-rubber base factory-mixed, quick-drying, and non-bleeding.

Color: White, yellow and blue.

Apply paint with mechanical equipment to produce uniform straight edges. Apply in 2 coats at manufacturer's recommended rates.

3.6 FIELD QUALITY CONTROL:

- 3.6.1 General: Test in-place asphalt concrete courses for compliance with requirements for thickness and surface smoothness. Repair or remove and replace unacceptable paving as directed by Engineer. Contractor to replace asphalt removed for testing purposes.
- 3.6.2 Should any work or materials fail to meet the requirements set forth in the plans and specifications, Contractor shall pay for retesting of same.
- 3.6.3 A minimum of four cores and density test shall be made. Engineer shall determine location of cores and test.
- 3.6.4 Thickness: In-place compacted thickness will not be acceptable if exceeding following allowable variation from required thickness:
- 3.6.4.1. Base Course: 1/4", plus or minus.
- 3.6.4.2. Surface Course: 1/4", plus or minus.
- 3.6.5 Surface Smoothness: Test finished surface of each asphalt concrete course for smoothness using I 0 straightedge applied parallel with, and at right angles to centerline of paved area. Surfaces will not be acceptable if exceeding the following tolerances for smoothness.
- 3.6.5.1. Base Course Surface: 1/4".
- 3.6.5.2. Wearing Course Surface: 3/16".
- 3.6.5.3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template, 1/4".

Check surface areas at intervals as directed by Engineer.

END OF SECTION 02513

SECTION 02516
LIMEROCK BASE

PART 1-GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of contract, including General and Supplementary Conditions and other Specification Sections, apply to the work of this section.
- B. Florida Department of Transportation, Standard Specifications for Road and Bridge Construction (FDOT Specs), latest edition.

1.2 DESCRIPTION OF WORK:

- A. This item shall consist of a base course of limerock base constructed on a subgrade prepared in accordance with the specifications and in conformity with the line, grades and typical cross-section as shown on the drawings. The construction methods shall conform to the requirements of Section 200 of FDOT Specs for rock base.

PART 2-PRODUCTS

2.1 All materials shall be secured from sources approved by the Engineer, and shall be furnished by the Contractor. Limerock material shall conform to Section 911 of the FDOT Specs.

2.2 EQUIPMENT:

- A. The rock shall be spread by mechanical rock spreaders, equipped with a device which strikes off the rock uniformly to laying thickness, and capable of producing an even distribution of the rock, for crossovers, intersections ramp areas; for roadway widths of 20 feet or less; for the main roadway area when forms are used and for any other areas where the use of a mechanical spreader is not practicable; spreading may be done by bulldozers or blade graders. All equipment for proper construction this project shall be in first-class working condition. Limerock base shall conform to Section 200 of the FDOT Specs.

PART 3 - EXECUTION

3.1 TRANSPORTING LIMEROCK:

- A. The limerock shall be transported to the point where it is to be used, over rock previously placed if practicable, and dumped on the end of the preceding spread. Hauling over the subgrade and dumping on the subgrade will be permitted when, in the Engineer's opinion, these operations will not be detrimental to the base.

3.2 SPREADING LIMEROCK:

- A. Method of Spreading: The limerock shall be spread uniformly. All segregated areas of fine or coarse aggregate shall be removed and replaced with properly graded aggregate.
- B. Number of Courses: When the specified compacted thickness of the base is greater than six inches, the base shall be constructed in two courses. The thickness of the first course shall be approximately one-half the total thickness of the finished based, or enough additional material added to bear the weight of the construction equipment without disturbing the subgrade. When compacted thickness is six inches or less, graded aggregate shall be placed in one lift.

3.3 COMPACTING AND FINISHING BASE:

A. GENERAL

Single-Course Base: For single-course base, after the spreading is completed, the entire surface shall be scarified and then shaped so as to produce the required grade and cross section after compaction.

Double-Course Base: For double-course base, the fast course shall be cleaned of foreign material and bladed and brought to a surface cross-section approximately parallel to that of the finished base. Prior to the spreading of any material for the upper course, the density tests for the lower course shall be made and the Engineer shall have determined that the required compaction has been obtained. After the spreading of the material for the second course is completed, its surface shall be finished and shaped so as to produce the required grade and cross-section after compaction, and free of scabs and laminations.

Moisture Content: When the material does not have the proper moisture content to ensure the required density, wetting or drying will be required. When water is added, it shall be uniformly mixed-in disking to the full depth of the course which is being compacted. Wetting or drying operations shall involve manipulation, as a unit, of the entire width and depth of the course which is being compacted.

3.4 DENSITY REQUIREMENTS:

- A. As soon as proper conditions of moisture are attained, the material shall be compacted to density of not less than 98% of the maximum density as determined by AASHTO T-180.

3.5 TESTING SURFACE, PROTECTION, AND MAINTENANCE:

- A. Density Tests: At least one field density test of compacted base shall be made for every 500 linear feet of paved area unless otherwise indicated on plans. Additional determinations may be made if deemed necessary by the Engineer.
- B. During final compacting operations, if blading of any areas is necessary to obtain the true grade and cross-section, the compacting operations for such areas shall be completed prior to making the density tests on the finished based.
- C. Correction of Defects:

Contamination of Base Material: If, at any time, the subgrade material should become mixed with the base course materials, 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.

Cracks and Checks: 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, the Contractor shall remove the cracks or checks by rescarifying, reshaping, adding base material where necessary, and recompacting.

- D. Compaction of Widening Strips:

Where base construction consists of widening strips and the trench width is not sufficient to pen-nit use of standard base compaction equipment, compaction shall be accomplished by use of vibratory compactors, trench rollers or other special equipment which will achieve the density requirements specified herein. When multiple-course base construction is required by the plans or specifications, the required compaction shall be achieved in each course prior to spreading material for the overlaying course.

E. Testing Surface:

The finished surface of the base course shall be checked with a template cut to the required crown and with a 15-foot straightedge laid parallel to the center line of the road. All irregularities greater than 1/4 inch shall be corrected by scarifying and removing or adding rock as required, after which the entire area shall be recompact as specified hereinbefore. In the testing of the surface, the measurements will not be take in small holes caused by individual pieces of rock having been pulled out by the grader.

F. Priming and Maintaining:

Priming: The prime coat shall be applied only when the base meets the specified density requirements and the moisture content in the top half of the base does not exceed 90 percent of the optimum moisture of the base material. At the time of priming, the base shall be firm, unyielding and in such condition that no undue distortion will occur.

Maintaining: The Contractor will be responsible for assuring that the true crown and template are maintained, with no rutting or other distortion, and that the base meets all the requirements, at the time the surface course is applied.

G. Thickness Requirements:

Measurements: Thickness of the base shall be measured at intervals in such a manner that each test represents 500 square yards, or as otherwise directed by the Engineer or indicated on plans.

Measurements shall be taken at various points on the cross-section, through holes not less than three inches in diameter.

Areas Requiring Correction: Where the compacted base is deficient by more than 1/4 inch from the thickness called for in the plans, the Contractor shall correct such areas by scarifying and adding rock. The base shall be scarified and rock added for a distance of 100 feet in each direction from the edge of the deficient area. The affected areas shall then be brought to the required state of compaction and to the required thickness and cross-section.

END OF SECTION 02516

SECTION 02525 – GRASSING

PART 1-GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Specifications Sections apply to this Section.
- B. Florida Department of Transportation, Standard Specifications for Road and Bridge Construction(FDOT Specs), latest edition as modified herein.

1.2 SUMMARY:

- A. Extent of grassing work is as specified or shown on the construction plans. Sodded areas disturbed during construction shall be re-sodded to match existing species.

1.3 SUBMITTALS:

- A. See paragraph entitled "Quality Control" for submittal requirements.

1.4 DELIVERY AND STORAGE:

- A. All seed shall be labeled in accordance with U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act in effect on the date of invitation for bids. All seed shall be furnished in sealed standard containers, unless exception is granted in writing. Seed which have become wet, moldy, or otherwise damaged in transit or in storage shall not be used. Fertilizer shall be delivered to the site in the original, unopened containers, each bearing the manufacturer's guaranteed analysis. Any fertilizer which becomes caked or otherwise damaged, making it unsuitable for use, shall not be used. Seed, fertilizer and other grassing materials shall be stored under cover and protected from damaged which would make them unacceptable for use.

PART 2 - PRODUCTS

2.1 MATERIALS:

- A. Lime: Lime shall be ground limestone (Dolomite) containing not less than 85 percent of total carbonates, and shall be ground to such a fineness that 50-percent will pass a 100-mesh sieve and 90-percent will pass a 20-mesh sieve.
- B. Fertilizer: Commercial fertilizer shall be 16-4-8 formulation of which 60-percent of the nitrogen is in the urea-formaldehyde form and shall conform to the applicable State Fertilizer laws. It shall be granulated so that 80-percent is held on a 16-mesh screen, uniform in composition, dry and free-flowing.
- C. Sod: All sod shall be healthy. Sod shall be strongly rooted, free of weeds and undesirable grasses, and capable of providing vigorous growth and development when planted. Sod shall match existing species where restoration is required as a result of the Contractor's work.

PART 3 - EXECUTION

3.1 REQUIREMENTS:

All areas indicated and all other areas disturbed by the Contractor's operations, shall be sodded.

3.2 ESTABLISHMENT OF TURF

- A. Grading: Areas to be grassed shall be graded to remove depressions, undulations, and irregularities in the surface before grassing. Adhere to grades as shown on plans.
- B. Tillage: The area to be grassed shall be thoroughly tilled to a depth of four inches using a plow and disc harrow or rotary tilling machinery until a suitable bed has been prepared and no clods or clumps remain larger than 1-1/2 inches in diameter. Remove sticks, roots, and rubbish.
- C. Applying Lime: The pH of the soil shall be determined. If the pH is below 5.0, sufficient lime shall be added to provide a pH between 5.5 and 6.5. The lime shall be thoroughly incorporated into the top three to four inches of the soil. Lime and fertilizer may be applied in one operation.
- D. Applying Fertilizer: Fertilizer shall be applied at the rate of 12 pounds per 1,000 sq. ft. and shall be thoroughly incorporated into the top three to four inches of soil before sod or seed is installed.
- E. Seeding: Apply seed in accordance with FDOT Specs Section 570.
- F. Maintenance: Maintenance shall begin immediately following the last operation of grassing and continue until final acceptance. Minimum maintenance period shall be 90 days from date of sodding. Maintenance shall include watering, mowing, replanting, and all other work necessary to produce a uniform stand of grass.

3.3 PLANTING SOD:

- A. The sod shall be live, fresh, and uninjured at the time of planting and shall have a thick mat of roots with enough adhering soil to assure growth. Apply sod within 24 hours of stripping. Do not plant dormant sod or if ground is frozen. Protect sod against drying and breaking of rolled strips.
- B. Placement: Prepare the ground by loosening the soil. Place sod on the prepared soil to form a solid mass with tightly fitted joints. Butt ends and sides of sod strips; do not overlap. Stagger strips to avoid a continuous downhill seam. Tamp or roll lightly to ensure contact with subgrade. Tamp the outer edges of the sodded area to produce a smooth contour. Work sifted soil into minor cracks between pieces of sod; remove excess to avoid smothering of adjacent grass. Water sod thoroughly with a fine spray immediately after planting.
- C. Watering: Keep sod continuously moist to a depth below the root zone for three weeks after placement. If there is no water available to the site, the Contractor shall provide the water for the sod.

- D. Clean-Up: All excess soil, excess grass materials, stones, pallets and other waste shall be removed from the site daily and not allowed to accumulate. All paved areas shall be kept clean at all times.
- E. Maintenance: Maintain sod by watering, fertilizing, weeding, mowing, trimming and other operations such as rolling, re-grading, and re-planting as required to establish a lawn free of eroded or bare areas and acceptable to the Engineer. Where inspected work and materials do not comply with requirements, replace rejected work and continue maintenance until re-inspected by Engineer and found to be acceptable. Remove rejected materials promptly from the project site.

END OF SECTION 02525

SECTION 02900 EROSION CONTROL

PART ONE

This section designates the requirements for erosion control of the project site.

PART TWO-PRODUCTS

All materials used for erosion control shall meet federal, state and local requirements and shall conform with the requirements of FDOT Specification Section 104.

PART THREE-EXECUTION

- 3.1 The Contractor shall take steps and make suitable provisions to prevent or minimize siltation and erosion which may result from, or be as a result of, his operations during the course of construction of these projects.
- 3.2 The Contractor shall maintain silt fence barriers, and turbidity screens at all times during construction where siltation and erosion may occur and as shown on the project drawings.
- 3.3 The Contractor shall submit to the engineer, for written approval prior to construction, the methods to be used to control siltation and erosion. The Engineer's approval of the method to be used in no way relieves the Contractor of liability in case of a citation by federal, state, or local regulatory agency having jurisdiction thereof.

END OF SECTION 02900

SECTION 03270

MILLING OF EXISTING ASPHALT PAVEMENT

1.1 Description.

Remove existing asphalt concrete pavement by milling to improve the rideability and cross slope of the finished pavement, to lower the finished grade adjacent to existing curb prior to resurfacing, or to completely remove existing pavement.

When milling to improve rideability, the plans will specify an average depth of cut.

Take ownership of milled material.

2.2 Equipment.

Provide a milling machine capable of maintaining a depth of cut and cross slope that will achieve the results specified in the Contract Documents. Use a machine with a minimum overall length (out to out measurement excluding the conveyor) of 18 feet and a minimum cutting width of 6 feet.

Equip the milling machine with a built-in automatic grade control system that can control the transverse slope and the longitudinal profile to produce the specified results.

