

# CITY OF NAPLES, FLORIDA

## AGREEMENT (PROFESSIONAL SERVICES)

**Bid/Proposal No. 006-10**

**Contract No.** \_\_\_\_\_

**Project Name Basin V Drainage Improvements**

THIS AGREEMENT (the "Agreement") is made and entered into this 16 day of December, 2009, by and between the City of Naples, a Florida municipal corporation, (the "CITY") and **Mitchell & Stark Construction Co., Inc.**, a Indiana corporation, **6001 Shirley Street, Naples, FL 34109**, (the "CONTRACTOR").

### WITNES S:

WHEREAS, the CITY desires to obtain the services of the CONTRACTOR concerning **certain services specified in this Agreement** (referred to as the "Project"); and

WHEREAS, the CONTRACTOR has submitted a proposal for provision of those services; and

WHEREAS, the CONTRACTOR represents that it has expertise in the type of professional services that will be required for the Project.

NOW, THEREFORE, in consideration of the mutual covenants and provisions contained herein, the parties hereto agree as follows:

### ARTICLE ONE CONTRACTOR'S RESPONSIBILITY

1.1. The Services to be performed by CONTRACTOR are generally described as Basin V drainage improvement area 1 & 3, and may be more fully described in the Scope of Services, attached as Exhibit A and made a part of this Agreement.

1.2. The CONTRACTOR agrees to obtain and maintain throughout the period of this Agreement all such licenses as are required to do business in the State of Florida, the City of Naples, and in Collier County, Florida, including, but not limited to, all licenses required by the respective state boards and other governmental agencies responsible for regulating and licensing the professional services to be provided and performed by the CONTRACTOR pursuant to this Agreement.

1.3. The CONTRACTOR agrees that, when the services to be provided hereunder relate to a professional service which, under Florida Statutes, requires a license, certificate of authorization or other form of legal entitlement to practice such services, it shall employ or retain only qualified personnel to provide such services.

1.4. CONTRACTOR agrees to employ and designate, in writing, within 5 calendar days after receiving its Notice to Proceed, or other directive from the CITY, a qualified licensed professional to serve as the CONTRACTOR's project manager (the "Project Manager"). The Project Manager shall be authorized and responsible to act on behalf of the CONTRACTOR with respect to directing, coordinating and administering all aspects of the services to be provided and performed under this Agreement.

1.5. The CONTRACTOR has represented to the CITY that it has expertise in the type of professional services that will be required for the Project. The CONTRACTOR agrees that all services to be provided by CONTRACTOR pursuant to this Agreement shall be subject to the CITY's review and approval and shall be in accordance with the generally accepted standards of professional practice in the State of Florida, **as may be applied to the type of services to be rendered**, as well as in accordance with all published laws, statutes, ordinances, codes, rules, regulations and requirements of any governmental agencies which regulate or have jurisdiction over the Project or the services to be provided and performed by CONTRACTOR. In the event of any conflicts in these requirements, the CONTRACTOR shall notify the CITY of such conflict and utilize its best professional judgment to advise CITY regarding resolution of the conflict.

1.6. The CONTRACTOR agrees not to divulge, furnish or make available to any third person, firm or organization, without CITY's prior written consent, or unless incident to the proper performance of the CONTRACTOR's obligations hereunder, or in the course of judicial or legislative proceedings where such information has been properly subpoenaed, any non-public information concerning the services to be rendered by CONTRACTOR hereunder, and CONTRACTOR shall require all of its employees, agents, subconsultants and subcontractors to comply with the provisions of this paragraph. **However, the CONTRACTOR shall comply with the Florida Public Records laws.**

1.7. The CONTRACTOR agrees not to employ or offer to employ any Elected Officer or City Managerial Employee of the CITY who in any way deals with, coordinates on, or assists with, the professional services provided in this Agreement, for a period of 2 years after termination of all provisions of this Agreement. For purposes of this paragraph, the term "Elected Officer" shall mean any member of the City Council. For purposes of this paragraph, the term "City Managerial Employee" shall mean the City Manager, the Assistant City Manager, the City Clerk, and any City department head or director. If the CONTRACTOR violates the provisions of this paragraph, the CONTRACTOR shall be required to pay damages to the CITY in an amount equal to any and all compensation which is received by the former Elected Officer or City Managerial Employee of the CITY from or on behalf of the contracting person or entity, or an amount equal to the former Elected Officer's or City Managerial Employee's last 2 years of gross compensation from the CITY, whichever is greater.

1.8. The CONTRACTOR agrees not to provide services for compensation to any other party other than the CITY on the same subject matter, same project, or scope of services as set forth in this Agreement without approval from the City Council of the CITY.

1.9. Except as otherwise provided in this Agreement, the CONTRACTOR agrees not to disclose or use any information not available to members of the general public and gained by reason of the CONTRACTOR's contractual relationship with the CITY for the special gain or benefit of the CONTRACTOR or for the special gain or benefit of any other person or entity.

## **ARTICLE TWO CITY'S RESPONSIBILITIES**

2.1. The CITY shall designate in writing a project coordinator to act as the CITY's representative with respect to the services to be rendered under this Agreement (the "Project Coordinator"). The Project Coordinator shall have authority to transmit instructions, receive information, interpret and define the CITY's policies and decisions with respect to the CONTRACTOR's services for the Project. However, the Project Coordinator is not authorized to issue any verbal or written orders or instructions to the CONTRACTOR that would have the effect, or be interpreted to have the effect, of modifying or changing in any way whatever:

- (a) The scope of services to be provided and performed by the CONTRACTOR;
- (b) The time the CONTRACTOR is obligated to commence and complete all such services; or
- (c) The amount of compensation the CITY is obligated or committed to pay the CONTRACTOR.

**Any such modifications or changes ((a) (b) or (c)) shall only be made by or upon the authorization of the CITY's city manager as authorized by city council in the enabling legislation or in the CITY's procurement policies.**

2.2. The Project Coordinator shall:

(a) Review and make appropriate recommendations on all requests submitted by the CONTRACTOR for payment for services and work provided and performed in accordance with this Agreement;

(b) Arrange for access to and make all provisions for the CONTRACTOR to enter the Project site to perform the services to be provided by the CONTRACTOR under this Agreement; and

(c) Provide notice to the CONTRACTOR of any deficiencies or defects discovered by the CITY with respect to the services to be rendered by the CONTRACTOR hereunder.

2.3. The CONTRACTOR acknowledges that access to the Project Site, to be arranged by the CITY for the CONTRACTOR, may be provided during times that are not the normal business hours of the CONTRACTOR.

### **ARTICLE THREE TIME**

3.1. Services to be rendered by the CONTRACTOR shall be commenced subsequent to the execution of this Agreement upon written Notice to Proceed from the CITY for all or any designated portion of the Project and shall be performed and completed by **December 31, 2010**. Time is of the essence with respect to the performance of this Agreement.

3.2. Should the CONTRACTOR be obstructed or delayed in the prosecution or completion of its services as a result of unforeseeable causes beyond the control of the CONTRACTOR, and not due to its own fault or neglect, including but not restricted to acts of God or of public enemy, acts of government or of the CITY, fires, floods, epidemics, quarantine regulations, strikes or lock-outs, then the CONTRACTOR shall notify the CITY in writing within 5 working days after commencement of such delay, stating the cause or causes thereof, or be deemed to have waived any right which the CONTRACTOR may have had to request a time extension.

3.3. No interruption, interference, inefficiency, suspension or delay in the commencement or progress of the CONTRACTOR's services from any cause whatsoever, including those for which the CITY may be responsible in whole or in part, shall relieve the CONTRACTOR of its duty to perform or give rise to any right to damages or additional compensation from the CITY. The CONTRACTOR's sole remedy against the CITY will be the right to seek an extension of time to its schedule. This paragraph shall expressly apply to claims for early completion, as well as claims based on late completion.

3.4. Should the CONTRACTOR fail to commence, provide, perform or complete any of the services to be provided hereunder in a timely and reasonable manner, in addition to any other rights or remedies available to the CITY hereunder, the CITY at its sole discretion and option may withhold any and all payments due and owing to the CONTRACTOR until such time as the CONTRACTOR resumes performance of its obligations hereunder in such a manner so as to reasonably establish to the CITY's satisfaction that the CONTRACTOR's performance is or will shortly be back on schedule.

### **ARTICLE FOUR COMPENSATION**

4.1. The total compensation to be paid the CONTRACTOR by the CITY for all Services shall not exceed

**\$635,570.55** and shall be paid in the manner set forth in the "Basis of Compensation", which is attached as **Exhibit B** and made a part of this Agreement.

#### **ARTICLE FIVE MAINTENANCE OF RECORDS**

5.1. The CONTRACTOR will keep adequate records and supporting documentation which concern or reflect its services hereunder. The records and documentation will be retained by the CONTRACTOR for a minimum of five 5 years from the date of termination of this Agreement or the date the Project is completed, whichever is later. the CITY, or any duly authorized agents or representatives of the CITY, shall have the right to audit, inspect and copy all such records and documentation as often as they deem necessary during the period of this Agreement and during the 5 year period noted above; provided, however, such activity shall be conducted only during normal business hours. **If the CONTRACTOR desires to destroy records prior to the minimum period, it shall first obtain permission from the CITY in accordance with the Florida Public Records laws.**

#### **ARTICLE SIX INDEMNIFICATION**

6.1. The CONTRACTOR agrees to indemnify and hold harmless the City from liabilities, damages, losses and costs, including, but not limited to, reasonable attorneys' fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the CONTRACTOR and persons employer or utilized by the CONTRACTOR in the performance of the Contract.

#### **ARTICLE SEVEN INSURANCE**

7.1. CONTRACTOR shall obtain and carry, at all times during its performance under **this Agreement**, insurance of the types and in the amounts set forth in the document titled General Insurance Requirements, which is attached as **Exhibit C and made a part of** this Agreement.

#### **ARTICLE EIGHT SERVICES BY CONTRACTOR'S OWN STAFF**

8.1. The services to be performed hereunder shall be performed by the CONTRACTOR's own staff, unless otherwise authorized in writing by the CITY. The employment of, contract with, or use of the services of any other person or firm by the CONTRACTOR, as independent contractor or otherwise, shall be subject to the prior written approval of the CITY. No provision of this Agreement shall, however, be construed as constituting an agreement between the CITY and any such other person or firm. Nor shall anything contained in this Agreement be deemed to give any such party or any third party any claim or right of action against the CITY beyond such as may otherwise exist without regard to this Agreement.

#### **ARTICLE NINE WAIVER OF CLAIMS**

9.1. The CONTRACTOR's acceptance of final payment shall constitute a full waiver of any and all claims, except for insurance company subrogation claims, by it against the CITY arising out of this Agreement or otherwise related to the Project, except those previously made in writing and identified by the CONTRACTOR as unsettled at the time of the final payment. Neither the acceptance of the CONTRACTOR's services nor payment by the CITY shall be deemed to be a waiver of any of the CITY's rights against the CONTRACTOR.

#### **ARTICLE TEN TERMINATION OR SUSPENSION**

10.1. The CONTRACTOR shall be considered in material default of this Agreement and such default will be

considered cause for the CITY to terminate this Agreement, in whole or in part, as further set forth in this section, for any of the following reasons: (a) failure to begin work under the Agreement within the times specified under the Notice(s) to Proceed, or (b) failure to properly and timely perform the services to be provided hereunder or as directed by the CITY, or (c) the bankruptcy or insolvency or a general assignment for the benefit of creditors by the CONTRACTOR or by any of the CONTRACTOR's principals, officers or directors, or (d) failure to obey laws, ordinances, regulations or other codes of conduct, or (e) failure to perform or abide by the terms or spirit of this Agreement, or (f) for any other just cause. The CITY may so terminate this Agreement, in whole or in part, by giving the CONTRACTOR at least 3 calendar days' written notice.

10.2. If, after notice of termination of this Agreement as provided for in paragraph 10.1 above, it is determined for any reason that the CONTRACTOR was not in default, or that its default was excusable, or that the CITY otherwise was not entitled to the remedy against the CONTRACTOR provided for in paragraph 10.1, then the notice of termination given pursuant to paragraph 10.1 shall be deemed to be the notice of termination provided for in paragraph 10.3 below and the CONTRACTOR's remedies against the CITY shall be the same as and limited to those afforded the CONTRACTOR under paragraph 10.3 below.