To start the project, the Engineer will approve any commercially manufactured milling machine that meets the above requirements. If it becomes evident after starting milling that the milling machine cannot consistently produce the specified results, the Engineer will reject the milling machine for further use.

The Contractor may use a smaller milling machine when milling to lower the grade adjacent to existing curb or other areas where it is impractical to use the above described equipment.

Equip the milling machine with means to effectively limit the amount of dust escaping during the removal operation.

For complete pavement removal, the Engineer may approve the use of alternate removal and crushing equipment in lieu of the equipment specified above.

3.3 Construction.

Remove the existing raised reflective pavement markers prior to milling. Include the cost of removing existing pavement markers in the price for milling.

When milling to improve rideability or cross slope, remove the existing pavement to the average depth specified in the plans, in a manner that will restore the pavement surface to a uniform cross-section and longitudinal profile. The Engineer may require the use of a stringline to ensure maintaining the proper alignment.

Establish the longitudinal profile of the milled surface in accordance with the milling plans. Ensure that the final cross slope of the milled surface parallels the surface cross slope shown on the plans or as directed by the Engineer. Establish the cross slope of the milled surface by a second sensing device near the outside edge of the cut or by an automatic cross slope control mechanism. The plans may waive the requirement of automatic grade or cross slope controls where the situation warrants such action.

Multiple cuts may be made to achieve the required pavement configuration or depth of cut. Include in the Quality Control Plan a system to control the cross slope of the milling surface with a minimum frequency of one cross slope measurement every 250 feet during milling operations in order to ensure that the slopes are uniform and in compliance with the designed milling slope. When the difference between the measured cross slope and the designed cross slope exceeds $\pm 0.2\%$ for travel lanes (including turn lanes) and $\pm 0.5\%$ for shoulders, make all corrections immediately to bring the cross slope into an acceptable range. The Engineer may periodically verify the Contractor's measurements at the job site.

The Engineer will randomly take ten measurements of the cross slope per day for the first two

days of milling operation. If the average cross slope of the ten random measurements per day varies more than the required tolerance (0.2% for travel lanes including turn lanes and 0.5% for shoulders), the milling operation shall be stopped until appropriate corrective actions are made to bring the cross slope into an acceptable range. Approval of the Engineer will be required prior to resuming the milling operation. A recheck of ten random measurements will be made after corrective actions are taken. If the recheck indicates that the cross slope is out of control, the deficient section(s) shall be corrected to bring the cross slope into an acceptable range. During milling operations, the Engineer reserves the right to take ten cross slope measurements per day. If the average cross slope of the ten measurements varies more than the permissible tolerance, the milling operation will be stopped until appropriate corrective actions are made to bring the cross slope into an acceptable range and the deficient sections shall be corrected accordingly.

The Engineer may waive the corrections specified above if an engineering determination indicates that the deficiencies are sufficiently separated so as not to significantly affect the final cross slope.

For intersections, tapers, crossovers, transitions at the beginning and end of the project and in other similar areas, the cross slope will be adjusted as directed by the Engineer to match the actual site conditions.

Operate the milling machine to minimize the amount of dust being emitted. The Engineer may require pre-wetting of the pavement.

Provide positive drainage of the milled surface and the adjacent pavement. Perform this operation on the same day as milling. Repave all milled surfaces no later than the day after the surface was milled unless otherwise stated in the plans.

If traffic is to be maintained on the milled surface prior to the placement of the new asphalt concrete, provide suitable transitions between areas of varying thickness to create a smooth longitudinal riding surface. Produce a pattern of striations that will provide an acceptable riding surface. The Engineer will control the traveling speed of the milling machine to produce a texture that will provide an acceptable riding surface.

Prior to opening an area which has been milled to traffic, sweep the pavement with a power broom or other approved equipment to remove, to the greatest extent practicable, fine material which will create dust under traffic. Sweep in a manner that will minimize the potential for creation of a traffic hazard and to minimize air pollution.

Sweep the milled surface with a power broom prior to placing asphalt concrete.

In urban and other sensitive areas, use a street sweeper or other equipment capable of removing excess milled materials and controlling dust. Obtain the Engineer's approval of such equipment, contingent upon its demonstrated ability to do the work.

Perform the sweeping operation immediately after the milling operations or as directed by the Engineer.

4.4 Milled Surface.

Provide a milled surface with a reasonably uniform texture, within 1/4 inch of a true profile grade, and with no deviation in excess of 1/4 inch from a straightedge applied to the pavement perpendicular to the centerline. Ensure that the variation of the longitudinal joint between multiple cut areas does not exceed 1/4 inch. The Engineer may accept areas varying from a true surface in excess of the above stated tolerance without correction if the Engineer determines that they were caused by a pre-existing condition which could not have reasonably been corrected by the milling operations. Correct any unsuitable texture or profile, as determined by the Engineer, at no additional expense to the Department.

The Engineer may require re-milling of any area where a surface lamination causes a non-uniform texture to occur.

5.5 Method of.

The quantity to be paid for will be the plan quantity area, in square yards, over which milling is completed and accepted.

6.6 Basis of Payment.

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 SECTION 03270

SECTION 03300
CAST-IN-PLACE CONCRETE

PART 1-GENERAL

- 1.1 GENERAL DESCRIPTION OF WORK COVERED: Mixing, placing, finishing and providing all related services necessary to construct all cast-in-place concrete work indicated on plans.
- 1.2 QUALITY ASSURANCE:
- 1.2.1 Comply with the latest published edition of the American Concrete institute (ACI) and American Society of Testing and Materials (ASTM) standards and codes:
1. ACI 301 - Specification for Structural Concrete for Buildings.
 2. ACI 305 - Placing Concrete in Hot Weather
 3. ACI 306 - Placing Concrete in Cold Weather
 4. ACI 318 - Building Code Requirements for Reinforced Concrete.
- 1.2.2 Manufacturer's Data: Submit manufacturer's product data with installation instructions for proprietary materials including reinforcement and forming accessories, admixtures, joint materials, hardeners, curing materials and others as requested by Engineer.
- 1.2.3 Laboratory Reports: Submit 2 copies of laboratory test or evaluation reports for concrete materials and mix designs as requested by Engineer.
- 1.2.4 Mix Proportions and Design: Proportion mixes complying with mix design procedures specified in ACI 301.
- 1.2.4.1. Submit written report to Engineer for each proposed concrete mix at least 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed and are acceptable to Engineer.
- 1.2.4.2. Mix designs may be adjusted when material characteristics, job conditions, weather, test results or other circumstances warrant. Do not use revised concrete mixes until submitted to and accepted by Engineer.
- 1.2.4.3. Use air-entraining admixture in all concrete, providing not less than 4 percent nor more than 6 percent entrained air for concrete exposed to freezing and thawing, and from 2 percent to 4 percent for other concrete.
- 1.2.5 Concrete Testing Service: Employ acceptable testing laboratory to perform materials evaluation, testing and design of concrete mixes. (when required by Owner).
- 1.2.5.1. Sampling: ASTM C 172
- 1.2.5.2. Slump: ASTM C 143, one test for each load at point of discharge.
- 1.2.5.3. Air Content: ASTM C 173, one for each set of compressive strength specimens.

- 1.2.5.4. Compressive Strength: ASTM C 39, one set for each 50 cu. yds. or fraction thereof of each class of concrete; one specimen tested at 7 days, one specimen tested at 28 days, and one retained for later testing if required.
- 1.2.5.5. When the total quantity of a given class of concrete is less than 50 cu. yds., strength tests may be waived by Engineer, if field experience indicates evidence of satisfactory strength.
- 1.2.5.6. Test results will be reported in writing to Engineer, Contractor, and concrete producer within 24 hours after tests are made.

PART 2 - PRODUCTS

2.1 PRODUCTS:

- 2.1.1 Portland Cement: ASTM C 150, type as required.
- 2.1.2 Fly Ash: ASTM C 618, Type C or F.
- 2.1.3 Limit use of fly ash in concrete mix design to not exceed 25 percent of cement content by weight.
- 2.1.4 Aggregates: ASTM C 33, except local aggregates of proven durability may be used when acceptable to Engineer.

2.2 WATER: Potable.

2.3 ADMIXTURES:

- 2.3.1 Air-Entraining Admixture: ASTM C 260.
- 2.3.2 Water-Reducing Admixture: ASTM C 494, type as required to suit project conditions. Only use admixtures which have been tested and accepted in mix designs, unless otherwise acceptable. Superplasticizers are not permitted without prior approval of Engineer.

2.4 RELATED MATERIALS:

- 2.4.1 Waterstops: Flat dumbbell or centerbulb type, size to suit joints, of either rubber (CRD C 513) or PVC (CRD C 572).
- 2.4.2 Moisture Barrier: Clear 8-mils thick polyethylene; polyethylene-coated barrier paper, or 1/8" thick asphalt core membrane sheet.
- 2.4.3 Membrane-Forming Curing Compound: ASTM C 309, Type 1.
- 2.4.4 Joint Fillers:
 - 2.4.4.1. Joint Sealer: Hot poured, non-extruding, elastic, ASTM 1190.
 - 2.4.4.2. Performed Expansion Joint Filler: Non-extruding, bituminous fiber, ASTM ASTM D 1751

2.4.5 Provide form materials with sufficient stability to withstand pressure of placed concrete without bow or deflection.

2.4.6 Exposed Concrete Surfaces: Material to suit project conditions.

2.5 REINFORCING MATERIALS:

2.5.1 Deformed Reinforcing Bars: ASTM A 615, Grade 60, unless otherwise indicated.

2.5.2 Welded Wire Fabric: ASTM A 185.

2.6 FORMING AND PLACING CONCRETE:

2.6.1 Job-Site Mixing: Use drum type batch machine mixer, mixing not less than 1 ½ minutes for one cu. yd. or smaller capacity. Increase mixing time at least 15 seconds for each additional cu. yd. or fraction thereof.

2.6.2. Ready-Mix Concrete: ASTM C 94.

2.6.3. Form work: Construct so that concrete members and structures are for correct size, shape, alignment, elevation and position.

2.6.3.1. Provide openings in form work to accommodate work of other trades. Accurately place and securely support items built into forms.

2.6.3.2. Clean and adjust forms prior to concrete placement. Apply form release agents or wet forms, as required. Re-tighten forms during concrete placement if required to eliminate mortar leaks.

2.6.4 Reinforcement: Position, support and secure reinforcement against displacement. Locate and support with metal chairs, runners, bolsters spacers and hangers, as required. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

2.6.5 Install welded wire fabric in as long lengths as practical, lapping at least one mesh at both ends and sides. Tie at laps.

2.6.6 Joints: Provide construction, isolation, and control joints as indicated or required. Locate construction joints so as to not impair strength and appearance of structure. Locate isolation and control joints in slabs-on-ground to accommodate differential settlement and prevent random cracking.

2.6.7 Installation of Embedded Items: Set and build into work anchorage devices and other embedded items required for other work that is attached to, or supported by cast-in-place concrete. Use setting diagrams templates and instructions provided by others for locating and setting.

2.6.8 Concrete Placement: Comply with ACI, placing concrete in a continuous operation within planned joints or sections. Do not begin placement until work of other trades affecting concrete is completed.

- 2.6.9 Consolidate concrete using mechanical vibrating equipment, hand rodding and tamping, so that concrete is well compacted around reinforcement and other embedded items and into forms.
- 2.6.10 Protect concrete from physical damage or reduced strength due to weather extremes during mixing, placement and curing.
 - 2.6.10.1. In cold weather comply with ACI 306.
 - 2.6.10.2. In hot weather comply with ACI 305.

2.7 CONCRETE FINISHES:

- 2.7.1 Exposed-to-view Surfaces: Provide a smooth finish for exposed concrete surfaces and surfaces that are to be covered with a coating or covering material applied directly to concrete. Remove fins and projections, patch defective areas with cement grout, and rub smooth.
- 2.7.2 Slab Trowel Finish: Apply trowel finish to monolithic slab surfaces that are exposed-to-view or are to be covered with resilient flooring, paint or other thin film coating. Consolidate concrete surfaces by floating then finish troweling, free of trowel marks and uniform in texture and appearance.
- 2.7.3 Broom Finish: Apply broom finish to monolithic slab surfaces that are exposed to view and subject to vehicular or pedestrian traffic. Consolidate concrete surfaces by floating and troweling prior to applying broom finish.
- 2.7.4 Curing: Begin initial curing as soon as free water has disappeared from exposed surfaces. Where possible, keep continuously moist for not less than 72 hours. Continue curing by use of moisture-retaining cover or membrane-forming curing compound. Cure formed surfaces by moist curing until forms are removed. Provide protections as required to prevent damage to exposed concrete surfaces.

END OF SECTION 3300

CONSTRUCTION PLANS FOR : PETER PRINCE FIELD PROPOSED SERVICE ROAD & AVIATION DR. EXTENSION

SANTA ROSA COUNTY FLORIDA

DATE: JULY 2016

GENERAL NOTES:

- ALL ELEVATIONS AND SLOPES PROVIDED IN THESE PLANS ARE TO BE STRICTLY ADHERED TO. THERE CAN BE NO MODIFICATIONS OR REVISIONS TO THESE PLANS WITHOUT PRIOR FIELD INSPECTION AND APPROVAL FROM SANTA ROSA COUNTY.
- ALL SITE WORK MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
- ALL DISTURBED AREAS SHALL BE SODDED WITH BAHIA SOD UNLESS NOTED. PROVIDE SOD ALL AROUND STRUCTURES PER FDOT SPECIFICATIONS. SOD AND PIN WHERE INDICATED. CONTRACTOR MUST WATER SOD THROUGH-OUT UNTIL FINAL ACCEPTANCE. DEAD SOD WILL NOT BE ALLOWED.
- IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PRESERVE OR RELOCATE ALL BENCHMARKS (BM) AND/OR TEMPORARY BENCHMARKS (TBM) AS NEEDED DURING CONSTRUCTION.
- ANY CLEARING AND GRUBBING BID ITEM SHALL ALSO INCLUDE THE REMOVAL (DEMOLITION) OF EXISTING DRAINAGE STRUCTURES AND DRAINAGE PIPES.
- THE CONTRACTOR IS CAUTIONED TO VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE PROJECT PRIOR TO BIDDING.
- THE ELEVATIONS AND/OR CONTOURS SHOWN HEREON ARE BASED ON NAD 83 (2011) DATUM.
- ALL SUITABLE EXCAVATED MATERIAL IS TO REMAIN ON SITE AND BE STOCK PILED AT LOCATIONS DETERMINED BY THE ENGINEER OF RECORD. UNSUITABLE EXCAVATED MATERIALS AND DEMOLITION MATERIALS ARE TO BE REMOVED FROM THE SITE.
- CONTRACTOR SHALL NOTIFY COUNTY ENGINEER 48 HOURS PRIOR TO DEMOLITION AND CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ANY EXISTING IMPROVEMENTS AND/OR FEATURES. ALL PERMANENT SURVEY MARKERS OR PROPERTY CORNERS REMOVED DURING CONSTRUCTION SHALL BE REESTABLISHED BY A PROFESSIONAL SURVEYOR AND MAPPER REGISTERED IN THE STATE OF FLORIDA AND PAID FOR AT THE CONTRACTORS EXPENSE.
- ALL WORK SHALL COMPLY WITH THESE SPECIFICATIONS AND APPLICABLE STANDARDS ESTABLISHED BY SANTA ROSA COUNTY, WHERE THESE SPECIFICATIONS AND THE COUNTY STANDARDS DEVIATE THE MORE STRINGENT REQUIREMENT SHALL PREVAIL UNLESS OTHERWISE APPROVED BY THE ENGINEER OF RECORD.
- ALL DIMENSIONS AND GRADES ON THESE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE RE-DONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
- CONTRACTOR SHALL ESTABLISH NEW BENCHMARKS AS REQUIRED.
- ALL DISTURBED AREAS NOT SODDED SHALL BE STABILIZED WITH SEEDING FERTILIZER AND MULCH. ALL SOD, MULCH, HAY, STRAW OR SEED MATERIALS SHALL BE FREE OF NOXIOUS WEEDS.
- CONTRACTOR IS RESPONSIBLE FOR NOTIFYING SUNSHINE UTILITIES 48-HOURS PRIOR TO CONSTRUCTION COMMENCEMENT FOR EXISTING UTILITY LOCATION. (SUNSHINE UTILITIES: 1-800-432-4770) EXISTING UTILITIES, WHICH MAY OR MAY NOT BE INDICATED ON THESE PLANS, ARE SHOWN IN THEIR APPROXIMATE LOCATION ONLY.
- CONTRACTOR SHALL VERIFY SIZE, LOCATION, AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE WITH NO ADDITIONAL COMPENSATION.
- CONTRACTOR IS RESPONSIBLE FOR ADJUSTMENT OF EXISTING UTILITIES IF PROPOSED IMPROVEMENTS IMPACT EXISTING UTILITIES.
- ALL PIPE JOINTS ARE TO BE WRAPPED WITH FILTER CLOTH.
- THE CONTRACTOR SHALL REMOVE AND REPLACE TO THEIR ORIGINAL OR BETTER CONDITION ALL FENCES, HEDGES, SHRUBS, LAWNS OR IRRIGATION SYSTEMS (IF ANY) DISTURBED BY CONSTRUCTION OR DEMOLITION OPERATIONS.
- THE COST FOR CLEARING AND GRUBBING SHALL INCLUDE THE REMOVAL OF ALL TREES, SHRUBS, OTHER VEGETATION, IMPROVEMENTS AND OBSTRUCTIONS WITHIN THE LIMITS OF CONSTRUCTION WHETHER SHOWN ON THE PLANS OR NOT.
- ALL TREES OUTSIDE THE LIMITS OF CONSTRUCTION ARE TO REMAIN AND BE PROTECTED DURING CONSTRUCTION.
- THE CONTRACTOR SHALL CAREFULLY AND CLEANLY CUT MINOR ROOTS AND BRANCHES OF TREES OUTSIDE THE LIMITS OF CONSTRUCTION THAT ARE TO REMAIN WHERE SUCH ROOTS AND BRANCHES OBSTRUCT THE NEW CONSTRUCTION OR DEMOLITION.
- THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTMENT/RELOCATION OF EXISTING UTILITIES IF PROPOSED IMPROVEMENTS IMPACT EXISTING UTILITIES.
- THE GEOTECHNICAL ENGINEERING REPORT IS PART OF THE PLANS AND SPECIFICATIONS AND SHALL BE FOLLOWED THROUGH ALL PHASES OF CONSTRUCTION.
- UPON CONSTRUCTION COMPLETION THE CONTRACTOR SHALL SUBMIT AS-BUILT DRAWINGS NOTING ANY CHANGES MADE DURING CONSTRUCTION TO SANTA ROSA COUNTY ENGINEERING.



VICINITY MAP
NOT TO SCALE

OWNER: BOARD OF COUNTY COMMISSIONERS
SANTA ROSA COUNTY, FLORIDA

JAYER WILLIAMSON - VICE CHAIRMAN ---- DISTRICT I
ROBERT A. "BOB" COLE ---- DISTRICT II
W.D. "DON" SALTER ---- DISTRICT III
ROB WILLIAMSON ---- DISTRICT IV
LANE LYNCHARD - CHAIRMAN ---- DISTRICT V

ENVIRONMENTAL NOTES:

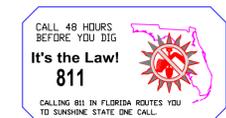
- THE CONTRACTOR SHALL ESTABLISH EROSION CONTROL PRIOR TO COMMENCING ANY CONSTRUCTION OR DEMOLITION ON THE PROJECT. EROSION CONTROL BARRIER PLACEMENT AS INDICATED (AROUND THE PERIMETER OF PROPOSED CONSTRUCTION) IS SUGGESTED ONLY AND DOES NOT RELIEVE THE CONTRACTOR FROM CONTROLLING EROSION AND SEDIMENT WITHIN THE PROJECT SITE. EROSION CONTROL MEASURES ARE TO REMAIN IN PLACE AND SHALL BE MAINTAINED DURING THE ENTIRE TIME OF CONSTRUCTION AND DEMOLITION ON THE PROJECT.
- CONTRACTOR IS TO ENSURE THAT ALL SEDIMENT CONTROL MEASURES ARE FULLY FUNCTIONAL DURING RAINFALL EVENTS. ALL HAY-BALES AND SILT FENCES SHALL REMAIN INTACT UNTIL CONSTRUCTION IS COMPLETE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL TEMPORARY EROSION CONTROL MEASURES AS REQUIRED TO ENSURE NO SEDIMENTS ARE TRANSPORTED OFF-SITE VIA STORMWATER RUN-OFF.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY INSPECTIONS OF ALL SEDIMENT CONTROL AREAS, ANY REPAIRS AND SEDIMENT REMOVAL NECESSARY FOR PROPER OPERATION.
- ADDITIONAL SEDIMENT FENCING AND/OR HAY BALES MAY BE REQUIRED IN ALL AREAS SUBJECT TO EROSION.
- CONTRACTOR SHALL PLACE SILT FENCE AND HAY BALES AROUND ALL NEW AND EXISTING INLETS WITHIN THE PROJECT AREA OR AS DETERMINED BY THE ENGINEER OF RECORD.
- NO SEDIMENT SHALL BE ALLOWED TO EXIT THE PROJECT AREA. THE CONTRACTOR IS RESPONSIBLE FOR TAKING ADEQUATE MEASURES FOR CONTROLLING EROSION.

LEGEND

- - SET 4" SQUARE CONCRETE MONUMENT, SRCE PSM 4511
- - FOUND 4" SQUARE CONCRETE MONUMENT, SRCE PSM 3454
- - FOUND 4" SQUARE CONCRETE MONUMENT, LB 3140
- - FOUND 4" SQUARE CONCRETE MONUMENT, SRD
- ⊙ - FOUND 1/2" CAPPED ROD, SRCE PSM 3454
- LB - LICENSED BUSINESS
- PSM - PROFESSIONAL SURVEYOR & MAPPER
- R/W - RIGHT OF WAY
- SRCE - SANTA ROSA COUNTY ENGINEERING
- SRD - STATE ROAD DEPARTMENT
- Ⓢ - CONTROL DATA ID
- IE - INVERT ELEVATION
- TE - TOP ELEVATION
- RCP - REINFORCED CONCRETE PIPE
- MH - MANHOLE
- TBM - TEMPORARY BENCHMARK
- SPC - STATE PLANE COORDINATE
- C/L - CENTERLINE
- PC - POINT OF CURVATURE
- PT - POINT OF TANGENCY
- ELEV - ELEVATION
- T.E - TOP ELEVATION
- I.E - INVERT ELEVATION
- R.P - RADIUS POINT
- MES - METERED END SECTION
- EOP - EDGE OF PAVEMENT
- CMP - CORRUGATED METAL PIPE
- F= - FINISH GRADE SPOT ELEVATION
- 2+00 - PROPOSED CENTERLINE STATIONING
- ⊕ - TEMPORARY BENCHMARK LOCATION
- - DIRECTION OF STORMWATER FLOW
- — — PROPOSED SILT FENCE EROSION CONTROL
- — — EXISTING FORCEMAIN
- - ROCK RIP-RAP (PROPOSED & EXISTING)
- — — EXISTING CONTOUR (1 FOOT INTERVALS)
- — — PROPOSED FINISHED GRADE CONTOUR
- ▨▨▨▨ - ASPHALT (EXISTING & PROPOSED)

SHEET INDEX:

- SHEET 1--- COVER SHEET WITH GENERAL & ENVIRONMENTAL NOTES AND VICINITY MAP
- SHEET 2--- EXISTING CONDITIONS SERVICE ROAD
- SHEET 3--- PLAN & PROFILE SHEET SERVICE ROAD
- SHEET 4--- CROSS-SECTIONS FOR SERVICE ROAD
- SHEET 5--- EXISTING CONDITIONS AVIATION ROAD EXTENSION
- SHEET 6--- PLAN & PROFILE AVIATION ROAD EXTENSION
- SHEET 7--- CROSS-SECTIONS FOR AVIATION ROAD EXTENSION
- SHEET 8--- DETAIL SHEET
- SHEET 9--- STORMWATER POLLUTION PREVENTION PLAN
- SHEET 10--- STORMWATER POLLUTION PREVENTION PLAN DETAILS



SANTA ROSA COUNTY ENGINEERING
6051 OLD BAGDAD HIGHWAY
SUITE 300
MILTON, FLORIDA 32583
(850) 981-7100

PETER PRINCE FIELD
PROPOSED ROAD COVER SHEET
SECTION 31, T-2-N, R-27-W,
SANTA ROSA COUNTY, FLORIDA

SCALE:
AS SHOWN

REVISIONS:
N/A
N/A

DRAWN BY:
D.C.G.

DATE DRAWN:
05-13-2016

FIELD DATE:
04-21-2014

F.B. N/A
PAGE N/A

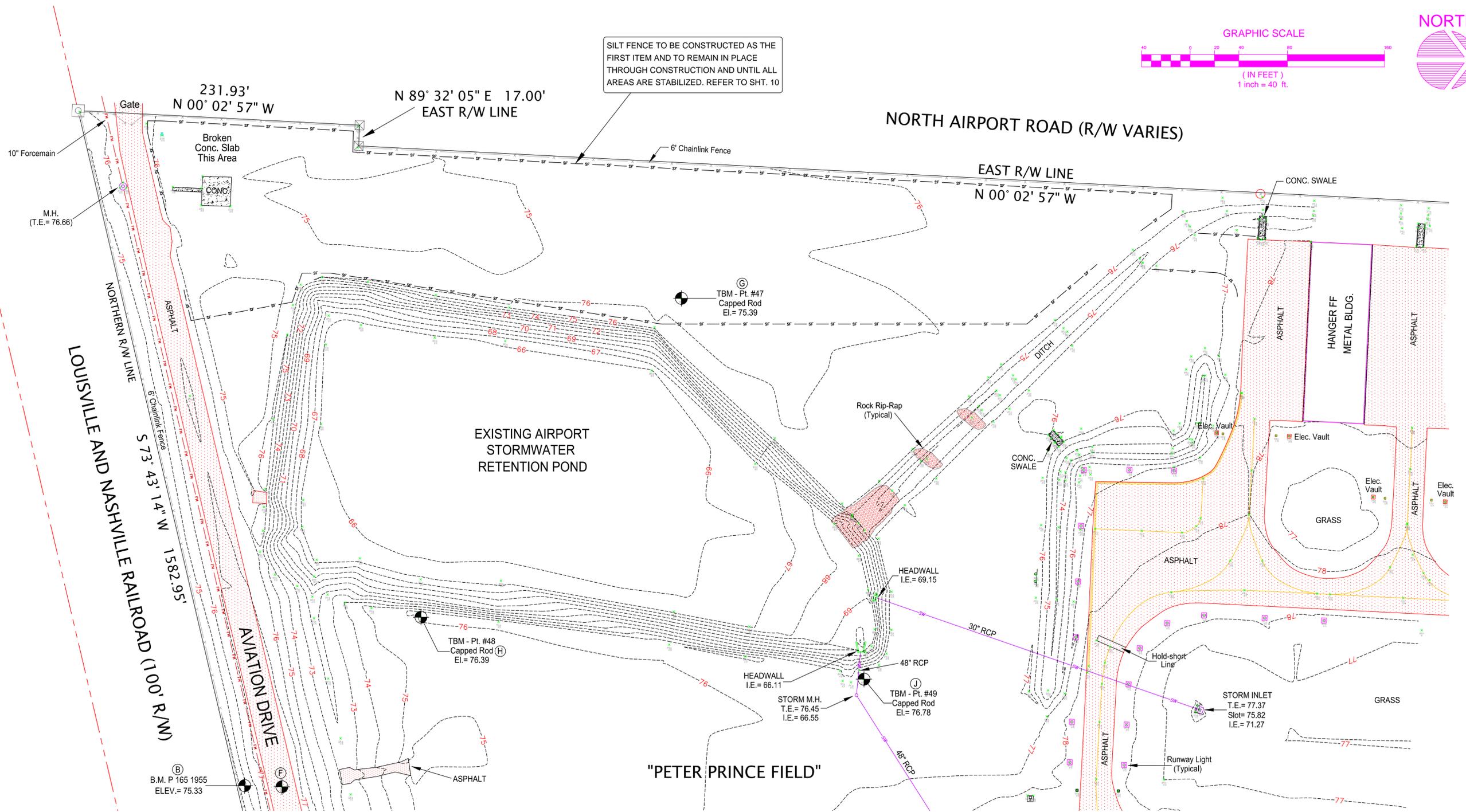
PROJECT NO.
2011H-018-001

MARC BONIFAY, P.E.