10.3. The CITY shall have the right to terminate this Agreement, in whole or in part, without cause upon 7 calendar day's written notice to the CONTRACTOR. In the event of such termination for convenience, the CONTRACTOR's recovery against the CITY shall be limited to that portion of the fee earned through the date of termination, together with any retainage withheld and any costs reasonably incurred by the CONTRACTOR that are directly attributable to the termination, but the CONTRACTOR shall not be entitled to any other or further recovery against the CITY, including, but not limited to, anticipated fees or profits on work not required to be performed.

#### **ARTICLE ELEVEN CONFLICT OF INTEREST**

11.1. The CONTRACTOR represents that it presently has no interest and shall acquire no interest, either direct or indirect, which would conflict in any manner with the performance of services required hereunder. The CONTRACTOR further represents that no persons having any such interest shall be employed to perform those services.

#### **ARTICLE TWELVE MODIFICATION**

12.1. No modification or change in this Agreement shall be valid or binding upon the parties unless in writing and executed by the party or parties intended to be bound by it.

#### **ARTICLE THIRTEEN NOTICES AND ADDRESS OF RECORD**

13.1. All notices required or made pursuant to this Agreement to be given by the CONTRACTOR to the CITY shall be in writing and shall be delivered by hand or by United States Postal Service Department, first class mail service, postage prepaid, return receipt requested, addressed to the following CITY's address of record:

City of Naples  
735 Eighth Street South  
Naples, Florida 34102-3796  
Attention: **A. William Moss**, City Manager

13.2. All notices required or made pursuant to this Agreement to be given by the CITY to the CONTRACTOR shall be made in writing and shall be delivered by hand or by the United States Postal Service Department, first class mail service, postage prepaid, return receipt requested, addressed to the following CONTRACTOR's address of record:

**Mitchell & Stark Construction Co., Inc.**  
**6001 Shirley Street**  
**Naples, FL 34109**  
**Attn: Brian Penner, CEO**

13.3. Either party may change its address of record by written notice to the other party given in accordance with requirements of this Article.

**ARTICLE FOURTEEN  
MISCELLANEOUS**

14.1. The CONTRACTOR, in representing the CITY, shall promote the best interest of the CITY and assume towards the CITY a duty of the highest trust, confidence, and fair dealing.

14.2. No modification, waiver, suspension or termination of the Agreement or of any terms thereof shall impair the rights or liabilities of either party.

14.3. This Agreement is not assignable, in whole or in part, by the CONTRACTOR without the prior written consent of the CITY.

14.4. Waiver by either party of a breach of any provision of this Agreement shall not be deemed to be a waiver of any other breach and shall not be construed to be a modification of the terms of this Agreement.

14.5. The headings of the Articles, Exhibits, Parts and Attachments as contained in this Agreement are for the purpose of convenience only and shall not be deemed to expand, limit or change the provisions in such Articles, Exhibits, Parts and Attachments.

14.6. This Agreement constitutes the entire agreement between the parties hereto and shall supersede, replace and nullify any and all prior agreements or understandings, written or oral, relating to the matter set forth herein, and any such prior agreements or understanding shall have no force or effect whatever on this Agreement.

Sec. 14. 7. The CONTRACTOR shall comply fully with all provisions of state and federal law, including without limitation all provisions of the Immigration Reform and Control Act of 1986 ("IRCA") as amended, as well as all related immigration laws, rules, and regulations pertaining to proper employee work authorization in the United States. The CONTRACTOR shall execute the Certification of Compliance with Immigration Laws, attached hereto as **Exhibit "D"**.

**ARTICLE FIFTEEN  
APPLICABLE LAW**

15.1. Unless otherwise specified, this Agreement shall be governed by the laws, rules, and regulations of the State of Florida, and by the laws, rules and regulations of the United States when providing services funded by the United States government. Any suit or action brought by either party to this Agreement against the other party relating to or arising out of this Agreement must be brought in the appropriate Florida state court in Collier County, Florida.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement for the day and year first written above.

ATTEST:

**CITY:**

CITY OF NAPLES, FLORIDA,  
A Municipal Corporation

By: \_\_\_\_\_  
Tara A. Norman, City Clerk

By: \_\_\_\_\_  
A. William Moss, City Manager

Approved as to form  
and legal sufficiency:

By: \_\_\_\_\_  
Robert D. Pritt, City Attorney

**CONTRACTOR:**  
**Mitchell & Stark Construction Co., Inc.**  
A Indiana Corporation

By: \_\_\_\_\_  
Its \_\_\_\_\_

\_\_\_\_\_  
Witness

(CORPORATE SEAL)

General Contract (not Architects/Engineers)

EXHIBIT A

SCOPE OF SERVICES

The Services to be provided under this Agreement are those set out below [or in Exhibit A-1 through A-], attached and made part of this Exhibit A.



**INVITATION FOR BID**

**CITY OF NAPLES  
PURCHASING DIVISION  
270 RIVERSIDE CIRCLE  
NAPLES, FL 34102**

**PH: 239-213-7100 FX: 239-213-7105**

<b>NOTIFICATION DATE:</b> 10/28/09	<b>TITLE:</b> <b>BASIN V DRAINAGE IMPROVEMENTS</b>	<b>NUMBER:</b> 006-10	<b>OPENING DATE &amp; TIME:</b> 2:00PM 11/20/09
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**PRE-BID DATE, TIME AND LOCATION:**  
Drawings are available on CD. Contact the City of Naples Purchasing Division.

PLEASE NOTE THE FOLLOWING:

<b>NAME OF PARTNERSHIP, CORPORATION OR INDIVIDUAL:</b> Mitchell & Stark Construction Co., Inc.	
<b>CITY-STATE-ZIP:</b> 6001 Shirley Street Naples, Florida 34109	
<b>PH:</b> 239-597-2165	<b>EMAIL:</b> Bpenner@mitchellstark.com
<b>FX:</b> 239-566-7865	<b>WEB ADDRESS:</b>

<b>AUTHORIZED SIGNATURE</b>	<b>DATE</b>	<b>PRINTED NAME/TITLE</b>
<i>BP</i>	11/20/09	Brian Penner CEO / VP

Please initial by all that apply  
I acknowledge receipt of the following addendum

*BP* Addendum #1      *BP* Addendum #2      *BP* Addendum #3      Addendum #4

transfer to the City of Naples all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the Anti-trust laws of the United States and the State of FL for price fixing relating to the particular commodities or services purchased or acquired by the City of Naples. At the City's discretion, such assignment shall be made and become effective at the time the City tenders final payment to the bidder.

- > **This page must be completed and returned with your bid.**
- > **Bids must be submitted in a sealed envelope, marked with bid number & closing date.**
- > **Bids received after the above closing date and time will not be accepted.**
- > **If you do not have an email address and you want a copy of the Bid Tab, please enclose a stamped, self-addressed envelope with your bid.**



## GENERAL REQUIREMENTS

### GR-1 SUMMARY / SCOPE OF WORK

The work will involve the installation of pipes, structures and drainage improvements, as well as the re-grading of roadway swales within street right of ways in certain designated areas of the Basin V Stormwater System, all lying within the City of Naples.

### GR-2 DEFINITIONS

The terms used in these General Requirements are defined in the "STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT" prepared by Engineers Joint Contract Documents Committee, EJCDC No. C-700 (Formerly 1910-8), 2007 Edition.

### GR-3 ABBREVIATIONS

Reference in the technical specifications to the specifications or requirements of technical societies, associations, organization" or bodies shall mean their most current specifications. These groups are identified in the technical specifications by the following abbreviations:

AASHTO	American Association of State Highway and Transportation Officials
ANSI	American National Standards Institute, Inc.
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
FDOT	Department of Transportation - State of Florida
UAM	Utility Accommodations Manual
EJCDC	Engineers Joint Contract Documents Committee

### GR-4 USE OF PUBLIC STREETS

The use of public streets and roads shall be such as to provide a minimum of an inconvenience to the public and to other traffic. Any earth or other excavated materials spilled from trucks shall be removed by the contractor and the streets and roads cleaned to the satisfaction of the owner.

### GR-5 MAINTENANCE OF TRAFFIC

All safety precautions shall be taken and all traffic controls shall be furnished satisfactorily to the CITY and/or government agencies having jurisdiction, where partial or complete obstruction of highways, roadways, streets, drives or sidewalks is required in the performance of the work.

1. In advance of construction, the Contractor will submit a Maintenance of Traffic (MOT) plan to the City for each improvement project which will include detailed information on the phasing of work such that street traffic flow is maintained and residents are allowed usable driveway access to their homes at all times. The MOT will be based on the criteria provided by FDOT index 619, 621 and 623.
2. The Contractor will consult with the City and inform the City in advance of all construction phases in order to adequately coordinate operational aspects of this plan. The City will maintain final control over the specific times and operational traffic detours as may be required for construction. During traffic maintenance operations the Contractor shall provide suitably qualified traffic flagmen and operation personnel without language handicap and with ability to communicate and direct traffic flow on the job at all times. The Contractor will obtain the necessary approvals from local jurisdiction for any weekend or after hours work.

### GR-6 JOBSITE INSPECTIONS

The Contractor shall provide access to the project jobsite for the City and their representative as requested

for inspection.

The authorized representatives and agents of the Environmental Protection Agency, South Florida Water Management District and Controlling State and Local Pollution Control Agencies shall be permitted to inspect all work, material and other relevant data records.

#### GR-7 CONTRACTOR'S ON THE JOB REPRESENTATIVE

The Contractor shall provide and maintain suitably qualified supervisory personnel at the project site during working hours for the duration of construction. This person will be expected to have operational control, direct knowledge and understanding of the ongoing construction activity and be able to communicate without language handicap.

#### GR-8 ROCK EXCAVATION

Material to be excavated hereunder in trenches, ditches, subgrades, water bodies, etc. shall include earth, rock or any other material encountered in excavating to the depth and extent indicated on the drawings and herein specified. No adjustment in the contract price will be made on the account of the absence or presence of rock, shale, masonry or other materials. In the case of any change order in writing by the Engineer in the quantity of excavation, the excavation involved shall be unclassified; the value shall be determined and the contract price will be adjusted as provided in the General Conditions.

#### GR-9 DAMAGE TO FRONT YARDS, LANDSCAPING, IRRIGATION SYSTEMS & DRIVEWAYS

The Contractor is advised that this project will involve work within the Rights of Way (ROW). Hardscape features including (but not limited to) landscaping, mailboxes, driveways and irrigations systems may be impacted by construction. The following conditions shall apply during construction:

1. Inventory of existing conditions: Prior to commencement of construction activities, the Contractor will conduct a detailed inventory of the location of hardscape items within and adjacent to the construction zone. Of particular note will be residential yards lying adjacent to and along the project area. A video documentary is required for this inventory and will be kept by the Contractor for the duration of the project, and copies are to be provided to the Engineer and the representatives of the City. This material will be used as reference to verify that all work done is kept within the project limits and that any adjacent areas temporarily affected by this construction are fully restored to original conditions at the completion of work. If, as a result of changed conditions brought about by the new improvements, certain changes to residential yards, including grading, driveway configurations, tree and shrub locations, become unavoidable, the Contractor will notify the Engineer for instruction and approval to proceed.
2. Damage To Items Outside Project Limits: There is no construction work located outside of City owned rights of way or easements; therefore, the Contractor will be responsible for damage to all items lying outside the project limits and street right of way areas. This includes all landscaping. Damage shall be repaired and/or replaced, surfaces re-graded and restored to original conditions at the completion of work.
3. Damage To Items Within Project Limits: The project work zones include areas considered to be residential front yards. While located in the City ROW, private property owners are responsible for irrigation systems, sod, driveways, decorative lighting and mailboxes, among other things. The Contractor will be responsible for re-installation, replacement or repair of any damage to these items, unless otherwise directed by the Engineer. These items shall NOT be covered by the lump sum, fixed landscape item with the bid tabulations.

It is noted that the project work zones may include trees and other landscaping that the City considers undesirable or desirable. Throughout this contract, the Contractor and the City's Engineer shall coordinate on the preservation, removal, or removal and replacement of landscaping within the ROW. The City's Project Engineer shall have final authority in this matter. A lump sum fixed cost has been added to the bid tabulation to address these landscape items that typically will include trees, shrubs, bushes, and other decorative vegetation. Sod, mulch and other ground cover in NOT included in this bid item and shall be included in other

bid items as determined by the contractor.

## GR-10 DAMAGE TO UTILITIES AND EXISTING STRUCTURES

The Contractor will note that all utilities are not shown on the plans.