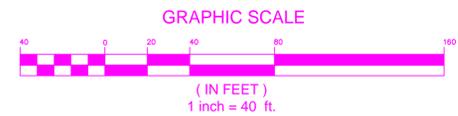
DATE:
Registered Engineer
Number 51304

SHEET
1 OF 10

Roger Blaylock, P.E., County Engineer ~ Mark Bonifay, P.E., Project Engineer



SILT FENCE TO BE CONSTRUCTED AS THE FIRST ITEM AND TO REMAIN IN PLACE THROUGH CONSTRUCTION AND UNTIL ALL AREAS ARE STABILIZED. REFER TO SHT. 10



GENERAL NOTES:

* THE ELEVATIONS SHOWN HEREON ARE BASED ON BENCHMARK P 165 1955, ELEVATION 75.33 FEET, NAVD88 DATUM.

SURVEY CONTROL DATA

ID	POINT NUMBER	ELEVATION	DESCRIPTION	NORTHING	EASTING
Ⓟ	N/A	75.33	P 165 1955 CONCRETE MONUMENT	601612.43	1184115.11
Ⓣ	42	77.89	SET NAIL IN ASPHALT	601643.06	1184116.32
Ⓞ	47	75.39	SET CAPPED ROD	601971.74	1184116.32
ⓗ	48	76.39	SET CAPPED ROD	601757.27	1183977.27
Ⓤ	49	76.78	SET CAPPED ROD	602121.66	1184028.13



SCALE:
 AS SHOWN

REVISIONS:
 N/A
 N/A

DRAWN BY:
 D.C.G.

DATE DRAWN:
 05-13-2016

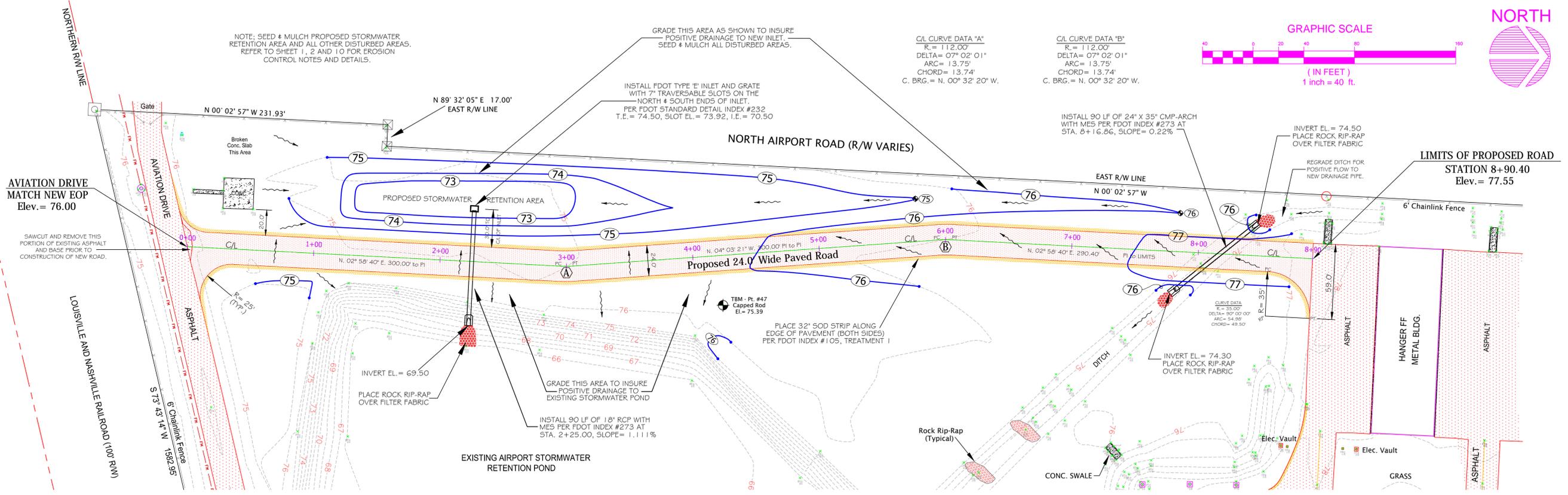
FIELD DATE:
 12-15-2011

FB 101 PGS. 71-77
 FB 103 PGS. 4-8
 AND PGS. 28-30

PROJECT NO.
 2011H-018-001

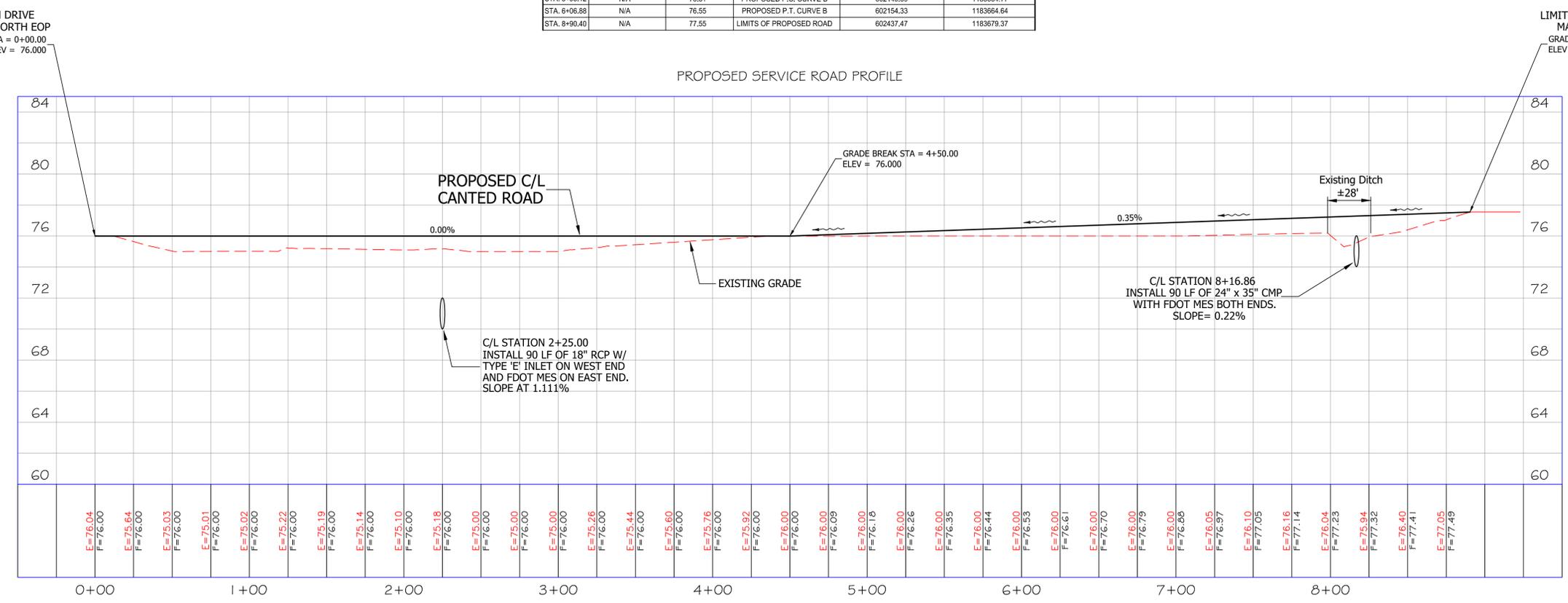
MARC BONIFAY, P.E.
 DATE:
 Registered Engineer
 Number 51304

SHEET
 3 OF 10



PROPOSED ROAD C/L CONTROL DATA

ID	POINT NUMBER	ELEVATION	DESCRIPTION	NORTHING	EASTING
STA. 0+00	N/A	76.00	MATCH NEW EOP	601548.62	1183669.91
STA. 2+93.12	N/A	76.00	PROPOSED P.C. CURVE A	601841.34	1183685.14
STA. 3+06.88	N/A	76.00	PROPOSED P.T. CURVE A	601855.08	1183685.01
STA. 5+93.12	N/A	76.51	PROPOSED P.C. CURVE B	602140.59	1183664.77
STA. 6+06.88	N/A	76.55	PROPOSED P.T. CURVE B	602154.33	1183664.64
STA. 8+90.40	N/A	77.55	LIMITS OF PROPOSED ROAD	602437.47	1183679.37



PETER PRINCE FIELD
 PROPOSED SERVICE ROAD
 ROAD CROSS - SECTIONS

SCALE:
 HORZ. SCALE: 1" = 20'
 VERT. SCALE: 1" = 4'

REVISIONS:
 N/A
 N/A

DRAWN BY:
 D.C.G.

DATE DRAWN:
 05-13-2016

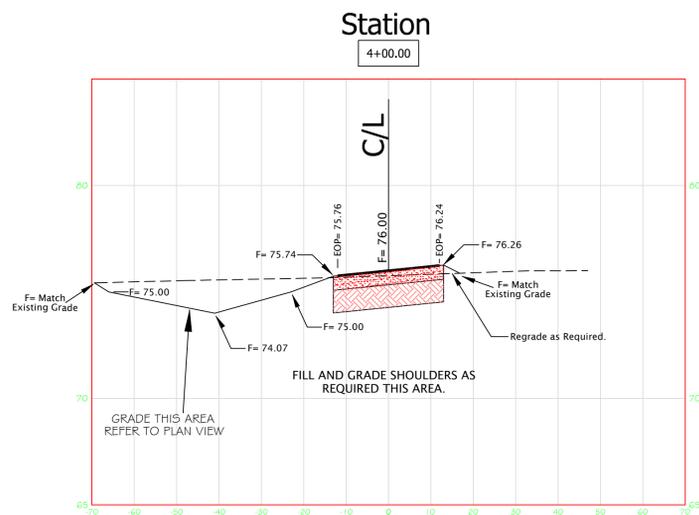
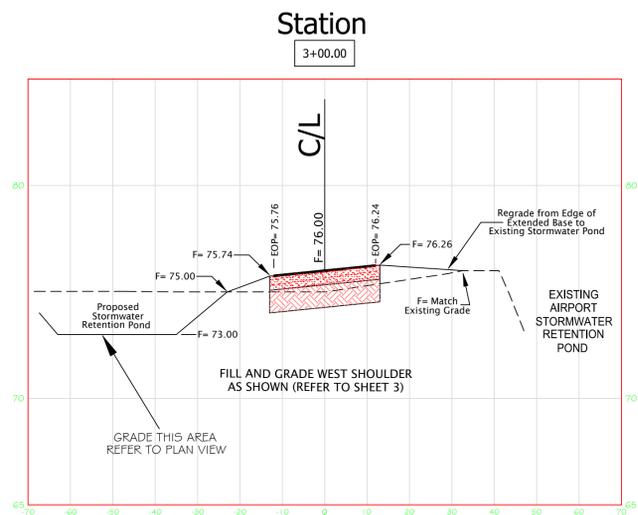
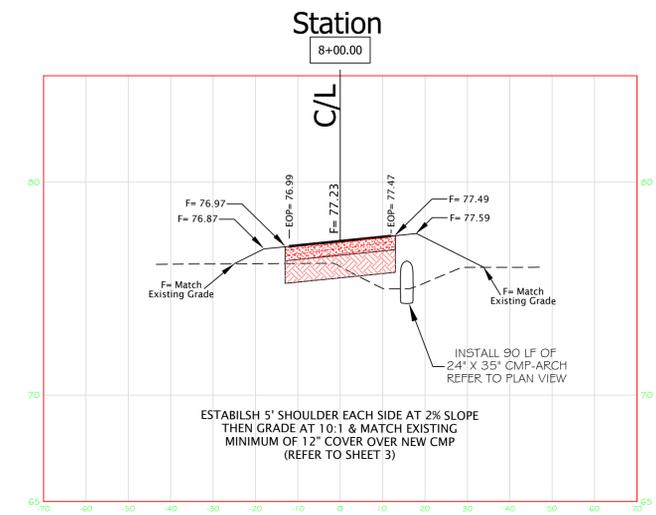
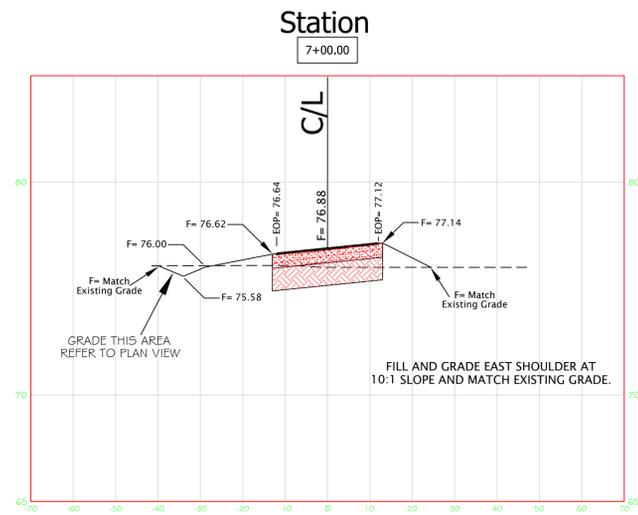
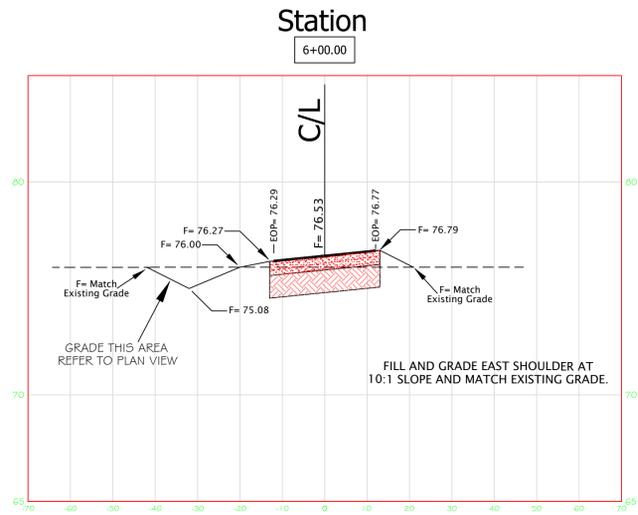
FIELD DATE:
 12-15-2011

FB 101 PGS. 71-77
 FB 103 PGS. 4-8
 AND PGS. 28-30

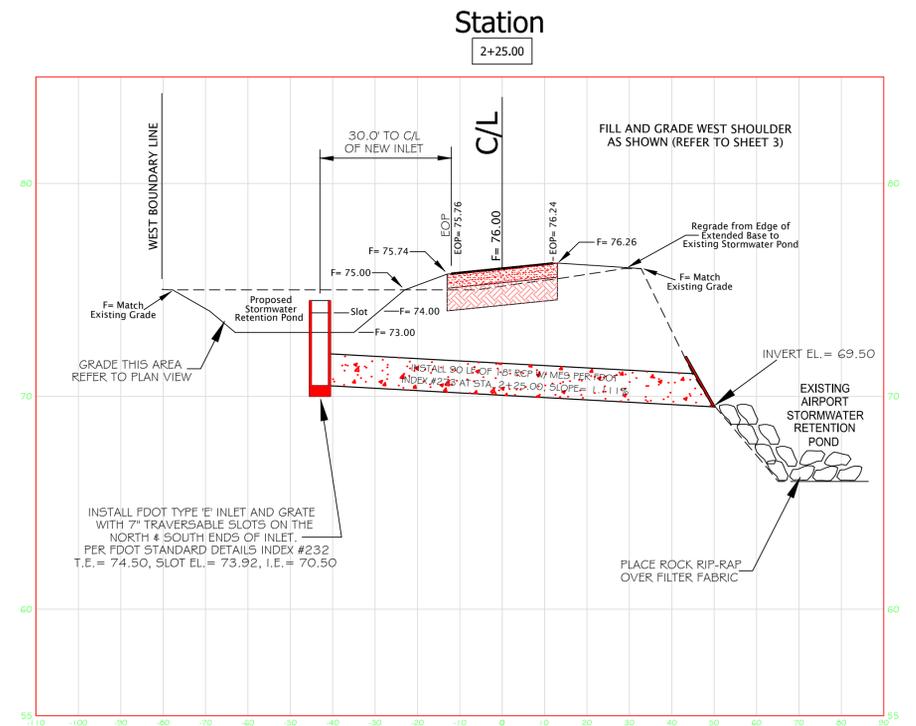
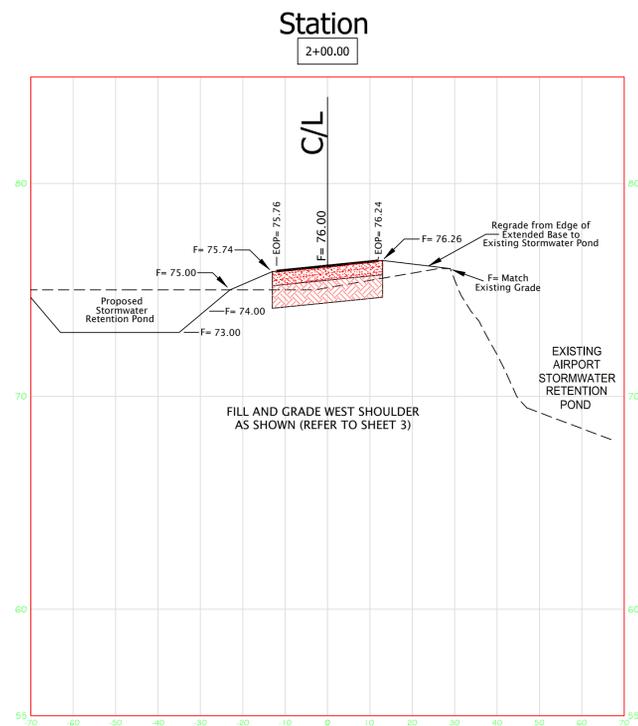
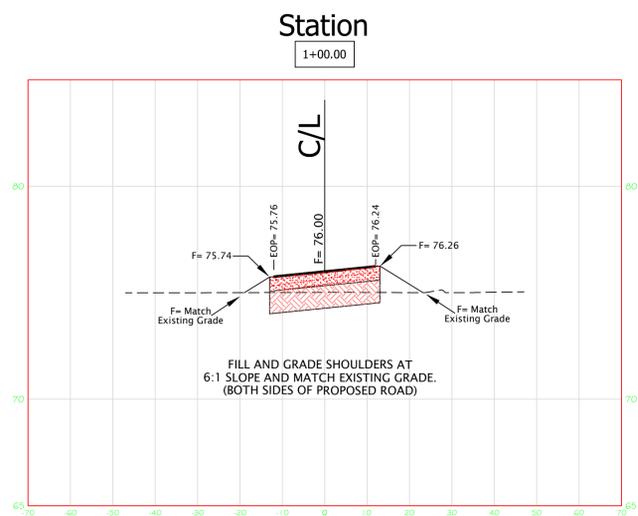
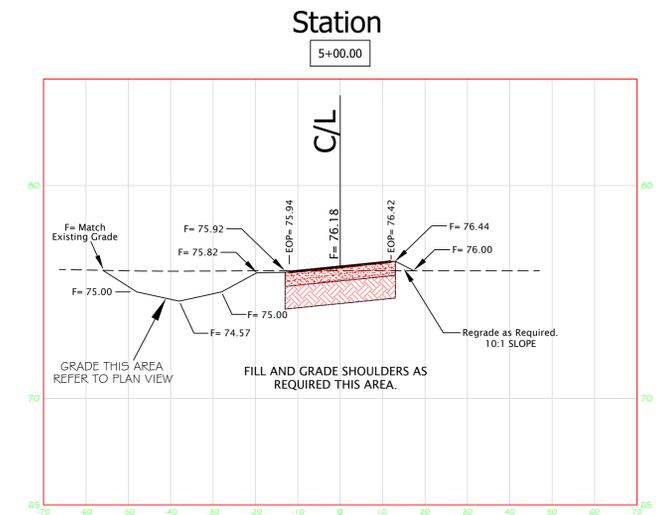
PROJECT NO.
 2011H-018-001

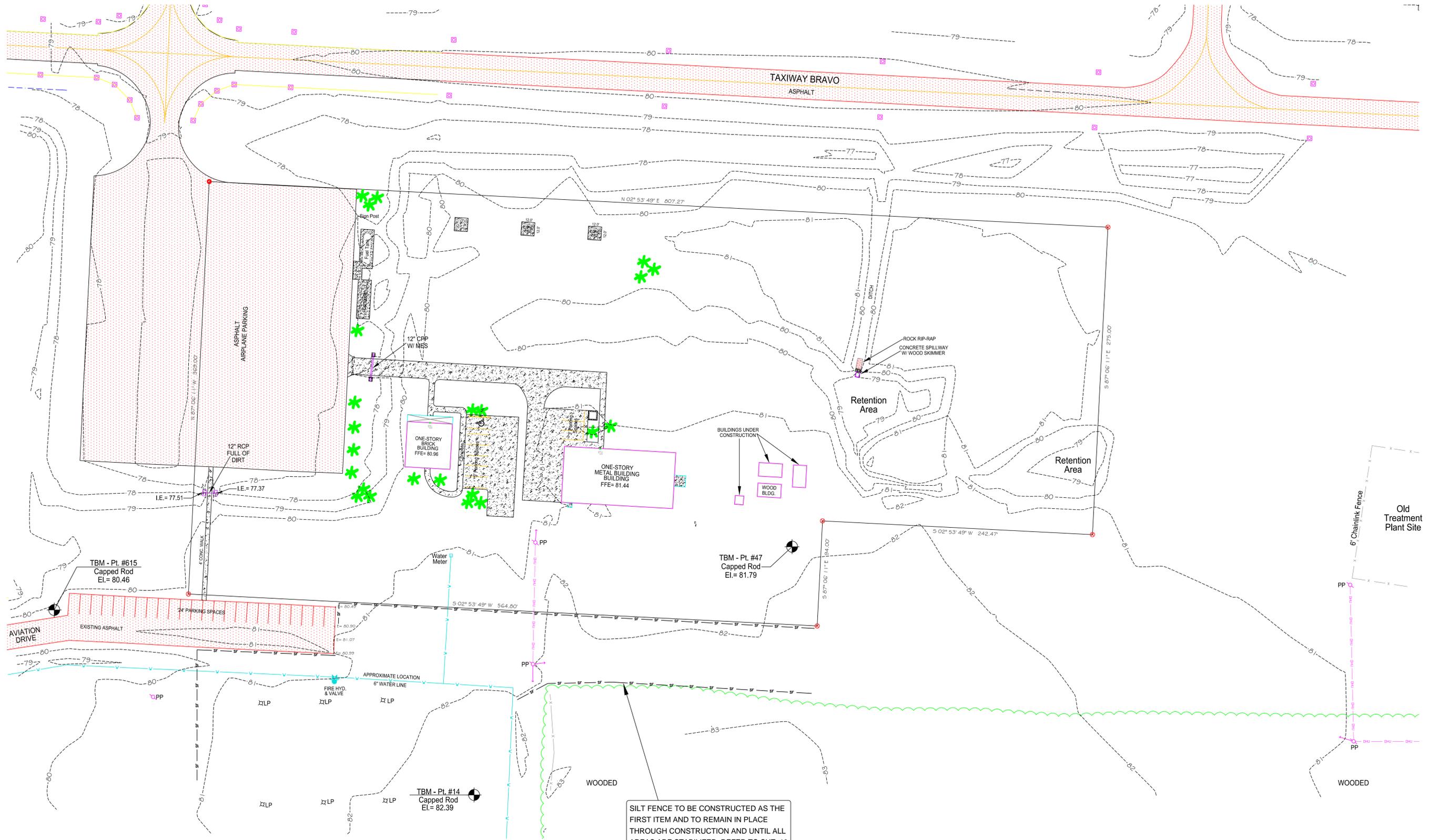
MARC BONIFAY, P.E.
 DATE:
 Registered Engineer
 Number 51304

SHEET
 4 OF 10



NOTE: PROPOSED SERVICE ROAD SHALL BE CANTED AT 2.00% MIN. SLOPE. REFER TO TYPICAL SERVICE ROAD CROSS-SECTION SH. 8



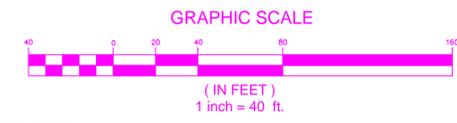


SILT FENCE TO BE CONSTRUCTED AS THE FIRST ITEM AND TO REMAIN IN PLACE THROUGH CONSTRUCTION AND UNTIL ALL AREAS ARE STABILIZED. REFER TO SHT. 10