There exists underground Potable Water, Re-use Water, Irrigation, Sanitary Sewer, TV cable, Fiber-optic Lines, Telephone Lines, Power lines and associated utility facilities within the project limits. The Contractor shall adhere to Sunshine One Call and Florida Statute for the marking of utility locations throughout the project. Where utility conflicts exist, each utility owner shall be contacted by the contractor well prior to conflict resolution. The construction plans show the location of known potable water, irrigation water and sanitary sewer conflicts. These known conflict locations are remedied per the plans. If unknown utility conflicts exist, each utility owner shall be contacted and the Project Engineer, Contractor and Utility Owner shall remedy the unknown conflict at the time of discovery. Work may be done under this contract's Unforeseen Allowance category, or by the utility owner.

The following utility owners are required to relocate their utility line given due notice by the City:

- ✓ Florida Power & Light
- ✓ Comcast Cable
- ✓ TECO Gas
- ✓ Embarq Telephone

Information shown on the Drawings as to the location of existing utilities has been prepared from the most reliable data available to the Engineer. This information is not guaranteed, however, and it shall be the Contractor's responsibility to determine the location, character and depth of any existing utilities.

The Contractor will exercise extreme caution to eliminate any possibility of any damage to utilities lying within, and traversing, the project limits, as a result of construction activities. The Contractor shall hold the City harmless, and will be responsible for, and make good for all damage caused, by his construction operations to the above described utilities. The Contractor will be similarly responsible for all damage to any buildings, facilities, pavement or other existing structures which may be encountered, whether or not shown on the drawings, which lie beyond the limits of this Contract.

## GR-11 ADJUSTMENT OF GRADES

Adjustments of grades shown on drawings may be necessary to conform to actual field conditions or to maintain cover over existing utilities or unavoidable conditions. Such adjustments shall be considered part of the job conditions and no extra compensations will be allowed for such changes, except where specifically otherwise noted in the plans or specifications. Such adjustments must be approved by the Engineer prior to being executed.

## GR-12 CHEMICALS

All chemicals used during project construction, or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with instructions.

## GR-13 SAFETY AND HEALTH REGULATIONS

The Contractor shall comply with the Department of Labor Safety & Health Regulations for construction promulgated under the Occupational Safety & Health Act of 1970, (PL 91-596) and under Section 107 of the Contract Work Hours & Safety Standards Act (PL 91-54).

All equipment furnished and installed under this contract shall comply with Part 1910, Occupational Safety & Health Standards & Amendments thereto.

## GR-14 PERMITS AND FEES

Construction in County or State Department of Transportation rights-of-way and construction in wetlands and navigable water bodies will be governed by applicable County, State and Federal permits. All conditions set forth on the permits shall be a part of the contract and they shall be attached by addendum.

1. Unless otherwise specified, the Contractor shall obtain and pay for all permits and licenses related to his work, except as otherwise provided herein. Permits already acquired are:
  - a. South Florida Water Management District Environmental Resource Permit
  - b. City of Naples ROW Permit
  - c. A City of Naples Building Permit is NOT required for this job.
2. Additional permitting that may need to be obtained by the Contractor may include, but not limited to:
  - a. Stormwater Pollution Prevention Plan (SWPPP) and NPDES construction permits (the SWPPP is included within the construction plans and may be used by the contractor)
  - b. Collier County Right of Way Permits
  - c. Equipment transport permits
  - d. Dewatering permits
  - e. Others not provided herein.
3. The Contractor will be issued copies of all permits obtained by the CITY. The contractor is responsible for posting a copy of the permits at the site and maintaining them at all times during construction. The Contractor shall be responsible for familiarizing himself with the permits and shall abide by the permit conditions at all times.

## GR-15 AIR AND WATER POLLUTION PREVENTION PROCEDURES

### A. Water Pollution Control

Construction procedures shall include temporary pollution control measures to ensure that soil erosion which might cause water pollution is kept to a minimum. Such measures may consist of construction of berms, dikes, dams, drains and sediment basins, or use of fiber mats, woven plastic filter cloths, gravel mulches, quick growing grasses, sod, bituminous spray and other erosion control devices or methods.

1. Prior to the start of construction, the Contractor shall submit, for acceptance, his schedules for accomplishment of temporary erosion control and his plan for disposal of waste materials or other potential sources of pollution.
2. If temporary pollution control measures are ordered by the Engineer, the work shall be accomplished under the respective item of work subject to the limitations as defined in the contract's general provisions. If the work is such that no quantities or prices were given in the contract, the work shall be covered by a change order submitted by the Contractor and approved by the Owner. Should the parties be unable to agree on unit prices, or if this method is impractical, the Engineer may instruct the Contractor to proceed with the work by day labor or other means consistent with Article 11.01.A, 11.01.B of the General Conditions.
3. In the event that temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls in a timely manner, then such work to be performed by the Contractor shall be at his own expense.
4. In case of repeated failures on the part of the Contractor to control erosion pollution, right is reserved to the Engineer to employ outside assistance to provide the necessary corrective measures. Such incurred costs, plus related engineering costs, will be charged to the Contractor and appropriate deductions made from the Contractor's progress payments.
5. All erosion control features installed by the Contractor shall be acceptably maintained by the Contractor during the duration of construction.

### B. Other Water Pollution Controls

1. At the conclusion of the work, all waterways, major drainage ditches and other drainage flow conveyances shall promptly be cleared by the Contractor of false work, piling, debris, or other obstructions placed during construction.
2. The Contractor will exercise caution with the placement of barriers and erosion control devices so as not to block, or otherwise render inoperable major drainage ditches and other drainage flow conveyances during the duration of construction.

### C. Conflict with Other Controls

In the event of conflict between these requirements and pollution control laws, rules or regulations of other federal, state, or local agencies, the more restrictive laws, rules, or regulations shall apply.

### GR-16 REFERENCE POINTS

The Contractor shall locate and reference the project survey control network and establish bench marks at appropriate intervals along the line of the project for use by the Contractor in establishing horizontal and vertical controls necessary for the construction. If the Contractor or subcontractor destroys these locations, the Contractor shall re-establish these points.

The Contractor's stakeout work shall be included in the contract unit price for the various items of work to which it is incidental.

### GR-17 ENGINEERING LAYOUT REQUIREMENTS

The Contractor shall provide construction layout and staking. The work shall include performing all calculations required and setting all stakes needed, such as offset stakes, reference point stakes, slope stakes and other reference marks or points necessary to provide lines and grades for construction of all improvements.

1. All elevations shown on the civil plans are referenced in NGVD 1929. All staking work will be done in accordance with approved civil plans in NGVD 1929 Datum.
2. The Contractor shall be responsible for the placement and preservation of adequate ties and reference to all control points, whether established by him or found on the project, necessary for the accurate reestablishment of all base lines or centerlines shown on the Plans.
3. Swale construction: The Contractor shall provide grade stakes in the field showing proposed swale locations, design and constructed conditions with cut and fill marks. Staking shall be sufficiently spaced to capture all design features but no greater than a 25 foot grid. These stakes will be removed after acceptance of final grades by the Engineer or the City's representative.

### GR-18 REFERENCE TO OTHER SPECIFICATIONS

Reference to F.D.O.T. Specifications shall mean the State of Florida Department of Transportation Standard Specifications for Road and Bridge Construction dated January 2007. Where F.D.O.T. Section cited contains references to other Sections, they shall also be included as though cited herein. Where F.D.O.T. Specifications refer to the "Engineer", "Engineer of Tests", or "Division of Tests", it shall be understood to mean the Engineer of the OWNER as such in the Agreement. Where F.D.O.T. Specifications refer to the "Department", it shall mean the Engineer of Record. In case of conflict between the referenced F.D.O.T. Specifications and the Contract Documents, the Contract Documents shall govern.

Reference to A.A.S.H.O. and A.S.T.M. are to the latest editions of published Tests of the American Association of the State Highway and Transportation Officials and the American Society for Testing Materials, respectively.

### GR-19 SUBMITTALS

1. Submittals to the City will include, as a basis for approval of the use of materials for incorporation in the work, the following items:
2. Shop Drawings for all proposed materials, structures and piping.
3. Schedule of Construction activities.
4. Maintenance of Traffic plans as specified in GR-5.
5. Copies of all permits obtained by the Contractor.
6. Survey as-builts as specified in GR-20.
7. Product data and manufacturer's information on specific equipment proposed to be incorporated into the work.
8. Landfill delivery tickets.
9. Rip rap delivery tickets.
10. Water Quality monitoring and any test results as required by permits.
11. Laboratory test results and delivery tickets for borrow fill material.
12. In-place field density tests.
13. Soil permeability tests to establish Hydraulic Conductivity (K-ft/sec) at retention swales as specified in GR-20.
14. Tags from grass seed bags.
15. Soil ph tests.
16. Documentations of any official compliance Notice of Violations, as well as documented evidence of submittals or paperwork submittals to resolve these issues consistent with permit requirements.

#### GR-20 AS-BUILT RECORDS

At the end of the project, the Contractor will submit to the City a certified as built site survey showing coordinates and elevations of the completed work.

1. At the conclusion of the work, all as-built information will be referenced in NGVD 1929.
2. The as-built survey will locate and identify the elevation of all drainage structures and inlets. Information to be provided will include grates and inverts.
3. Swale Cross-sections: Final as-built retention swale configuration and cross-sections will be provided at the completion of the work. A minimum of three (3) cross-sections will be provided for each swale; to be located across both ends and across the swale mid-point. Maximum cross-section spacing under any circumstance will be based on a twenty-five (25) foot interval.
4. The Contractor shall provide eight (8) signed and sealed surveys, including design and constructed features and benchmarks. One (1) CD will be submitted including as-built designs.
5. Swale Soil Conductivity Tests: Contractor will provide permeability tests (K-ft/sec) to establish the hydraulic conductivity of soils underlying roadside swales. Tests will be carried out at a minimum of three (3) separate locations for each improvement ID. Test locations will be established in consultation with the Engineer.

#### GR-21 CONTROL OF MATERIALS

The Control of Materials shall conform to F.D.O.T. Specifications, Section 6.

#### GR-22 LIMITATION OF OPERATIONS

Limitation of operations shall conform to F.D.O.T. Specifications in Section 8-4.1 through 8-4.7.

#### GR-23 MEASUREMENT AND PAYMENT

Measurement and Payment shall conform to F.D.O.T. Specifications, Section 9 unless otherwise set forth in the Technical Specifications. In case of conflict between the referenced F.D.O.T. Specifications and the

Contract Documents, the Contract Documents shall govern.

## GR-24 PROTECTION OF WORK

The Contractor and its agents shall take reasonable precautions and maintain reasonable safeguards to protect the SITE DEVELOPMENT WORK against loss or damage including, without limitation, bracing and reinforcing where necessary and providing guards, locks, fences, signs, barricades, lights and such other warning and security devices where appropriate.

### TECHNICAL SPECIFICATIONS

#### SECTION 02105

#### CLEARING, GRUBBING AND DEMOLITION

##### PART 1 GENERAL

##### 1.01 WORK INCLUDED

- A. The labor, materials, tools, equipment, supervision, to perform all site work specified in this section consisting of the clearing, grubbing, demolition and disposal of all material and debris for the areas within the project limits as designated on the Plans or as directed by the Engineer.
- B. Contractor will repair at his expense all Damage to structures outside the work area. The City will not be responsible for the condition of any items to be removed, salvaged or for any breakage beyond limits of construction.
- C. This section will include demolition , razing and disposal of fences, sidewalks, driveways, pavements, storm structures and piping as required per plan or as directed by the Engineer.

##### 1.02 REFERENCES

- A. Standard site clearing and grubbing, in accordance with FDOT Specification Section 110.2.

##### PART 2 PRODUCTS

##### 2.01 MATERIALS

- A. Demolition debris: Pavement and concrete rubble, landscaping debris and rubbish resulting from demolition operations.
- B. Hazardous materials: If hazardous materials are encountered during demolition operations, the CONTRACTOR shall comply with applicable regulations, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution.

##### PART 3 EXECUTION

##### 3.01 GENERAL

- A. The Areas shown on the Plans to be cleared, grubbed and demolished under this Section shall be staked by the Contractor and approved by the Engineer before work begins. The clearing, grubbing and demolition shall be done well in advance of grading, stripping or other operations as approved by the Engineer.
- B. Whenever any above or below ground communications facility, pipeline, conduit, sewer, drain, or any other utility not depicted on the Plans is encountered which must be either removed or relocated, the Contractor shall promptly advise the Engineer of this condition.