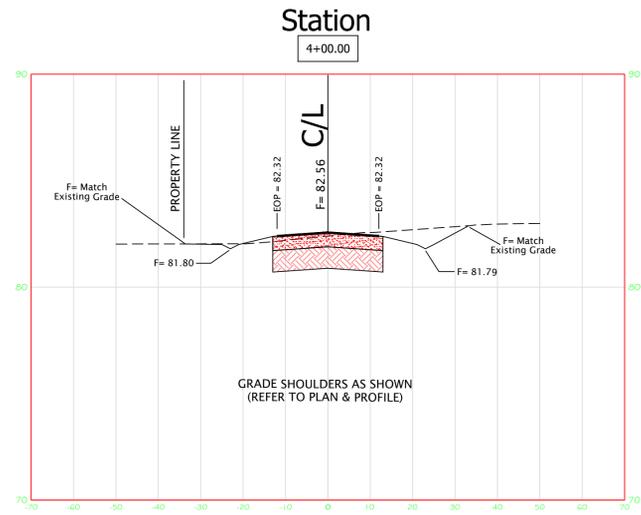
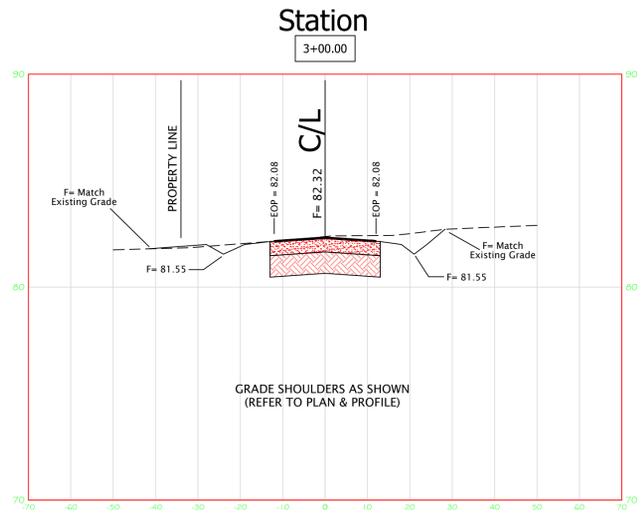
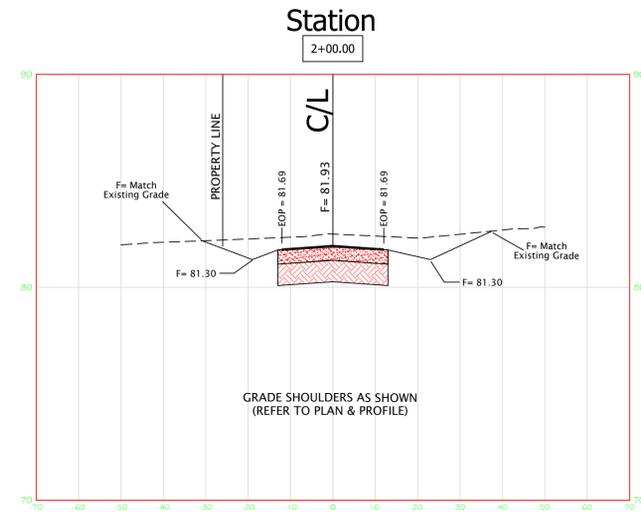
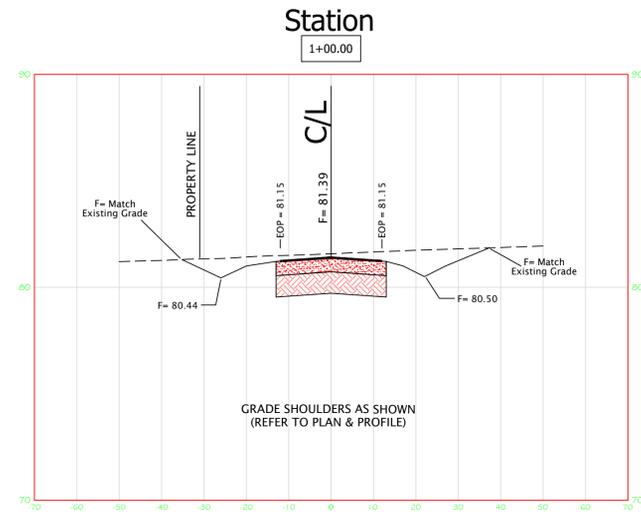
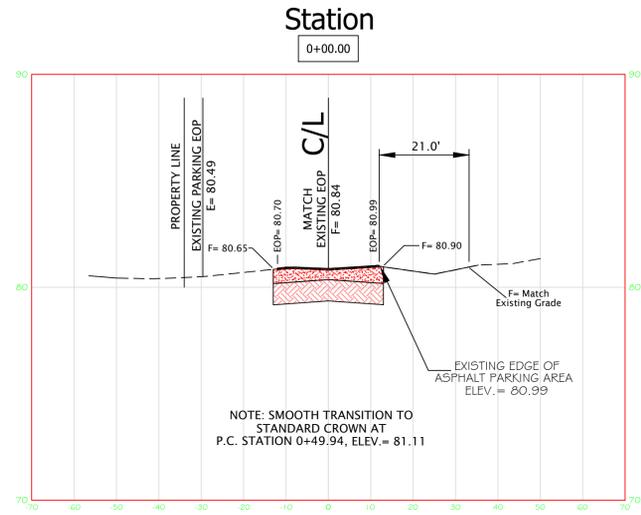
PETER PRINCE FIELD
 AVIATION ROAD EXTENSION
 EXISTING SITE CONDITIONS

SCALE:	AS SHOWN
REVISIONS:	N/A
	N/A
DRAWN BY:	D.C.G.
DATE DRAWN:	05-13-2016
FIELD DATE:	09-23-2014
FB 101 PGS. 71-77 FB 103 PGS. 4-8 AND PGS. 28-30	

PROJECT #	2011H-018-001
MARC BONIFAY, P.E.	
DATE:	
Registered Engineer Number 51304	
SHEET	5 OF 10



GENERAL NOTES:
 * THE ELEVATIONS SHOWN HEREON ARE BASED ON BENCHMARK P 165 1955, ELEVATION 75.33 FEET, NAVD88 DATUM.



NOTE: REFER TO TYPICAL AVIATION DRIVE EXTENSION CROSS-SECTION SHT. 8

SCALE:
HORZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 4'

REVISIONS:
N/A
N/A

DRAWN BY:
D.C.G.

DATE DRAWN:
05-13-2016

FIELD DATE:
12-15-2011

FB 101 PGS. 71-77
FB 103 PGS. 4-8
AND PGS. 28-30

PROJECT #
2011H-018-001

MARC BONIFAY, P.E.
DATE:
Registered Engineer
Number 51304

SHEET
7 OF 10

STORM WATER POLLUTION PREVENTION PLAN

1.0 BACKGROUND & REQUIREMENTS:

1.1 Introduction:

The referenced support documentation for this Storm Water Pollution Prevention Plan (SWPPP) is the United States Environmental Protection Agency's (EPA) Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices Summary Guidance (EPA 833-R-92-001) and Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices (EPA 832-R-92-005). This SWPPP is designed to protect onsite and adjacent natural resources, including but not limited to, wetlands, marshes, bayous and bays, while preserving wildlife and archeological resources.

This project requires an Environmental Resource Permit (ERP) issued by the Northwest Florida Water Management District.

1.2 Notice of Intent (NOI):

Rule 62-621.300(4), FAC requires the construction operator of a site that disturbs one or more acres to obtain coverage from the Generic Permit for Stormwater Discharge from Large and Small Construction Activities (CGP). The contractor is required to submit a Notice of Intent to Use Generic Permit for Stormwater Discharge from Large and Small Construction Activities (FDEP Form 62-621.300(4)(b) along with the appropriate application fee to the following address 48 hours prior to commencing construction:

NPDES Stormwater Notices Center, MS # 2510
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

This form can be obtained from FDEP's website (www.dep.state.fl.us) or by contacting FDEP. Please note that the current application fee is \$300.00

However, this fee is subject to change without notice. Always refer to the most current version of Rule 62-4.050(4)(d), FAC to confirm the amount before submitting payment. If construction activity exceeds five years, the contractor must re-apply for coverage.

A copy of the Notice of Intent is also to be sent to the Local Government Regulating Authority.

1.3 Stormwater Pollution Prevention Plan (SWPPP):

The contractor is required to certify this Stormwater Pollution Prevention Plan (SWPPP) below prior to submitting the NOI. This SWPPP is not required to be submitted with the NOI, but is required to be kept on site during all phases of construction. Because erosion and sediment controls and construction methods vary significantly from contractor to contractor, the contractor can propose alternative methods to this SWPPP that are equal or better at controlling erosion and sedimentation. At a minimum, the contractor must follow the erosion control plan specified in the construction plans and documents. Any modifications to this SWPPP must be documented and kept with the plan as part of the records keeping process to be in full compliance with the CGP.

1.4 Contractor's Certification:

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with construction activity from the construction site identified as part of this certification.

<u>Print & Sign Name</u>	<u>Company & Address</u>
_____	_____
<u>Name & Title (Print)</u>	_____
_____	_____
<u>Signature</u>	<u>Date</u>
_____	_____
Responsibilities (General Contractor, Site Contractor, Subcontractor, Other):	

1.5 Notice of Termination (NOT):

The contractor is required to submit a Notice of Termination of Generic Permit Coverage (FDEP Form 62-621.300(6)) upon construction completion to discontinue permit coverage. The NOT is to be submitted to the following address:

NPDES Stormwater Notices Center, MS # 2510
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

This form can be obtained from FDEP's website (www.dep.state.fl.us) or by contacting FDEP. The NOT can not be submitted until all disturbed soils at the construction site have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time. Final stabilization means that all soil disturbing activities at the site have been completed and that a uniform perennial vegetative cover with a density of 70 percent of the cover for unpaved areas and areas not covered by permanent structures has been established, or equivalent stabilization measures have been employed. If construction activity exceeds five years, the contractor must re-apply for coverage.

1.6 Application Information:

Project Address: PETER PRINCE AIRFIELD
5600 Airport Road
Milton, Florida 32583
Santa Rosa County

Latitude: 30° 38' 07" N
Longitude: 86° 59' 37" W

Water Management District: Northwest Florida (NWFWM)

ERP Permit No.: General Permit For Small Projects

MS4 Operator Name: Santa Rosa County

Receiving Water Name: A large Pit at Peter Prince Airport (Closed Basin)

2.0 SITE DESCRIPTION:

2.1 Nature of Construction Activities:

This project involves the construction of an 890 lineal foot service road and a 433 lineal foot extension of Aviation Drive on County owned property at PETER PRINCE AIRFIELD. The site is located on the northeast corner of the intersection of Highway 90 and Airport Road. Construction will include the two (2) roads, stormwater collection systems and two (2) stormwater retention areas. The total area to be disturbed is 3.15 acres.

2.2 Sequence of Major Soil Disturbing Activities:

The following sequence of major activities shall be followed unless the contractor can propose an alternative that is equal to or better at controlling erosion and sedimentation. The detailed sequence for the entire project can vary significantly from contractor to contractor. The contractor is responsible for documenting any changes.

1. **Install all perimeter erosion control measures.**
2. **Clear, grub and perform all demolition work.**
3. **Complete rough grading of the retention areas.**
4. **Construct the underground storm water systems.**
5. **Install hay bales around all entrances to the storm sewer system.**
6. **Complete rough grading of the roads.**
7. **Construct the roads (subgrade, base, and asphalt).**
8. **Stabilize all disturbed areas.**
9. **Clean out any siltation from the retention areas and seed & mulch.**
10. **Once vegetation is established and all disturbed areas are stabilized remove erosion control measures.**

2.3 Area Estimates:

Onsite Area: 3.35 acres
Offsite Area: 0.00 acres
Total Area: 3.35 acres
Area to be Disturbed: 3.35 acres

2.4 Runoff Data:

Runoff Coefficients (c):

Before: Total Composite c = 0.25
During: Varies between 0.25 and 0.95
After: Varies between 0.25 and 0.95
Total Composite c = 0.58 Service Road
Total Composite c = 0.65 Aviation Drive extension

Soils Data:

The soils located at the site consist of Lakeland Sand, 0-5% slopes and are classified as excessively drained with a permeability rate greater than 20 in/hr. The adjacent airport pit has a bottom elevation of 66.00 and is never wet therefore the groundwater table must be below this elevation.

Drainage Areas for Each Outfall:

<u>Outfall Location</u>	<u>Total Area flowing to Retention Area</u>	<u>'c' coefficient</u>
Service Road (retention area):	2.15 acres	0.58
Aviation Drive (retention area):	1.20 acres	0.65

2.5 Site Map:

The construction plans are to be used as the site maps. The location of the required information is described below. The sheet numbers for all the items discussed below are identified on the Key Sheet of the construction plans.

- **Drainage Patterns:** All drainage patterns are shown on the Existing Conditions (Sheets 2 and 5), and the Plan & Profile Sheets (Sheets 3 and 6).
- **Approximate Slopes:** Approximate slopes are shown on the Existing Conditions, (Sheets 2 and 5).
- **Areas of Soil Disturbance:** All proposed construction is shown on the Plan & Profile Sheets (Sheets 3 and 6).

- **Areas not to be Disturbed:** Any areas not showing permanent features are assumed not to be disturbed. It will be the contractor's responsibility to indicate on the plans any of these areas that do get disturbed as well as any areas used for staging and materials storage.

- **Locations of Controls:** All proposed temporary controls and existing permanent controls are shown on the Existing Conditions (Sheets 2 and 5). All proposed permanent controls are shown the Plan & Profile Sheets (Sheets 3 and 6). It will be the contractor's responsibility to indicate the location of any other controls on the plans that are used during construction.

- **Areas to be Stabilized:** Permanent stabilization is shown on the plans. It will be the contractor's responsibility to indicate the location on the plans of all temporary stabilization practices used during construction.

- **Surface Waters:** No Discharge (Closed Basin).

- **Discharge Points:** All proposed stormwater discharge points are shown on the plans.

2.6 Receiving Waters:

A large pit at Peter Prince Airport (Closed Basin).

3.0 CONTROLS:

3.1 Erosion and Sediment Controls:

All erosion and sediment controls specified on the Overall Existing Conditions, Erosion Control and Drainage Plan, Sheet3 shall be installed prior to any construction. Silt fencing and staked hay bales shall be installed along down-gradient limits to protect environmentally sensitive areas, wetlands and adjacent surface waters.