## STANDARD CLEARING AND GRUBBING

- A. Clearing and grubbing shall consist of clearing the surface of the ground, stumps, roots, matted roots, down timber or wood, logs, snags, boulders, unsuitable soil, silt, brush, undergrowth, underwater growth, hedges, and heavy growth of grass or weeds and the proper disposal of such materials. The contractor shall not remove any trees or major landscaping without prior approval from the Engineer.

### 3.02 DEMOLITION

- A. Demolition shall consist of the removal and disposal from the site of fences, gates, sidewalks, asphalt and concrete pavements, above and below ground structures and utilities, drainage or utility structures and pipes or other appurtenances. The work shall also include utility modifications, and utility disconnects.

### 3.03 DEMOLITION OF PAVEMENT

- A. Demolition of pavement: In paved areas to be demolished the bituminous or concrete pavement materials shall be scarified and/or broken into pieces, using approved equipment and shall be removed and disposed of.
- B. The CONTRACTOR shall protect from damage by construction operations, all pavements including base courses, surface courses and curbs and gutters, adjacent to the work area.
- C. Any base course or surface course curbs, gutters, etc. damaged or removed shall be restored by the CONTRACTOR in accordance with applicable requirements of these specifications and the drawings, to the CITY'S satisfaction and to the satisfaction of the governing authority having jurisdiction over the work. In some cases, and if so deemed by the CITY's representative, the damage to certain sections may warrant the replacement of the entire damaged area.
- D. Any pavement damaged or removed shall be replaced with the same type and composition of material removed/damaged to ensure equal or greater structural adequacy. The surface material shall be the same as the existing surface. The repair shall include the preparation of the subgrade, placing and compacting of base material, priming of base, and the placement of the surface.
- E. The width of all repairs will extend a minimum of 12" past the damaged or removed pavement.
- F. To avoid damaging existing underground utilities, the use of drop hammers or wrecker balls to break Portland Cement (P.C.) concrete pavement slabs will not be permitted.
- G. The CONTRACTOR shall, unless otherwise approved by the Engineer, begin breaking the pavement slab near its center, then proceed breaking the slab uniformly toward its outer edges.
- H. When the work requires the partial removal of a concrete pavement slab, the CONTRACTOR shall saw cut the slab, to its full depth, along the peripheral lines of the proposed removal limits using approved mechanical saws, prior to breaking the portion of the pavement slab to be removed.

END OF SECTION



## SECTION 02210

### EARTHWORK

#### PART 1 GENERAL

##### 1.03 WORK INCLUDED

- A. Excavation of lakes, swales and other areas shown on the Drawings
- B. Filling of road embankments, building pads, berms and other areas shown on the Drawings.
- C. Grading (including final grading) site to elevations, lines, slopes, depths and cross-sections shown on the Drawings.
- D. Compaction and testing of fill as specified in this Section.
- E. Use of explosives is not allowed.

##### 1.04 REFERENCES

- B. ANSI/ASTM D698 (AASHTO T-99) – Moisture-Density Relations of Soils and Soil Aggregate Mixture Using 5.5 lb. (2.49 kg) Rammer and 12 inch (305mm) Drop.
- C. ANSI/ASTM D1557 (AASHTO T-180) – Moisture-Density Relations of Soils and Soil Aggregate Mixture Using 10 lb. (4.54 kg) Rammer and 18 inch (457 mm) Drop.
- D. ASTM D2922 – Density of Soil and Soil Aggregate in Place by Nuclear Method (Shallow Depth).
- E. Florida Department of Transportation (FDOT), Standard Specifications for Road and Bridge Construction.
- F. AASHTO M-145: Designation M-145 “Classification of Soils and Soil Aggregate Material for Highway Construction Purposes.

##### 1.05 QUALITY ASSURANCE

- A. All contractors and subcontractors: Company specializing in respective field of work with five years of documented experience.

##### 1.06 REGULATORY REQUIREMENTS

- A. Conform to Collier County Excavation Permit(s) and South Florida Water Management District Water Management Permit(s) for project.
- B. Obtain De-watering Permit from South Florida Water Management District prior to de-watering of any areas.

##### 1.07 SUBMITTALS

- A. Submit Shop Drawings.
- B. Shop Drawings shall include information submitted in conjunction with requirements in Section 1.04 above.

#### PART 2 PRODUCTS

## 2.01 MATERIALS

- A. Suitable Material: Clean sand or sand rock fill, containing not more than 20% rock with maximum rock size less than two inches and free from organic soil, peat or muck.
- B. Unsuitable Material: Topsoil from ground surface to a depth of six inches or as determined by Engineer; material classified as A-8 in accordance with AASHTO Designation M145-73 or material considered to be highly organic soil (peat or muck) as determined by Engineer.
- C. Rock: Material which by actual demonstration cannot, in the Engineer's opinion, be reasonably excavated with a backhoe or  $\frac{3}{4}$  cubic yard capacity power shovel equipped with two rippers, or similarly approved equipment and which is, in fact, systematically drilled and blasted or broken by power operated hand tools. Engineer may waive demonstration requirement if material encountered is well-defined rock.

## PART 3 EXECUTION

### 3.04 INSPECTION

- A. Verify site conditions and note irregularities affecting work of this section.
- B. Beginning work of this section means acceptance of existing conditions.

### 3.05 EXCAVATION

- A. Perform excavation work in accordance with Section 120 of FDOT Standard Specifications, in the locations shown on the Drawings.
- B. Strip existing surfaces to be excavated to a depth of six inches unless otherwise directed by Engineer to remove grass, roots and other vegetation. Use this stripped material only as topsoil as it is considered unsuitable for general fill purposes.
- C. Located all underground structures and utilities in the areas of work to avoid conflicts with existing facilities. Where conflicts are unavoidable, perform work so as to cause as little interference as possible with the service rendered or the facility disturbed. Repair all facilities or structures damaged in the prosecution of the work immediately to pre-construction condition.
- D. Use all suitable materials removed from excavation areas as far as practicable in the formation of embankment, sub-grades, shoulders, building pads and other places as directed. Waste no excavated material without permission, and where necessary, dispose of material as directed by engineer. Stockpile all topsoil and all other suitable materials in areas as directed by Engineer. All excavated material is considered property of Owner and shall be disposed of on the project.

### 3.06 ROCK EXCAVATION

- A. If rock is encountered, notify Engineer and execute as follows.
- B. Advise owners of adjacent buildings or structures in writing prior to setting up seismographs.
- C. Obtain a seismic survey prior to rock excavation to determine maximum charges that can be used at different locations in the area of excavation without damaging adjacent properties.
- D. Disintegrate rock and remove from excavation. Maximum dimension of all rock removed shall not exceed three feet. Dispose of rock on the project in areas as directed by Engineer.

- E. No explosives are allowed on this job. Contractor will use non-destructive methods only.

### 3.07 FILL

- A. Perform filling work in accordance with Section 120 of FDOT Standard Specifications, in the locations shown on the Drawings.
- B. Use only suitable materials in the formation of embankments, sub-grades, shoulders, building pads and other places as directed.
- C. Fill roadway embankments and building pads in twelve inch maximum layers and compact to density of at least 98% of maximum dry density as determined by AASHTO T-180. Compact materials at a moisture content within 2% of the optimum. If necessary, add water or allow material to dry until the proper moisture content for the specified compaction is obtained. Allow testing of each compacted fill layer, in place, prior to placement of succeeding fill layers.

### 3.08 TESTING

- A. Retain a laboratory approved by Engineer to make field density tests and Proctor Tests as specified below.
- B. Contractor will pay the cost of the initial density test(s).
- C. Contractor shall pay cost for any additional testing that is required as a result of failure of any initial test.
- D. Perform one Proctor Test according to ASTM D698 or D1557 for each source of fill, as determined by Engineer, used on the project.
- E. Test the density of each compacted fill layer in place by field density test ASTM D 2922. Perform at least one test per layer for each 600 feet of roadway or each 1,000 square feet of building, or fraction thereof.
- F. Additional field tests will be required for each test that does not meet the required density.
- G. Allow for inspection of import fill by Engineer at the source before delivery to site.
- H. Allow for inspection and cross-sectioning of all excavated and fill areas by Engineer as required to determine conformance of the final earthwork with the Drawings.

END OF SECTION

02210-4

## SECTION 02211

### SITE PREPARATION AND GRADING

#### PART 1 GENERAL

##### 1.01 WORK INCLUDED

- A. The labor, materials, tools, equipment, supervision, etc. to perform all site work not included as part of structural earthwork (Section 02220). This section also covers earthwork including clearing, grubbing, excavation, filling, backfilling, compacting, grading and disposal of site spoil required for construction of swales, all complete as shown on Civil Drawings and specified herein.

##### 1.02 REFERENCES

- A. ANSI/ASTM D698 (AASHTO T-99) – Moisture-Density Relations of Soils and Soil-Aggregate Mixture Using 5.5 lb (2.49 kg) Rammer and 12 inch (305 mm) Drop.
- B. ANSI/ASTM D1556 – Density of Soil in Place by the Sand-Cone Method.
- C. ANSI/ASTM D1557 (AASHTO T-180) – Moisture-Density Relations of Soils and Soil-Aggregate Mixture Using 10 lb. (4.54 kg) Rammer and 18 inch (457 mm) Drop.
- D. ASTM D2922 – Density of Soil and Soil aggregate in Place by Nuclear Method (Shallow Depth).

##### 1.03 PROJECT RECORD DOCUMENTS

- A. Submit documents under provisions of Section 01700, Contract Closeout.
- B. Accurately record location of utilities remaining, rerouted utilities, new utilities by horizontal dimensions, elevations or inverts, and slope gradients.

##### 1.04 PROTECTION

- A. Protect trees, shrubs, lawns, and other features remaining as portion of final landscaping.
- B. Protect bench marks, existing structures, fences, roads, sidewalks, and paving and curbs.
- C. Protect above or below grade utilities which are to remain.
- D. Repair damage.

#### PART 2 PRODUCTS

##### 2.02 MATERIALS

- C. Topsoil: Excavated material, graded free of roots, rocks, subsoil, debris, and large weeds.
- D. Fill: Excavated material (excluding top six inches) or imported material shall be clean sand or sand rock. Material shall contain not more than 15 percent of material passing sieve #200 and not more than 20 percent rock with maximum rock size of two inches, free form organic material.

#### PART 3 EXECUTION

##### 3.01 PREPARATION

- A. Clear areas required for access to site and execution of Work.
- B. Remove trees and shrubs within marked areas. Grub out stumps, roots, and surface rock to a depth of two feet below existing grade.
- C. Clear undergrowth and deadwood without disturbing subsoil.
- D. Strip grass and roots to a depth of six inches from proposed site.
- E. Identify required lines, levels, contours, and datum.
- F. Identify known below grade utilities. Stake and flag locations.
- G. Identify and flag above grade utilities.
- H. Maintain and protect existing utilities remaining which pass through work area.
- I. Notify utility company to remove and relocate utilities.
- J. Upon discovery of unknown utility or concealed conditions, discontinue affected work and notify Engineer.

### 3.02 TOPSOIL EXCAVATION

- A. Excavate topsoil from entire site and store all topsoil for reuse on site.
- B. Do not excavate wet topsoil.
- C. Stockpile topsoil to depth not exceeding 6 feet. Cover to protect from erosion.

### 3.03 DEBRIS REMOVAL

- A. Remove from the site all trash, brush, trees, weeds, and grass obtained from the clearing and grubbing operation.

### 3.04 FILLING

- A. Fill areas to be filled in 8 to 12 inch maximum layers and compact to a density of at least 95 percent of maximum density as determined by AASHTO T-180.
- B. Compact materials at a moisture content within  $\pm 2\%$  of the optimum. If required, add water or permit material to dry until the proper moisture content for specified compaction is obtained.
- C. Compact materials at a moisture content within  $\pm 2\%$  of the optimum. If required, add water or permit material to dry until the proper moisture content for specified compaction is obtained.
- D. Field test density of compacted fill layer by Field Density Test ASTM D1556 or D2922 prior to placement of succeeding lifts. At a minimum, make at least one test per layer for every 8,000 square feet of non-structural area.
- E. A laboratory retained by Contractor and approved by Engineer shall make field density tests as specified. One Proctor Test (ASTM D698 or ASTM D1557) for each source of fill used shall be made by laboratory. Additional field tests will be required for each test not meeting required density. Costs of all tests will be paid by Contractor and included in Contract price.

3.05 GRADING

- A. Grade to meet proposed elevations as shown on the Drawings and include all work in bringing excavation to required grade, alignment and cross section. Any excess excavated material shall remain the property of the Owner and disposed of as directed by Engineer.

END OF SECTION

02211-3

## SECTION 02220

### STRUCTURAL EARTHWORK

#### PART 1 GENERAL

##### 1.01 DESCRIPTION

- A. Work Included: All labor, materials, tools, equipment, supervision, etc. to perform all earthwork including clearing, grubbing, excavation, dewatering, filling, backfilling, compacting, grading and disposal of site spoil required for construction of structures, all complete as shown on Drawings and specified herein.
- B. Definitions:
  - 1. Maximum Density: Maximum weight in pounds per cubic foot of a specific material.
  - 2. Optimum Moisture: Percentage of water in a specific material at maximum density.
  - 3. Rock Excavation: Excavation of any hard natural substance which requires the use of explosives or special impact tools such as jack hammers, sledges, chisels or similar devices specifically designed for use in cutting or breaking rock, but exclusive of trench excavating machinery.
- C. Plan for Excavation: The Contractor shall be responsible for having determined to his satisfaction, prior to the submission of his bid, the conformation of the ground, the character and quality of the substrata, the types and quantities of materials to be encountered, the nature of the groundwater conditions, the prosecution of the work, the general and local conditions and all other matters which can in any way affect the work under this Contract. Prior to commencing the excavation, the Contractor shall submit a plan of his proposed operations to the plan for excavation shall reflect, the equipment and methods to be employed in the excavation. The prices established in the Proposal for the work to be done will reflect all costs pertaining to the work. No claims for extras based on substrata or groundwater table conditions will be allowed.

##### 1.02 QUALITY ASSURANCE

- A. Retain a testing laboratory experience in soils and foundations acceptable to the Engineer to monitor earthwork and to make the specified tests. Schedule work so as to permit a reasonable time for testing before placing succeeding lifts and keep the laboratory informed of progress. A copy of this section shall be made available to the testing laboratory.

##### 1.03 APPROVAL REQUIRED

- A. Prior to any earthwork, submit sieve analysis and Proctor test results of the existing stripped soils and the proposed fill material to Engineer for review and approval.
- B. Do not place any footing reinforcing until the excavations have been tested for compaction.
- C. Obtain necessary permits for well pointing and dewatering from South Florida Water Management District and Department of Environmental Regulation.

##### 1.04 JOB CONDITIONS

- A. The Contractor shall satisfy himself as to the character and amount of different soil materials, groundwater and the subsurface conditions to be encountered in the work to be performed. Information and data, when furnished, are for the Contractor's general information. However, it is expressly understood that any interpretation or conclusion drawn there from is totally the responsibility of the Contractor. Engineer assumes no liability for the accurateness of the data reported.

- B. Ground water varied from 0.5 feet to 4.0 feet below existing grades at the time of subsurface investigations at various sites. Actual water table may fluctuate during construction.
- C. If, in the opinion of the Engineer, conditions encountered during construction warrant a change in the footing or base slab elevation, or in the depth of removal of unsuitable material from that indicated on the Drawings, an adjustment will be made in the contract price.

## PART 2 PRODUCTS

### 2.01 MATERIALS

- A. Suitable: For fill and backfill, clean, coarse sand free from vegetation, organic material, marl, silt or muck. Not more than eight percent shall pass through the No. 200 sieve. Provide all necessary borrow material to complete the work to lines and grades indicated.
- B. Suitable Fill Material To Be Placed in Water: Classified as A-1 or A-3 in accordance with AASHTO Designation M-145.
- C. Unsuitable: Classified as A-2-5, A-2-6, A-2-7, A-4, A-5, A-6, A-7 and A-8 in accordance with AASHTO Designation M 145. Also peat and other highly organic soils.
- D. Select Material: Suitable material that does not contain any rock larger than 1/2 inches.
- E. Gravel Base: Washed coarse aggregate for concrete with fines not more than five percent passing through the No. 200 sieve.

## PART 3 EXECUTION

### 3.01 SITE PREPARTION

- A. Clean and grub all surface vegetation, excavating and removing all topsoil a minimum of eight inches from the building structure area plus a six foot margin from the exterior foundation lines. Remove all tree stumps, concentration of roots and other deleterious materials. Stockpile usable topsoil for landscaped areas as directed by the Engineer.
- B. Dispose of unsuitable topsoil and excavated material from the site.
- C. If unsuitable bearing soils, peat or muck are encountered, contact Engineer for further direction.
- D. Structures excavations below water table shall require a dewatering system to prepare the base of the excavation. The dewatering system shall remove water approximately two feet to three feet below the bottom of the excavation.
- E. Compact exposed stripped and excavated surface for buildings by means of an approved vibratory roller until eight passes have been made and a soil density of 98 percent of maximum modified Proctor Density has been achieved twelve inches below the exposed compacted surface. Test compaction as specified. Add water if necessary to bring up moisture to optimum levels.
- F. If ground water is within twelve to twenty-four inches from the ground surface, it would be necessary to lower the ground water to permit effective compaction. Lowering of the ground water may be accomplished by excavating four to five feet deep ditches around the construction area and pumping from sumps in the bottom of ditches. Contact testing lab to develop feasible procedures for dewatering.

### 3.02 DEWATERING



- A. Provide labor and equipment necessary to adequately remove water from excavated areas including well pointing where excavations are near or below water table in order to maintain “dry” conditions in excavations at all times until backfilling is completed. Dewater excavations for cast-in-place structures to a minimum level of three feet below structural grade. Avoid settlement or damage to adjacent property. Dispose of water to an on-site drainage system approved by the Owner. When dewatering open excavations, dewater from outside the structural limits and from a point below the bottom of the excavation. Comply with dewatering permit.
- B. Maintain fill area in such condition that it will be drained to prevent surface pooling of water at all times.
- C. Operate pumps and engines for well point systems with mufflers. The Contractor shall be responsible for any nuisance created due to the disposal of water from his drainage system. All dewatering drains shall be approved by Owner.
- D. Conform with South Florida Water Management and Florida Department of Environmental Regulation regulations and requirements when dewatering.
- E. All dewatering wells shall be grouted when dewatering operations are concluded.

### 3.03 EXCAVATION

- A. Perform all excavation of each description and through all substances encountered, including limestone to the dimensions required for construction and as specified herein. All excavations shall be made by open cut.
- B. Keep walls of the excavation vertical and, if required to protect safety of workmen, the general public, this or other work and structures, or excavation walls, sheet and brace excavation. Excavation for the structures shall be sufficient to provide a clearance between their outer surfaces and the face of the excavation, sheeting, or bracing, of not less than 2 feet. Retain materials encountered in the excavation, undermine the banks, weaken the overlying strata, or are otherwise rendered unstable by the excavation operation by sheeting, stabilizing, grouting or other approved methods.
- C. Excavation for the precast or prefabricated structures shall be carried to an elevation 1-foot lower than the proposed outside bottom of the structure to provide space for the select gravel backfill material. Prior to placing the select gravel backfill, the excavation shall be sounded, if not dewatered, using a rigid pole to indicate to the satisfaction of the Engineer that the excavation has been carried to the proper depth and is reasonably uniform over the area to be occupied by the structure.
- D. Carry down excavation for structures constructed or cast in place in dewatered excavations to bottom of structure where dewatering methods are such that a dry excavation bottom is exposed and naturally occurring material at this elevation leveled and left ready to receive construction. Replace material disturbed below the founding elevation in dewatered excavations with Class B concrete.
- E. Footings: Cast-in-place footing sides shall be formed immediately after excavation. Forming for footing sides is specified elsewhere.

### 3.04 FOUNDATION PREPARATION (FILLING, BACKFILLING AND EXCAVATION).

- A. Compact existing ground beneath the base slabs to a density of not less than 95 percent of its maximum density as determined by ASTM D-1557 for a depth of not less than 2 feet below bottom of concrete slabs. Remove any unsuitable foundation material and replace with suitable material.

- B. Buildings: After pre-compaction of the stripped building area, place approved fill material within the building foundation lines plus 6 foot margin in lifts of 12-inch maximum loose thickness, each lift compacted and fill brought to approximate underside of slab. Compact each lift to a minimum of 98 percent Modified Proctor 12 inches below the surface.
- C. Excavation for all building footings shall be made through precompacted pad to design elevations. Bottom of excavation shall be additionally compacted to 98% of Proctor Density 12-inches below the surface by portable vibratory sled type of compactors. Test compaction as specified.
- D. Building Slab Backfill: Place fill inside the building foundation walls in lifts of 6-inches maximum loose thickness, each lift compacted with vibratory portable compactors and fill brought to bottom of the slab. Add necessary water to each lift to bring moisture content to optimum levels and compacting to achieve a minimum of 95% of modified Proctor Density 6-inches below the surface.
- E. Form monolithic slab beams by excavating from the compacted fill material to grades and lines indicated on the drawings.
- F. Place all backfill around foundation slabs, walls, utility trenches, mechanical and plumbing pipes, etc., in layers of six inches maximum loose thickness and compact with portable plate compactors.
- G. Equipment Pads and Slabs on Grade: Cut, fill and compact subgrades for concrete slabs to required grade. Compact top 8-inches of concrete slab subgrade in cut sections and all fill material to a density of not less than 95 percent of its maximum density as determined by ASTM D-1557.
- H. Test compaction of all structural fill by a testing lab as specified.
- I. Vibratory compaction shall never be done on dry sandy material or when water table is within eighteen inches of the surface. Before start of vibratory compaction, the soils should either have natural moisture or applied water to bring the soils to optimum moisture content.
- J. Vibratory Roller: The Vibratory Roller shall be a self-propelled minimum two ton drum type vibratory roller. Submit technical specifications for review and approval to the Engineer.
- K. Cast-in-Place Structures Below Water Table
  - 2. Do not place backfill until the structure has been completed above the natural water table, is stable against hydrostatic uplift, exterior form work has been removed and any necessary patching, grouting, and waterproofing has been completed. Backfill shall be placed as specified in Subparagraph K-2. Do not commence backfilling until concrete and waterproofing to be covered has been inspected and approved.
  - 3. Selected material from the excavation may be used for backfilling around the structure. Trash shall not be allowed to accumulate in spaces to be backfilled. Place backfill around the structure in uniform layers of maximum 8" loose thickness compacting each layer to a minimum of 95 percent of maximum density. Carry backfilling to the finished grades shown on the Drawings.
- L. Precast Structures Below Water Table
  - 1. Gravel Base: The space between the proposed bottom of the structure, and the bottom of the excavation shall be backfilled with gravel and screeded level to receive the proposed structure. If the excavation is not dewatered, after placing the screeding, the backfill will be sounded with a rigid pole and attached 6-inch diameter foot piece to indicate, to the satisfaction of the Engineer, that the backfill has

been placed to the proper elevation, is level throughout, and is ready to receive the structure. This final sounding of the material shall immediately precede setting of the structure.

2. Remainder of Backfill: Selected material from the excavation shall be used for backfilling around the structure. Trash shall not be allowed to accumulate in spaces to be backfilled. Backfill around the structure shall be placed in uniform layers to the level of the water table. Above the water table, backfill material shall be placed in 8-inch layers and compacted to a minimum of 95 percent of maximum density as determined by AASHTRO Designation T 180. Backfilling shall be carried to the finished grades shown on the Drawings.

### 3.05 SITE GRADING AND FILLING OUTSIDE STRUCTURES

- A. Form exterior grade in accordance with drawings. Grade to slop surface away from building and pump station structures.
- B. Conform to Section 02211, Site Preparation and Grading.

### 3.06 TESTING

- A. All soil testing and earthwork monitoring shall be done by a testing company in conformance with Paragraph 1.02-A. Notify the Testing Lab in time to be on hand to make the tests required by these specifications. Testing lab shall inform the project superintendent his findings and designate areas requiring corrective work. Mail all test reports directly to Engineer, Structural Engineer and General Contractor.
- B. Optimum moisture content of fill material shall be as determined by Modified Proctor Method (ASTM D-1557). Conduct field densities to verify compaction in accordance with ASTM D-1556, ASTM D-2927 or ASTM D-2922.
- C. Retest compaction tests that fail to pass after additional compaction effort has been performed and until the specified minimum compaction density is achieved. Two additional tests shall be taken for each failed test. Retesting shall be paid by the Contractor.