Temporary seeding and mulching shall be applied after 14-day intervals of ceased disturbance activities that will exceed 20-day periods. Graded areas shall be stabilized with permanent seeding, mulching, and fertilizing, or sodding within five days of final grading. All grassing shall be accomplished between April 1st and August 1st. Landscaping, including sodding, shall be installed by an experienced Landscape Contractor. Proposed disturbed areas will not exceed 10 acres in any drainage area.

3.2 Stormwater Management:

Proposed stormwater management facilities for this site includes two (2) retention areas. The proposed stormwater management facility meets all stormwater treatment requirements of the Northwest Florida Water Management District ERP Permit.

The proposed stormwater management facility meets all rate control requirements by the local governmental authority, the Northwest Florida Water Management District and if discharging to a Florida Department of Transportation (FDOT) system, all FDOT requirements. Velocity dissipation devices are shown on the plans at all stormwater discharge points both on and off site.

3.3 Other Controls:

Waste Disposal: The contractor is responsible for all waste disposal from the site. The contractor shall employ waste disposal practices that meet all local, state, and federal guidelines and prevent discharge of solid materials to waters of the United States. The Contractor is responsible for documenting this portion of the SWPPP.

Offsite Vehicle Tracking: If off site tracking of sediments by construction vehicles occurs, the contractor is required to install a Soil Tracking Prevention Device (STPD) as per FDOT Standard Index 106 at all exits to the site where sediment tracking is occurring. The Contractor is also responsible for documenting this portion of the SWPPP.

4.0 MAINTENANCE:

Controls shall be kept in full operating condition throughout all phases of construction until all disturbed areas are completely stabilized. Maintenance, repair records and repair requests shall be documented. Repairs and deficiencies shall be completed as soon as possible and within seven days after inspection. Any required changes that are not covered in the SWPPP shall also be made as soon as possible within seven days and documented.

5.0 INSPECTIONS:

Qualified personnel shall inspect the following items, but not limited to, at least once every seven calendar days and within 24 hours of the end of a storm that is 0.50 inches or greater. Where sites have been finally stabilized, inspections shall be conducted at least once every month.

- Points of discharge to waters of the United States.
- Points of discharge to municipal separate storm sewer systems.
- Disturbed areas of the site that have not been finally stabilized.
- Areas used for storage of materials that are exposed to precipitation.
- Structural controls.
- Stormwater management systems.
- Locations where vehicles enter or exit the site.

6.0 NON-STORMWATER DISCHARGES:

The Contractor shall be responsible for reporting any hazardous substance spills that may equal or exceed a Reportable Quantity (RQ). Refer to EPA's List of Hazardous Substances and Reportable Quantities (EPA 40 CFR 302.4 & 117). This list can be obtained from EPA's website (www.epa.gov) or by contacting EPA. If an RQ release does occur the Contractor shall perform the following procedures:

- Notify the National Response Center immediately at 800-424-8802.
- Provide written description of the release within 14 days providing dates, cause and prevention methods to the regional EPA office.
- Modify the SWPPP as necessary to address added prevention methods.

7.0 IMPLEMENTATION CHECKLIST:

7.1 Records:

The Contractor shall maintain records of construction activities including, but not limited to:

- Dates when major grading activities occur.
- Dates when construction activities temporarily cease on a portion of the site.
- Dates when construction activities permanently cease on a portion of the site.
- Dates when stabilization measures are initiated on the site.

7.2 Inspection Reports:

The Contractor shall prepare inspection reports summarizing the following, but not limited to:

- Name of inspector.
- Qualifications of inspector.
- Measures/areas inspected.
- Observed conditions.
- Changes necessary to the SWPPP.

7.3 Releases of Reportable Quantities of Oil or Hazardous Materials:

The Contractor shall report any releases of reportable quantities of oil or hazardous materials if they occur as per the measures outlined in Section 6.0 of the SWPPP.

7.4 SWPPP Modification:

The Contractor shall modify the SWPPP as necessary to:

- Comply with minimum permit requirements when notified by FDEP that the plan does not comply.
- Address any changes in design, construction operations or maintenance, which has an effect on the potential for discharge of pollutants.
- Prevent reoccurrence of reportable quantity releases of hazardous material or oil.

8.0 TERMINATION CHECKLIST:

The following items shall be complete before submitting the NOT:

- All soil disturbing activities are complete.
- Temporary erosion and sediment control measures have been removed or will be removed at an appropriate time.
- All areas of the construction site not otherwise covered by permanent pavement or structure have been stabilized with uniform perennial vegetative cover with a density of 70% or equivalent measures have been employed.



SCALE:
Not to Scale

REVISIONS:

N/A
N/A

DRAWN BY:
AutoCad

DATE DRAWN:
05-13-2016

FIELD DATE:
N/A

F.B. N/A
PAGE N/A

PROJECT NO.
2011H-018-001

MARC BONIFAY, P.E.
DATE: _____
Registered Engineer
Number 51304

SHEET
9 OF 10

STORMWATER POLLUTION PREVENTION PLAN GENERAL NOTES & DETAILS FOR SOIL EROSION AND SEDIMENT CONTROL.

1. ALL EROSION AND SEDIMENT CONTROL PRACTICES TO BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
 2. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN 20 DAYS, AND NOT SUBJECT TO CONSTRUCTION TRAFFIC, WILL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF A TEMPORARY COVER, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW, OR EQUIVALENT MATERIAL, AT A RATE OF TWO (2) TONS PER ACRE, ACCORDING TO STATE STANDARDS.
 3. PERMANENT VEGETATION TO BE SEED OR SODDED ON ALL EXPOSED AREAS WITHIN TEN (10) DAYS AFTER GRADING. MULCH TO BE USED AS NECESSARY FOR PROTECTION UNTIL SEEDING IS ESTABLISHED.
 4. ALL WORK AND MATERIALS TO BE IN ACCORDANCE WITH THE FDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", LATEST EDITION, SECTIONS 104, 570, 575 AND 980 TO 986.
 5. A BITUMINOUS CONCRETE BASE COURSE WILL BE APPLIED IMMEDIATELY FOLLOWING ROUGH GRADING AND INSTALLATION OF IMPROVEMENTS IN ORDER TO STABILIZE STREETS, ROADS, DRIVEWAYS AND PARKING AREAS. IN AREAS WHERE NO UTILITIES ARE PRESENT, THE BITUMINOUS CONCRETE BASE SHALL BE INSTALLED WITHIN 15 DAYS OF THE PRELIMINARY GRADING.
 6. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION (I.E. STEEP SLOPES AND ROADWAY EMBANKMENTS) WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AT A THICKNESS OF TWO (2) TO FOUR (4) INCHES MIXED WITH THE TOP TWO (2) INCHES OF SOIL, ACCORDING TO STATE STANDARDS.
 7. ANY STEEP SLOPES RECEIVING PIPELINE INSTALLATION WILL BE BACKFILLED AND STABILIZED DAILY, AS THE INSTALLATION PROCEEDS (I.E. SLOPES GREATER THAN 3:1).
 8. A CRUSHED LIMEROCK, VEHICLE WHEEL-CLEANING BLANKET SHALL BE INSTALLED AT THE CONTRACTOR'S STAGING YARD AND/OR STOCKPILE AREAS TO PREVENT OFF-SITE TRACKING OF SEDIMENT BY CONSTRUCTION VEHICLES ONTO PUBLIC ROADS. BLANKET SHALL BE 15FT. X 50FT. X 6IN. (MINIMUM), CRUSHED LIMEROCK 2 1/2 INCHES IN DIAMETER. SAID BLANKET SHALL BE UNDERLAIN WITH A FDOT CLASS 3 SYNTHETIC FILTER FABRIC AND MAINTAINED IN GOOD ORDER.
 9. AT THE TIME WHEN THE SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS GOING TO BE ACCOMPLISHED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER, SHALL BE REMOVED OR TREATED IN SUCH A WAY THAT WILL PERMANENTLY ADJUST THE SOIL CONDITIONS AND RENDER IT SUITABLE FOR VEGETATIVE GROUND COVER. IF THE REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, NON-VEGETATIVE MEANS OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE EMPLOYED.
 10. CONDUIT OUTLET PROTECTION MUST BE INSTALLED AT ALL REQUIRED OUTFALLS PRIOR TO THE DRAINAGE SYSTEM BECOMING OPERATIONAL.
 11. UNFILTERED DEWATERING IS NOT PERMITTED. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS DURING ALL DEWATERING OPERATIONS TO MINIMIZE SEDIMENT TRANSFER.
 12. SHOULD THE CONTROL OF DUST AT THE SITE BE NECESSARY, THE SITE WILL BE SPRINKLED UNTIL THE SURFACE IS WET. TEMPORARY VEGETATION COVER SHALL BE ESTABLISHED OR MULCH SHALL BE APPLIED IN ACCORDANCE WITH STATE STANDARDS FOR EROSION CONTROL.
 13. ALL SOIL WASHED, DROPPED, SPILLED OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC RIGHTS-OF-WAY WILL BE REMOVED IMMEDIATELY.
 14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORMWATER OUTFALLS OR OFFSITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.
 15. ALL SOIL STOCKPILES ARE TO BE TEMPORARILY STABILIZED IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL NOTE NUMBER 2 (ABOVE).
 16. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SUCH THAT ALL STORM WATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
 17. ALL SEDIMENTATION STRUCTURES SHALL BE INSPECTED AND MAINTAINED REGULARLY.
 18. ALL CATCH BASIN INLETS SHALL BE PROTECTED WITH HAY BALES AS SHOWN ON DETAIL.
 19. THE CONTRACTOR SHALL PREPARE A PLAN FOR THE PROPER DEWATERING AND DOWNSTREAM SILTATION PROTECTION.
 20. ANY AREAS USED FOR THE CONTRACTOR'S STAGING, INCLUDING BUT NOT LIMITED TO, TEMPORARY STORAGE OF STOCKPILED MATERIALS (E.G. CRUSHED STONE, QUARRY PROCESS STONE, SELECT FILL, EXCAVATED MATERIALS, ETC.), SHALL BE ENTIRELY PROTECTED BY A SILT FENCE ALONG THE LOW ELEVATION SIDE TO CONTROL SEDIMENT RUNOFF.
 21. THE CONTRACTOR'S MEANS AND METHODS OF GROUNDWATER DEWATERING SHALL COMPLY WITH ALL REGULATORY REQUIREMENTS FOR THE TEMPORARY DIVERSION OF GROUNDWATER AND ITS DISCHARGE, INCLUDING FDOT CHAPTER 62-621 "GENERAL PERMIT FOR THE DISCHARGE OF PRODUCED GROUNDWATER FROM ANY NON-CONTAMINATED SITE ACTIVITY".
- * WHERE APPLICABLE

TEMPORARY SEEDING DETAILS

SEED BED PREPARATION
SOIL TO BE THOROUGHLY PULVERIZED BY DISK-HARROWING AND BE LOOSE AND REASONABLY SMOOTH. APPLY FERTILIZER AT A RATE OF 260 LBS/ACRE OF 16-16-16 OR EQUIVALENT, APPLY DOLOMITIC LIMESTONE AT A RATE OF 800 TO 1000 LBS/ACRE TO PROVIDE A SOIL pH OF 5.5 TO 6.5. LIME & FERTILIZER TO BE WORKED INTO THE TOPSOIL TO A DEPTH OF 4". ADD SANDY LOAM TOPSOIL TO A MINIMUM OF TWO (2) INCHES WHERE REQUIRED.

SEED MIXTURE
CONSISTING OF ANNUAL RYE (LOUIM MULTIFLORUM) AT A RATE OF 174 LBS/ACRE.

PERMANENT SEEDING DETAILS

SEED BED PREPARATION
SOIL TO BE THOROUGHLY PULVERIZED BY DISK-HARROWING AND BE LOOSE AND REASONABLY SMOOTH. APPLY FERTILIZER AT A RATE OF 260 LBS/ACRE OF 16-16-16 OR EQUIVALENT, APPLY DOLOMITIC LIMESTONE AT A RATE OF 800 TO 1000 LBS/ACRE TO PROVIDE A SOIL pH OF 5.5 TO 6.5. LIME & FERTILIZER TO BE WORKED INTO THE TOPSOIL TO A DEPTH OF 4". ADD SANDY LOAM TOPSOIL TO A MINIMUM OF TWO (2) INCHES WHERE REQUIRED.

SEED MIXTURE CONSISTING OF	RATE	PURITY	GERMINATION
ARGENTINE BAHIA	260 LBS/AC.	95%	80% 40%/MIN.-80
PENSACOLA BAHIA	260 LBS/AC.	95%	% (TOTAL)

SODDING
SOD SHALL BE WELL ROOT MATTED CENTIFERE OR BAHIA GRASS COMMERCIALY CUT TO A MINIMUM DIMENSION OF 12" x 24" A MAXIMUM OF 72 HOURS PRIOR TO PLACEMENT. SOD SHALL BE LIVE, FRESH AND UNINJURED, REASONABLY FREE OF WEEDS AND OTHER GRASSES, WITH A HEAVY SOIL MAT ADHERING TO THE ROOT SYSTEM. SOD SHALL BE GROWN, CUT, AND SUPPLIED BY A STATE CERTIFIED GROWER.

TRAFFIC CONTROL STANDARDS

1. CONSTRUCTION TRAFFIC SHALL BE RESTRICTED TO ONSITE ACCESS BY MEANS SO DESIGNATED BY THE ENGINEER, POLICE/SHERIFF DEPARTMENT, ESCAMBA COUNTY HIGHWAY DEPARTMENT, AND/OR THE FLORIDA DEPARTMENT OF TRANSPORTATION.
2. TRAFFIC DURING WET WEATHER SHALL BE MINIMIZED AND APPROPRIATE ROADWAY AND SITE CLEAN-UP SHALL BE PROVIDED BY THE CONTRACTOR AS SOON AS WEATHER CONDITIONS PERMIT.