3.07 TESTS

A. Field Density Tests for Each Structure

Stripped Area	1 Test/2000 S.F. (2 Min)
Fill Area	1 Test/2000 S.F./Each Layer (2 Min)
Bottom of Wall Footings	1 Test/50 L.F. (2 Min)

B. Optimum Moisture Content.

Existing Stripped Area (Proctor)	1 Test
Backfill Material Proctor	1 Test/500 C.Y./Source

END OF SECTION

02220-6

## SECTION 02225

### TRENCHING AND BACKFILLING

#### PART 1 GENERAL

##### 1.01 WORK INCLUDED

- A. Excavation of trenches for utilities and storm sewers.
- B. Compacted bed and compacted fill over utilities and storm sewers.
- C. Compaction requirements.

##### 1.02 REFERENCES

- A. ANSI/ASTM C33 – Concrete Aggregates.
- B. ASTM D698/AASHTO T-99 – Tests for Moisture-Density Relations of Soils and Soil-Aggregate Mixture Using 5.5 lb (2.49 kg.) Hammer and 12 inch (305 mm) Drop.
- C. ASTM D2922/AASHTO T-238 – Density of Soil and Soil Aggregate in Place By Nuclear Method (Shallow Depth).
- D. AWWA C600: Installation of Gray and Ductile Cast Iron Water Mains and Appurtenances.
- E. AASHTO M-145: Designation M-145 “Classification of Soils and Soil Aggregate Materials for Highway Construction Purposes.
- F. The Occupational Safety and Health Administration’s Excavation Safety Standards, 29 C.F.R.s.1926.650 Subpart P.

##### 1.03 PROTECTION

- A. Protect excavations by shoring, bracing, sheet piling, underpinning, or other methods required to prevent cave-in or loose soil from falling into excavation.
- B. Provide barricades, warning signs, and lights as required by law.
- C. Underpin adjacent structures which may be damaged by excavation work, including service utilities. All damaged structures shall be repaired at no additional cost to the Owner.
- D. Notify Engineer of unexpected subsurface conditions and discontinue work in affected area until notification to resume work.
- E. Grade excavation top perimeter to prevent surface water run off into excavation.

#### PART 2 PRODUCTS

##### 2.01 SELECT BED AND FILL MATERIALS

- A. Crushed Stone Bedding Material: Well graded, crushed, washed natural stone free of shale, clay, friable materials and debris. Graded in accordance with ASTM Designation C-33, Gradation 67.

- B. Select Fill: On site or imported non-cohesive, non-plastic material free of debris and gravel larger than one-half inch in diameter. Satisfactory trench backfill materials are defined as those soils complying with American Association of State Highway and Transportation Officials (AASHTO) Standard M-145 Soil Classification Groups A-1 and A-3.
- C. Common Fill: Reused or imported non-cohesive, non-plastic material, free of debris and rocks larger than six inches in diameter. Satisfactory trench backfill materials are defined as those soils complying with AASHTO Standard M-145 Soil Classification Groups A-1, A-2-4, A-2-5, and A-3.

## PART 3 EXECUTION

### 3.01 INSPECTION

- A. Verify approval of full or limited use of stockpiled fill.
- B. Verify areas to be backfilled are free of debris and water.

### 3.02 PREPARATION

- A. Identify required lines, levels, contours, and datum.
- B. When necessary, compact subgrade surfaces to density requirements for backfill material.

### 3.03 EXCAVATION

- A. Excavate subsoil required for utilities to the alignment and depth required.
- B. Cut trenches sufficiently wide to enable installation of utilities and allow inspection, a minimum of 24" plus the thickness of the pipe.
- C. All excavation shall be made by open cut unless otherwise indicated on drawings.
- D. Remove unsuitable subsoil, boulders, and rock.
- E. Open no more than 100 feet of trench ahead of pipe laying operations at one time unless a greater length of trench is approved by the Engineer.
- F. If sheeting is used, it may be removed provided removal can be accomplished without disturbing the bedding, pipe or alignment. Should Engineer determine the removal of sheeting will damage pipe, the sheeting shall be left in place. No additional compensation shall be allowed. If left in place, cut sheeting off at a level two feet above top of pipe and leave the remaining portion in place. Any damage to the pipe bedding, pipe, or alignment caused by removal of sheeting shall be cause for rejection of the affected portion of the Work.
- G. Remove organic material encountered below the level of the proposed pipe, manhole, pumping station or similar structure, such as roots, mulch, or other vegetable matter which in the opinion of the Engineer will result in unsatisfactory foundation conditions. Backfill the resulting excavation with crushed stone bedding material as specified.
- H. Where rock is encountered, excavate trench to a depth of six inches plus thickness of pipe below invert of pipe and 24 inches wider than pipe and backfill with crushed stone bedding material as specified. If rock is over-excavated, the over-excavation shall be backfilled with crushed stone bedding material as specified.
- I. Keep excavation free from water before pipe or structures are installed. Provide all pumps, piping, and other means for removing water from trenches and other parts of the work. Continue dewatering until backfill has

progressed to a depth to prevent flotation of pipe or structure, and backfill is above natural water table. Obtain County and South Florida Water Management District permits for dewatering.

### 3.04 BEDDING

- A. Properly bed all pipelines, conduits and appurtenances as shown on Drawings and as specified herein.
- B. Bedding for PVC Pipe: Place crushed stone bedding from a minimum of ¼ diameter of pipe below invert to springline of pipe.
- C. Bedding for Ductile Iron Pipe: Minimum bedding requirements shall be Type 2 as defined in AWWA Specification C-600. Additional requirements shall be required in accordance with thickness class of pipe being laid, depth of cover and soil conditions. When required, place crushed stone bedding from a minimum of ¼ diameter of pipe below invert up to 1/8 diameter of pipe.
- D. Bedding for Concrete Pipes: Well graded, crushed, washed natural stone free of shale, clay, friable materials and debris. Graded in accordance with ASTM Designation C-33, Gradation 67.

### 3.05 BACKFILLING

- A. Support pipe and conduit during placement and compaction of bedding fill.
- B. Backfill trenches to contours and elevations. Backfill systematically, as early as possible, to allow maximum time for natural settlement. Do not backfill over porous, wet, or spongy subgrade surfaces.
- C. Place and compact select fill material in continuous layers not exceeding 6-inches to a depth of 12-inches above top of pipe. Compaction shall be 95 percent of maximum density as determined by AASHTO T-99, Method C. Where pipe lies within a roadway, compaction shall be in continuous layers not exceeding 6-inches to bottom of stabilized subgrade. Compaction shall be 98 percent of maximum density as determined by AASHTO T-99, Method C. Compaction shall be by small portable plate compactor or other approved methods.
- D. Place and compact common fill material in continuous layers not exceeding 12 inches to 95 percent of maximum density as determined by AASHTO T-99, Method C. Compaction shall be by mechanical means or other approved methods.
- E. Contractor will dispose of all excess fill or any unusable material as directed by the Engineer, and will provide the City's Representative with delivery receipt tickets to confirm its proper disposal.

### 3.06 COMPACTION

- A. Compact materials at moisture content within  $\pm 2\%$  of the optimum to permit specified compaction.
- B. Add water or permit material to dry until optimum moisture content is obtained.
- C. Field test density of each compacted backfill lift in accordance with ASTM D-2922 prior to placement of succeeding lifts. Make at least one test per layer for each 300 foot length of trench. If less than 300 feet of trench is excavated in a day, make one test per lift for each day's length.
- D. Make one Proctor Test in accordance with AASHTO T-99 for each source of fill. If material from the excavation is used as backfill material, a test proctor will be taken from the best available location as determined by the testing lab. Upon completion of the backfill, an additional proctor will be taken from the actual material used and compared to the test proctor. If the actual proctor varies from the test proctor, the backfill will be retested.

- E. Testing laboratory shall be retained by Contractor and approved by Engineer. Contractor shall pay all costs for initial density test.
- F. Re-compact and retest trench backfill which does not meet minimum compaction requirement. Bear all additional cost for retests.
- G. If Contractor wishes to utilize hydraulic compaction as an alternate means for compacting trenches, Contractor shall retain the services of a testing laboratory, approved by the Engineer, who shall monitor compaction methods. Testing laboratory shall certify that compaction results achieved conform to the standards specified herein. Testing laboratory shall submit certification and all test results, signed and sealed by a professional Engineer registered in the State of Florida. All costs associated with obtaining testing laboratory shall be paid for by Contractor at no additional cost to Owner.

END OF SECTION

02225-4



## SECTION 02235

### ASPHALTIC PAVING, PRIME, BASE AND STABILIZED SUBGRADE

#### PART 1 GENERAL

##### 1.01 WORK INCLUDED

- A. Stabilized Subgrade
- B. Crushed Limerock Base
- C. Concrete Base
- D. Prime and Wearing Surface

##### 1.02 REFERENCES

- A. Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction, Latest Edition.
- B. ASTM C94 – Ready Mix Concrete

#### PART 2 PRODUCTS

##### 2.01 MATERIALS

- A. Stabilized Subgrade: Conform to Section 914 of FDOT Standard Specifications.
- B. Crushed Limerock Base: Conform to Section 914 of FDOT Standard Specifications.
- C. Prime: Cut-back Asphalt Grade RC-70 according to Section 300 of FDOT Standard Specifications.
- D. Wearing Surface: Asphaltic concrete of the type, compacted thickness, and width according to Sections 320, 330 and 331 through 333 of FDOT Standard Specifications.
- E. Concrete: Class “B”, 4000 psi compressive strength.

#### PART 3 EXECUTION

##### 3.01 INSPECTION

- A. During construction, a field inspection of each phase will be made by Engineer. It shall be Contractor’s responsibility to notify Engineer when paving is ready for inspection.

##### 3.02 CONSTRUCTION

- A. Stabilized Subgrade: Stabilization of subgrade and shoulders shall be in accordance with Section 160 of FDOT Standard Specifications. Stabilize subgrade and shoulders to a depth of 12 inches and to width as shown on the Drawings and shall have a minimum Limerock Bearing Ratio (LBR) of 40.

Compact subgrade to at least 98% of maximum density as determined by AASHTO T-180.

- B. Limerock Base: Construct in accordance with Section 200 of FDOT Standard Specification. Base course shall have a compacted thickness and width as shown on the Drawings. Compact base course to at least 98% of maximum density as determined by AASHTO T-180.
- C. Concrete Base: As shown on the Drawings. Concrete shall be furnished by a well-known, reputable ready-mix concrete company. Mixing, transporting and placing of concrete shall conform to ASTM C94. Curing shall be performed in accordance with standard practice to prevent excessive shrinkage or cracking.
- D. Prime: Prime base in accordance with Section 300 of FDOT Standard Specifications. Clean base surface until free of objectionable foreign material. When the prime is applied adjacent to curb and gutter or any other concrete surface, protect such surface by means of heavy paper or other approved material. Prime base at the rate of not less than 0.1 gallons per square yard and not more than 0.2 gallons per square yard.
- E. Wearing Surface: Construct wearing surface according to Sections 320, 330 and 331 through 333 of FDOT Standard Specifications. The density, after final compaction, shall not be less than 98% of the control strip compacted density of the mixture. Provide certification from an independent testing laboratory that design mix meets requirements of applicable FDOT Standard Specifications. In all inaccessible places such as adjacent to curb, gutters, manholes, etc. the required compactions shall be secured by a tamper. Depression, honeycombs and high spots of any unbonded material after rolling shall be corrected as directed by Engineer.
- F. Timing: No construction of asphaltic concrete pavement shall take place until such time that all underground utility lines have been tested and certified they meet local and state requirements.
- G. Backfill all open cuts prior to completion of each construction day. No open cuts shall remain open overnight. Open cuts and restoration shall be performed Monday through Friday. No work other than routine maintenance shall be performed Saturday, Sunday or holidays without approval of Engineer.
- H. A minimum of 14 feet of roadway must be maintained at all times at all crossings for access by the resident and emergency vehicles.
- I. Adjust all manholes, valve boxes, drainage structures or other appurtenances situated within limits of resurfacing to bring finish elevation up to finished grade.
- J. Strict adherence to proper maintenance and protection of traffic during Contractor activities, including any required "detours" must be accomplished in accord with the FDOT Manual on Traffic Control and Safe Practices, state and local regulations and permits and e properly coordinated by the Contractor.
- K. A minimum of 48 hours written notice shall be provided to Engineer prior to beginning of any paving operation. The Contractor will be expected to schedule major resurfacing after normal weekday hours.
- L. No pavement shall be placed without the presence of Engineer or his authorized representative.

### 3.03 TESTING

- A. Wearing Surface: Contractor shall furnish and bear the cost of holes to make spot check thickness measurements of the compacted wearing surface. Depth of each layer shall be checked at intervals not to exceed 200 feet. Any deficiencies in excess o the allowable deviation shall be corrected as per FDOT Specifications.
- B. Stabilized Subgrade and Limerock Base: Provide and bear costs for inspections, tests, and approvals of stabilized subgrade and limerock base. Provide one Limerock Bearing Ratio (LBR) test for the first 0-1000 square yards of stabilized subgrade and limerock base and one LBR test for each additional 1000 square yards or any fraction thereof. In addition, provide one in-place density and thickness test for the first 0-500 square yards of stabilized subgrade and limerock base and one test for each additional 500 square yards according to AASHTO T-180 or any fraction thereof.

END OF SECTION

02235-3

## SECTION 02236

### SIGNING AND MARKING

#### PART 1 GENERAL

##### 1.01 DESCRIPTION

- A. Work Included: Furnish all labor, materials, equipment and methods to install, repair, and place into operation traffic signs, street signs, pavement marking and striping, and reflective pavement markers in accordance with the Drawings and Specifications and/or as required to return the roadway within the project limits back to existing functional conditions.

#### PART 2 PRODUCTS

##### 2.01 MATERIALS

- A. Traffic Signs, Street Signs, Paint Striping

- 1. Traffic paint and marking materials: Conform to requirements of the following sections of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction:

Section

- |  |        |
|--|--------|
| a. Traffic Paint                                   | 971-12 |
| b. Glass Spheres<br>(for Reflective Traffic Paint) | 971-14 |
| c. Thermoplastic Traffic Stripes                   | 711    |

- 2. Traffic and information signs: Conform to requirements of Section 700 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction.

- B. Reflective Pavement Markers

- 1. Reflective pavement markers: As specified in Section 706 of FDOT Standard Specifications and have overall dimensions of 4" x 4" x 79" with a 30 degree reflective face. Adhesive shall be pressure sensitive 100% solids .120" thick. Minimum application pressure shall be 60 p.s.i. Minimum sheer stress shall exceed 10 p.s.i. at 70 degrees F.

#### PART 3 EXECUTION

##### 3.01 INSTALLATION

- A. Roadway traffic markings, striping and site pavement marking for traffic regulation and parking: Conform to requirements of Sections 710 and 711 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction as amended and Traffic Operations Standard Index Nos. 17346, 17352 and 17355.
- B. Sign work: Comply with applicable portions of Section 700 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction and Traffic Operations Standard Index No. 11864.

- C. Install reflective pavement markers in accordance with manufacturer's recommendations at the locations and dimensions shown on the Drawings and at fire hydrant locations. Pavement markers at fire hydrants shall be blue-blue.
- D. Contractor shall give written notification to Engineer a minimum of 48 hours prior to beginning any roadway striping work.

END OF SECTION

02236-2

## SECTION 02720

### STORM SEWERS AND STRUCTURES

#### PART 1 GENERAL

- 1.01 Work Included: All labor, materials, equipment and methods to construct, repair, and place into operation a storm drainage system including excavation, bedding, cast-in-place concrete formwork, and backfill as shown in the Civil Drawings and/or as specified and/or as directed in the field.
- 1.02 References: Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction, latest Edition.

#### PART 2 MATERIALS

- 2.01 Reinforced Concrete Pipe: ASTM C-76, Class III with Wall Type B reinforcement; inside nominal diameter as shown on Drawings; bell and spigot end joints. Pipe joints shall be rubber gasket joints conforming to Sections 941 and 942 of FDOT Standard Specifications. The use of lifting holes in circular pipe 30" in diameter and less shall not be allowed.
- 2.02 Bituminous-coated Corrugated Metal Pipe: Meet requirements of Section 943 or Section 945 of FDOT Standard Specifications.
- 2.03 Perforated Polyvinyl Chloride (PVC) Pipe: Conform to ASTM D-2729.
- 2.04 Mortar used for constructing and plastering manholes, drop inlets and junction boxes: In accordance with ASTM Specifications Serial Designation C-270. Contractor shall have option of using either a portland cement/hydrated lime mixture or a portland cement mixture with masonry cement added for improved workability; however, the same materials must be used throughout the project. Mortar materials shall be proportioned by volume and shall be as follows:
1. One (1) part Type I Portland Cement – ASTM C-150
  2. Three (3) parts Aggregate (sand) – ASTM C-144
  3. The addition of masonry cement (ASTM C-91) will be permitted to improve workability of mortar.
- 2.05 Reinforcing Bars: Deformed reinforcing steel conforming to Specifications for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement (ASTM A-615), for concrete reinforcement. All bars shall be lapped and placed in accordance with ACI requirements and specifications.

#### PART 3 INSTALLATION

##### 3.01 HANDLING

- A. Load and unload pipe and accessories by lifting with hoists or skidding in a manner that will avoid shock or damage. Under no circumstances shall such materials be dropped. Pipe handled on skidways shall not be skidded or rolled against pipe already on the ground.
- B. In distributing material at the site of the work, unload each piece near where it shall be laid in the trench.

##### 3.02 LAYING PIPE

- A. Complete trenching and backfilling as specified. Inspect sewers when line is completed and backfill has been placed to a depth of one foot over the pipe. Complete backfill only after approval of each section has been given for line and grade.
- B. Remove and relay faulty sections of line rejected by Engineer.
- C. Exercise care to insure pipe is carefully centered so laid storm sewer will have a uniform invert.
- D. The laying of pipe in the finished trench shall be started at the lowest point of the trench and proceed upgrade. When bell and spigot pipe is used, the bell shall be laid upgrade. If tongue and groove pipe is used, the grooved end shall be laid upgrade.
- E. Keep pipe joints clean at all times, and use no pipe in the work which does not conform to specifications.
- F. Place a suitable stopper in end of pipe last laid at all times when pipe-laying operations are not in process (including lunch hours), to prevent water, mud or other foreign materials from entering the pipe. Insure all construction conforms to Section 430 of FDOT Standard Specifications.

### 3.03 JOINTING PIPE

- A. Joint all pipe by rubber gasket O-ring joints installed in strict accordance with recommendations of pipe manufacturer.
- B. Corrugated metal pipe joints shall consist of bolted galvanized metal connecting band installed with neoprene gasket.
- C. Joints shall be designed to limit movement due to expansion, contraction and normal settlement.

### 3.04 CATCH BASINS, STORM SEWER MANHOLES AND CONCRETE HEADWALLS

- A. Construct junction boxes, storm sewer manholes, and concrete headwall at location and to depth indicated on drawings and in accordance with details shown on Civil Plans. Excavate and backfill in accordance with applicable sections of specifications. Concrete for the catch basins, storm sewer manholes and concrete headwalls, shall develop a compressive strength of 3000 psi in 28 days. Seal joints between walls and incoming and outgoing pipes with portland cement mortar to form a watertight joint. Cut off all pipes with junction boxes, storm sewer manholes, and concrete headwalls flush with the face of the structure and grout broken ends of these pipes with portland cement mortar to a smooth uniform covering with no steel exposed. All structures shall conform to Sections 400, 415 and 425 of FDOT Standard Specifications.
- B. Construct grated inlets and junction boxes to elevations and dimensions shown on the Drawings. Include any reasonable adjustment and realignment of the grate necessary, or installation on inlet grates. Secure frames in mortar struck smooth inside and out.

### 3.05 CAST –IN-PLACE CONCRETE FORMWORK

- A. Formwork materials will be wood, plywood or other materials that will not adversely affect the concrete and will facilitate placement of concrete to the shape, form line, and grade indicated. Plywood will be new, waterproof, synthetic bonded, exterior type, manufactured especially for concrete formwork and shall conform to Plyform Class I, B-B EXT, of PS-1, and shall be edge sealed. Lumber will be construction grade Douglas Fir, or Southern Yellow Pine
- B. Formwork will conform to the dimensions as shown on the Drawings and shall be substantial and sufficiently tight to prevent leakage. Forms shall be properly braced or tied so as to maintain position and shape. Plumb and string lines shall be installed before concrete placement and shall be maintained during placement. Such lines shall be used by CONTRACTOR'S personnel and shall be in sufficient number and

properly installed. During concrete placement, the CONTRACTOR shall continually monitor plumb and string line form positions and immediately correct any deficiencies.

- C. Contractor may reuse forms only if in good condition and only if acceptable to the CITY'S representative. Reused forms shall be thoroughly cleaned and may require light sanding between uses to obtain a uniform surface texture on all exposed concrete surfaces. Forms shall not be reused if they have developed defects that would affect the surface texture of exposed concrete. Exposed concrete surfaces are defined as surfaces, which are permanently exposed to view.
- D. Form Construction: All vertical surfaces of concrete members shall be formed, except where placement of the concrete against the ground is indicated. Not less than 1-inch of concrete shall be added to the indicated thickness of a concrete member, where concrete is permitted to be placed against trimmed ground, in lieu of forms.
- E. Form Tolerances: Acceptable variations from plumb shall not exceed ¼ inch in any 10 foot (10') length, non cumulative and there shall be no offsets or visible waviness in the finished surface. All other tolerances shall per allowed by ACI 117- Standard Tolerances for Concrete Construction .

### 3.06 IRON CASTINGS

- A Casting shall conform to latest revision of the ASTM Specifications for Class 30 Grey Iron. They shall be cast in a closed mold with controlled sand and be true to pattern. Casting shall be free from blow holes and porosity, well cleaned, with fine and sharp edges ground smooth. All circular frames and covers shall be machines (on lathe) bearing surfaces to prevent rattling under traffic. All manhole covers shall have "Storm Sewer" cast thereon. Casting shall be as manufactured by USF, with numbers as shown on the Drawings, or equal. All square and rectangular frames, covers and grates shall be individually fitted as sets and installed as sets in the field.
- B Manufacturer shall provide Letter of Guarantee for a period of 15 years. Upon request of Engineer, manufacturers shall also furnish an independent testing laboratory's report of castings supplied. Frame and cover surfaces shall be machines and any tendency to rattle, as determined by tests before or after installation, will be sufficient cause for rejection of the frame and cover.

END OF SECTION

2720-3



## SECTION 02725

### CURBS, GUTTERS AND SIDEWALKS

#### PART 1 GENERAL

- 1.01 Work Included: Furnish all labor, materials, equipment and methods to construct or repair and place into operation all concrete curbs, gutters, sidewalks, medians, aprons, etc. as shown on the Civil Drawings and/or as specified and/or as directed in the field.

#### PART 2 MATERIALS

- 2.01 All concrete and concrete work shall conform to the following unless otherwise noted on the Drawings. All concrete specified in this Section shall attain a minimum compressive strength of 3000 psi in 28 days.
- A. Concrete Mix Materials: Coarse aggregate shall be hard, clean, washed gravel or crushed stone. Maximum aggregate size shall not be larger than 1 inch nor smaller than ½ inch equivalent diameter, free from injurious amount of minerals, organic substances, acids or alkalies. Cement shall be Type 1, domestic Portland cement, conforming to ASTM C-150.
  - B. Concrete Admixtures: Air-entrainment admixtures in concrete are permitted in accordance with manufacturers specifications provided the specified strength and quality are maintained and unless the admixture appears to be causing abnormal field results, and provided that the total entrained air content does not exceed 5.0 percent. No other admixture of any type will be permitted without written approval of Engineer.
  - C. Reinforcing Steel: Reinforcing bars shall be intermediate grade, new billet-steel deformed bars free of loose rust, scale, dirt or oil, and shall conform to ASTM A-615. Welded wire fabric for concrete reinforcement shall conform to ASTM A-185. All reinforcement steel shall be placed, spliced, lapped, etc., in accordance with the ACI Standard 318.
  - D. Transit or Ready-Mixed Concrete: May be used provided it conforms to ASTM C-94 and specifications herein stated and the central plant producing the concrete, batching, mixing and transportation equipment is, in the opinion of the Engineer, suitable for production and transportation of specified concrete.

#### PART 3 EXECUTION

- 3.01 Construction Methods: Forms shall be of sufficient strength to resist pressure of the concrete without springing. Do not remove bottom forms within twenty-four hours after concrete has been placed. Do not remove side or top forms within twelve hours after concrete has been placed. Upon removal of forms, correct minor defects with a rich mix cement mortar. Finish curbs, gutters, walks or medians until a smooth surface is attained. Final finish shall be a light broom finish. When completed cure concrete as specified.
- 3.02 Placing of Concrete: Deposit concrete in clean, wet forms and as nearly as practicable in its final position to avoid segregation. Place concrete at a rate so concrete is at all times plastic and flows readily into the space between the bars. Concrete placement shall be continuous operation until the panel or section is completed. Vibrate all structural concrete. Concrete shall be deposited on the subgrade or in the forms from a chute or drip pipe without a free fall. Placing by means of pumping may be allowed, contingent upon the adequacy of the equipment for this particular work. Operation of pumping shall insure a continuous stream of concrete shall be regulated so that the pressure caused by wet concrete shall not exceed that used in the design of the forms. After the concrete has taken its initial set, exercise care to avoid jarring forms or placing any strain on ends of projecting reinforcement.
- 3.03 Machine-Laying: Will be permitted, providing all quality conditions of conventional construction are met.