TREE PROTECTION

1. DAMAGED TRUNKS OR EXPOSED ROOTS WILL BE PAINTED IMMEDIATELY WITH A QUALITY GRADE OF "TREE PAINT".
2. TREE LIMB REMOVAL, WHERE NECESSARY, WILL BE DONE FLUSH TO TRUNK OR MAIN BRANCH AND THAT AREA PAINTED IMMEDIATELY WITH A QUALITY GRADE OF TREE PAINT.

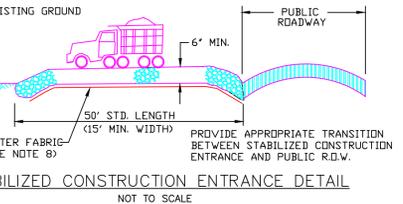
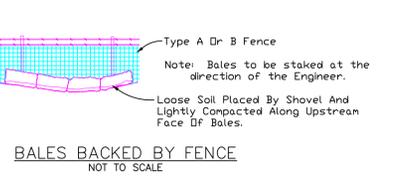
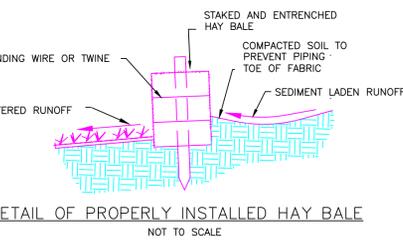
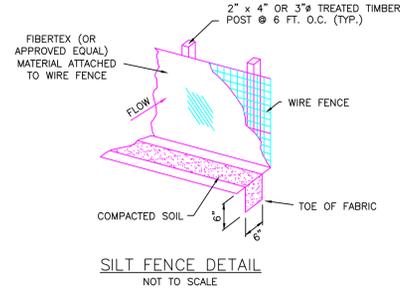
DUST CONTROL

1. ALL AREAS OF CLEARING AND EMBANKMENT AS WELL AS CONSTRUCTION HAUL ROADS SHALL BE TREATED AND MAINTAINED IN SUCH A MANNER AS TO MINIMIZE DUST GENERATION.
2. DISTURBED AREAS SHALL BE MAINTAINED IN A ROUGH GRADED CONDITION AND TEMPORARILY SEEDED AND/OR MULCHED UNTIL PROPER WEATHER CONDITIONS EXIST FOR THE ESTABLISHMENT OF PERMANENT VEGETATION COVER.
3. IN EVENT OF EMERGENCY CONDITIONS, TILLAGE WILL BE SATISFACTORY FREE BEFORE SOIL BLOWING STARTS.
4. CALCIUM CHLORIDE MAY BE APPLIED TO UNPAVED ROADWAY AREAS, ONLY, SUBJECT TO THE ENGINEER'S APPROVAL AND CONFORMANCE WITH FDOT STANDARD SPECIFICATIONS, SECTION 102-5, LATEST EDITION.

PROPOSED SEQUENCE OF CONSTRUCTION

THE CONSTRUCTION SHOULD PROCEED IN THE FOLLOWING MANNER:

1. INSTALLATION OF ALL SEDIMENT AND EROSION CONTROL DEVICES THAT CAN BE PLACED PRIOR TO ANY MAJOR SOIL DISTURBANCES.
2. CLEAR AND REMOVE ALL EXISTING VEGETATION IN THOSE AREAS WHERE NECESSARY. ALL REMAINING VEGETATION TO BE PROPERLY PROTECTED AND TO REMAIN IN ITS NATURAL STATE. TOPSOIL IN AREAS TO BE DISTURBED TO BE STRIPPED TO A MINIMUM DEPTH OF SIX (6) INCHES AND STOCKPILED SEPARATELY FROM OTHER EXCAVATED SOIL(S).
3. IMMEDIATE INSTALLATION OF ALL REMAINING SEDIMENT AND EROSION CONTROL DEVICES.
4. INITIATE CONSTRUCTION.
5. UPON COMPLETION OF CONSTRUCTION ACTIVITIES, PROVIDE RESTORATION, FINE GRADE REMAINDER OF SITE, RESPREAD STOCKPILED TOPSOIL AND STABILIZE WITH PERMANENT VEGETATIVE COVER AND LANDSCAPING.
6. REMOVAL OF APPROPRIATE TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES.



NOTE:
ALL SPECIMEN TREES AS SHOWN ON THE PLANS TO REMAIN ARE TO BE PROTECTED DURING CONSTRUCTION. THE CONTRACTOR SHALL INSTALL SNOW OR SILT FENCING AT THE DRIP LINE OF EACH SPECIMEN TREE BEFORE WORKING IN THE VICINITY OF THE TREE, AS DIRECTED BY THE ENGINEER.

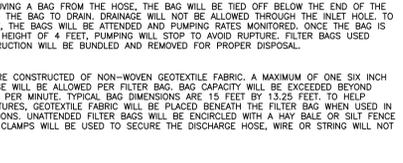
CORRECT FENCING FOR SPECIMEN TREE PROTECTION
NOT TO SCALE

DESCRIPTION:
FILTER BAGS WILL BE USED AS AN EFFECTIVE FILTER MEDIUM TO CONTAIN SAND, SILT AND FINES WHEN TRENCH DEWATERING. THE WETLAND FILTER BAG CONTAINS THESE MATERIALS WHILE ALLOWING THE WATER TO FLOW THROUGH THE FABRIC.

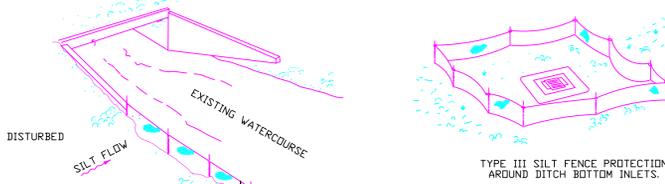
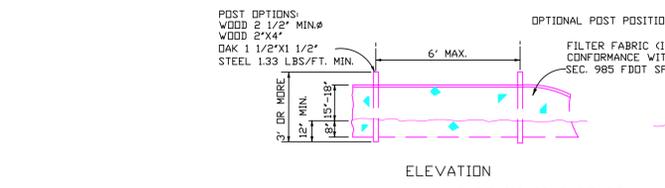
INSTALLATION:
WETLAND FILTER BAGS MAY REPLACE HAY BALE CORRALS DURING TRENCH DEWATERING, AT THE DISCRETION OF THE ENGINEER. INSPECTOR TO INSURE PROPER INSTALLATION. FILTER BAGS WILL BE PLACED ON RELATIVELY FLAT TERRAIN FREE OF BRUSH AND STUMPS TO AVOID RUPTURES AND PUNCTURES. PROPER INSTALLATION REQUIRES CUTTING A SMALL HOLE IN THE CORNER OF THE BAG, INSERTING THE PUMP DISCHARGE HOSE, AND THEN SECURING THE DISCHARGE HOSE TO THE BAG WITH A HOSE CLAMP. FILTER BAGS WILL BE PLACED AS FAR AWAY FROM FLOWING STREAMS AND WETLANDS AS POSSIBLE.

MAINTENANCE:
PRIOR TO REMOVING A BAG FROM THE HOSE, THE BAG WILL BE TIED OFF BELOW THE END OF THE HOSE ALLOWING THE BAG TO DRAIN. DRAINAGE WILL NOT BE ALLOWED THROUGH THE INLET HOLE TO AVOID RUPTURE. THE BAGS WILL BE ATTENDED AND PUMPING RATES MONITORED. ONCE THE BAG IS INFLATED TO A HEIGHT OF 4 FEET, PUMPING WILL STOP TO AVOID RUPTURE. FILTER BAGS USED DURING CONSTRUCTION WILL BE BUNDLED AND REMOVED FOR PROPER DISPOSAL.

SPECIFICATION:
FILTER BAGS ARE CONSTRUCTED OF NON-WOVEN GEOTEXTILE FABRIC. A MAXIMUM OF ONE SIX INCH DISCHARGE HOSE WILL BE ALLOWED PER FILTER BAG. BAG CAPACITY WILL BE EXCEEDED BEYOND 2,000 GALLONS PER MINUTE. TYPICAL BAG DIMENSIONS ARE 15 FEET BY 13.25 FEET. TO HELP PREVENT PUNCTURES, GEOTEXTILE FABRIC WILL BE PLACED BENEATH THE FILTER BAG WHEN USED IN WOODED LOCATIONS. UNATTENDED FILTER BAGS WILL BE ENGIRLED WITH A HAY BALE OR SILT FENCE CORRAL. HOSE CLAMPS WILL BE USED TO SECURE THE DISCHARGE HOSE. WIRE OR STRING WILL NOT BE USED.



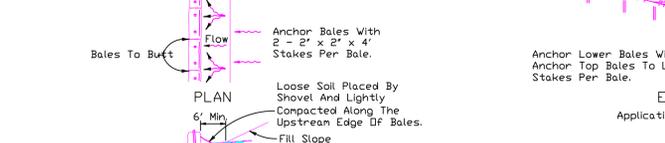
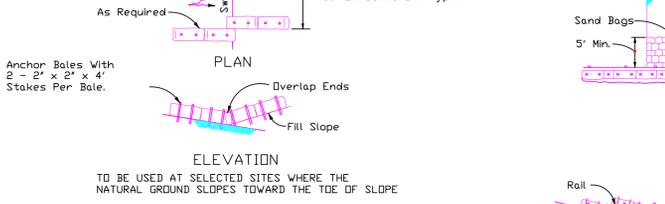
FILTER BAG DETAIL FOR TRENCH DEWATERING OPERATIONS
NOT TO SCALE



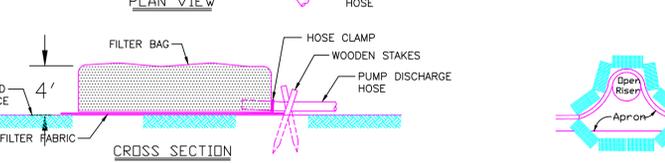
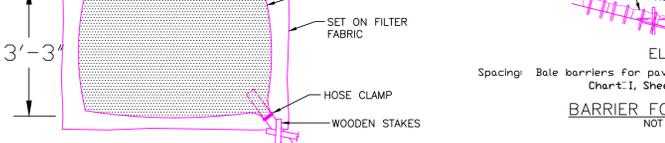
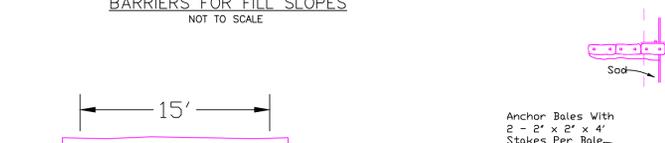
NOTES FOR SILT FENCES

1. Type III Silt Fence shall be used where used in ditches, the spacing for Type III Silt Fence shall be in accordance with Chart 1, Sheet 1, FDOT Design Standards Index No. 102, Latest Edition.
2. Do not construct silt fences across permanent flowing watercourses.
3. Where used as slope protection, Silt Fence is to be constructed on 0% longitudinal grade to avoid channelizing runoff along the length of the fence.
4. Silt Fence to be paid for under the contract unit price for Staked Silt Fence, (LF).

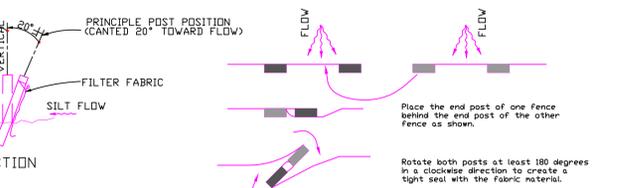
TYPE III SILT FENCE APPLICATIONS
NOT TO SCALE



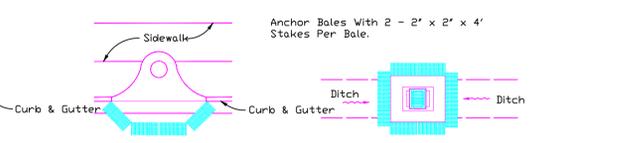
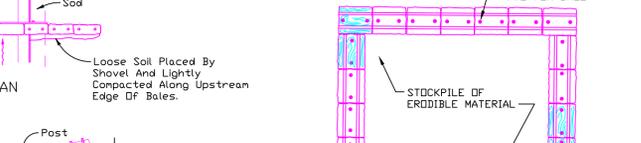
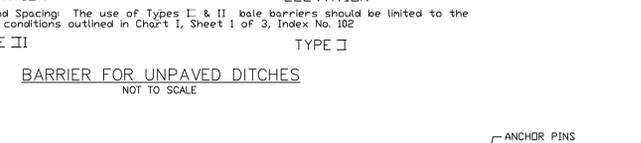
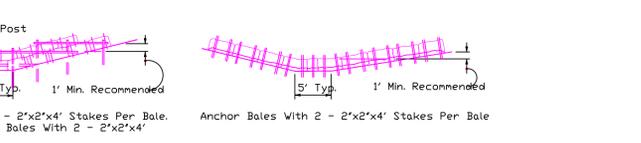
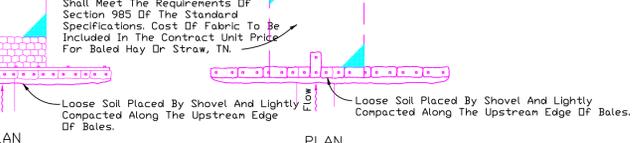
BARRIER FOR UNPAVED DITCHES
NOT TO SCALE



BARRIER FOR PAVED DITCH
NOT TO SCALE



PLAN VIEW JOINING TWO SILT FENCES
NOT TO SCALE



TYPE III SILT FENCE
NOT TO SCALE