3.04 Curing: As soon as practicable after finishing all concrete, cover with burlap or polyethylene sheeting and keep moist for a period of 7 days; or, apply an approved membrane curing compound at Contractor's option. Where membrane-curing compound is used, allow no walking or other traffic over the slab for seventy-two hours after application unless surface is protected by burlap or heavy building paper.

### 3.05 JOINTS

- A. Construction Joints: Locate joints not shown or specified so as to least impair strength and appearance of the work. Place concrete at such a rate so surfaces of concrete which have not been carried to joint levels will not have attained initial set before additional concrete is placed thereon.
- B. Contraction Joints: Construct curbs, curb-and-gutters, and valley gutters with contraction joints at intervals of 10 feet except where shorter intervals are required for closures, but no joint shall be constructed at intervals of less than 4 feet. Construct sidewalks and concrete medians with contraction joints at intervals equal to the width of the walk or median respectively unless otherwise noted on the Drawings. Contraction joints may be of the open type or sawed. Construction of contraction joints shall conform to Sections 520 and 522 of FDOT Standard Specifications.
- C. Expansion Joints: Construct curbs, curb-and-gutters, and valley gutters with expansion joints at all inlets, all radius points, all points where operations cease for any considerable time and at intervals of not more than 100 feet. Construct walks and concrete medians with expansion joints at points of walk or median termination against any unyielding surface and at intervals not to exceed 90 feet. Construct expansion joints with PVC slips encasing the reinforcing bars. Expansion joint material shall be one-half inch bituminous impregnated expansion joint material. Construction of expansion joints shall conform to Sections 520 and 522 of FDOT Standard Specifications.
- D. Other: Where the Drawings call for sealed joints between walks or concrete medians and curbs, construct such joints in conformance with Sections 520 and 522 of FDOT Standard Specifications.

3.06 Contractor's Responsibilities: Reject all delivered concrete and finishes not meeting these specifications. Secure laboratory tests or reports if such tests or reports are requested by Engineer.

### 3.07 TESTING

- A. Excavation shall be to the required depth, and supporting earth, base, or subgrade shall be compacted. When Drawings call for a stabilized subgrade under curb or gutter, the subgrade shall be stabilized, and tested if required, as set forth elsewhere in these Specifications and as indicated on the Drawings. When the Drawings call for a soil-cement base, compact subgrade supporting curb or gutter by watering, rolling or tamping to ninety-five percent (95%) of maximum density as determined by AASHTO T-180. Compact subgrades for walks, and concrete medians to a firm, even surface, by means of rolling, watering or tamping.
- B. After concrete has set sufficiently, but not later than three days after placement of concrete, backfill and compact spaces in front and back with suitable material. When street bases are to be constructed adjacent to curbs, gutters, etc., the curb, gutter, etc., shall cure for a period of not less than three days before any base material is placed against it.

END OF SECTION

02725-3

## SECTION 02936

### SEEDING

#### PART 1 GENERAL

##### 1.01 WORK INCLUDED

- A. Preparation of soil.
- B. Fertilizing.
- C. Seeding.
- D. Mulching.
- E. Maintenance.

##### 1.02 REFERENCES

- A. FS O-F-241 – Fertilizers, Mixed, Commercial.

##### 1.03 DEFINITIONS

- A. Weeds: Includes Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

##### 1.04 REGULATORY REQUIREMENTS

- A. Comply with regulatory agencies for fertilizer, seed and herbicide composition.

##### 1.05 QUALITY ASSURANCE

- A. Provide seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.

##### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of Section 01600, Material and Equipment.
- B. Store and protect products under provisions of Section 01600, Material and Equipment.
- C. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.
- D. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

##### 1.07 MAINTENANCE SERVICE

- A. Maintain seeded areas until all work is accepted by the Owner.

#### PART 2 PRODUCTS

##### 2.01 SEED MIXTURE

- A. During the period between February 15 and October 15 the seed mixture shall be 175 lbs. Argentina Bahia per acre and 45 lbs. Hulled Bermuda per acre.
- B. During the period between October 15 and February 15 the seed mixture shall be 175 lbs. Argentina Bahia per acre, 45 lbs. Hulled Bermuda per acre and 45 lbs Winter Rye per acre.
- C. All seed shall meet the requirements or the State Department of Agriculture and Consumer Services and all applicable Federal, State and Local laws.

## 2.02 SOIL MATERIALS

- A. Topsoil: Excavated from site and free of weeds.

## 2.03 ACCESSORIES

- A. Mulching Material: Oat, rye or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Coastal Bermuda, or Bahia grass are acceptable.
- B. Manufactured Mulch: Cellulose-fiber or wood-pulp mulch shall be products commercially available for such use.
- C. Asphalt Binder: Asphalt binder material shall conform to the requirements of AASHTO M 140, Type SS-1, or RS-1, as appropriate.
- D. Fertilizer: Commercial 8-8-8.
- E. Water: Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.

## PART 3 EXECUTION

### 3.01 INSPECTION

- A. Verify that prepared soil base is ready to receive the work of this Section.
- B. Beginning of installation means acceptance of existing site conditions.

### 3.02 PREPARATION OF SOIL

- A. Prepare soil to eliminate uneven areas and low spots. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.
- B. Remove foreign materials, weeds, and undesirable plants and their roots. Remove contaminated subsoil.
- C. Scarify soil to a depth of 8 inches. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted subsoil.
- D. Grade to eliminate rough, low, or soft areas, and to ensure positive drainage.

### 3.03 FERTILIZING

- A. Apply fertilizer in accordance with manufacturer's instructions.
- B. Apply after smooth raking of soil and prior to roller compaction.

- C. Do not apply fertilizer at same time or with same machine as will be used to apply seed.
- D. Lightly water to aid the dissipation of fertilizer.

#### 3.04 SEEDING

- A. Apply seed uniformly at a rate of 50 lbs per acre. Rake in lightly. Do not seed area in excess of that which can be mulched on same day.
- B. Do not sow immediately following rain, when ground is too dry, or during windy periods.
- C. Immediately following seeding, apply mulch to a thickness of two inches. Maintain clear of shrubs and trees.
- D. Apply water with a fine spray immediately after each area as been mulched. Saturate to 4 inches of soil.

#### 3.05 SEED PROTECTION

- A. Cover seeded slopes where grade is 4 inches per foot or greater with erosion fabric. Roll fabric onto slopes without stretching or pulling.
- B. Lay fabric smoothly on surface, bury top end of each section in 6-inch deep excavated topsoil trench. Provide 12-inch overlap of adjacent rolls. Backfill trench and rake smooth, level with adjacent soil.
- C. Secure outside edges and overlaps at 36-inch intervals with stakes.
- D. Lightly dress slopes with topsoil to ensure close contact between fabric and soil.
- E. At sides of ditches, lay fabric laps in direction of water flow. Lap ends and edges minimum 6 inches.

#### 3.06 MULCHING

- A. Hold mulch in place by light disking, a very thin covering of topsoil, asphalt binder, or other adhesive material approved by the Engineer. Where mulches have been secured by the asphalt binder method, it will not be permissible to walk on the slopes after the binder has been applied. In application of asphalt binder material, take every precaution to guard against damaging or disfiguring structures or property on or adjacent to the areas worked. Any damage resulting from operations will be repaired at no cost to the Owner.
- B. If binder is ordered, spray all mulched surfaces with asphalt binder material so surface has a uniform appearance. Binder shall be uniformly applied to mulch at rate of approximately 8.0 gallons per 1,000 square feet, with a minimum of 6.0 gallons and a maximum of 10.0 gallons per 1,000 square feet depending on the type of mulch and the effectiveness of the binder securing it. Bituminous binder material may be sprayed on the mulched slop areas from either the top or the bottom of the slope. Use pump and air compressor of adequate capacity to insure uniform distribution of the bituminous material.

#### 3.07 MAINTENANCE

- A. Maintain seeded area until final acceptance of work under the Contract.
- B. Mow grass at regular intervals to maintain at a maximum height of 2-1/2 inches. Neatly trim edges and hand clip where necessary.
- C. Immediately remove clippings after mowing and trimming.
- D. Water daily to prevent grass and soil from drying out.

- E. Roll surface to remove minor depressions or irregularities.
- F. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.
- G. Immediately reseed areas which show bare spots.
- H. Protect seeded areas with warning signs during maintenance period.

END OF SECTION

02936-4

## SECTION 02938

### SODDING

#### PART 1 GENERAL

##### 1.01 WORK INCLUDED

- A. Preparation of subsoil
- B. Placing topsoil.
- C. Fertilizing.
- D. Sod installation.
- E. Maintenance.

##### 1.02 REFERENCES

- A. ASPA (American Sod Producers Association) – Guideline Specifications to Sodding.
- B. FS O-F-241 – Fertilizers, Mixed, Commercial.
- C. Applicable portions of the City of Naples Fertilizer Ordinance 08-11972

##### 1.03 DEFINITIONS

- A. Weeds: Includes Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

##### 1.04 QUALITY ASSURANCE

- A. Sod Producer: Company specializing in sod production and harvesting with minimum five years experience, and certified by the State of Florida.
- B. Installer: Company approved by the sod producer.
- C. Sod: Minimum age of 18 months, with root development that will support its own weight, without tearing, when suspended vertically by holding the upper two corners.
- D. Submit sod certification for grass species and location of sod source.

##### 1.05 REGULATORY REQUIREMENTS

- A. Comply with regulatory agencies for fertilizer and herbicide composition.
- B. Applicable portions of the City of Naples Fertilizer Ordinance 08-11972

##### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of Section 01600, Material and Equipment.

- B. Store and protect products under provisions of Section 01600, Material and Equipment.
- C. Deliver sod on pallets. Protect exposed roots from dehydration.
- D. Do not deliver more sod than can be laid within 24 hours.

#### 1.07 MAINTENANCE SERVICE

- A. Maintain installed sod until Owner has accepted all work.

### PART 2 PRODUCTS

#### 2.01 MATERIALS

- A. Sod: Nursery grown grade; cultivated grass sod; type indicated below; with strong fibrous root system, free of stones, burned or bare spots. Sod shall be as shown on plans.
- B. Topsoil: Excavated from site and free of weeds.
- C. Fertilizer: As recommended by sod producer.
- D. Water: Clean, fresh, and free of substances or matter which could inhibit vigorous growth of grass.

#### 2.02 ACCESSORIES

- A. Wood Pegs: Softwood; sufficient size and length to ensure anchorage of sod on slope.
- B. Wire Mesh: Interwoven hexagonal metal wire mesh of 2 size.

#### 2.03 HARVESTING SOD

- A. Machine cut sod and load on pallets.
- B. Cut sod in area not exceeding one sq yd with minimum ½ inch topsoil base.

### PART 3 EXECUTION

#### 3.01 INSPECTION

- A. Verify that prepared soil base is ready to receive the work of this Section
- B. Beginning of installation means acceptance of existing site conditions.

#### 3.02 PREPARATION OF SUBSOIL

- A. Prepare subsoil to eliminate uneven areas and low spots. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.
- B. Remove foreign materials and undesirable plants and their roots. Do not bury foreign material beneath areas to be sodded. Remove contaminated subsoil.
- C. Scarify subsoil to a depth of 4 inches where topsoil is to be placed. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted subsoil.

#### 3.03 PLACING TOPSOIL



- A. Spread topsoil to a minimum depth of 2 inches over area to be sodded.
- B. Place topsoil during dry weather and on dry, unfrozen subgrade.
- C. Remove vegetable matter and foreign non-organic material while spreading.
- D. Grade to eliminate rough, low, or soft areas, and to ensure positive drainage.

#### 3.04 FERTILIZING

- A. Apply fertilizer in accordance with manufacturer's instructions.
- B. Apply after smooth raking of topsoil and prior to installation of sod.
- C. Apply fertilizer no more than 48 hours before laying sod.
- D. Mix thoroughly into upper 2 inches of topsoil.
- E. Lightly water to aid the dissipation of fertilizer.

#### 3.05 LAYING SOD

- A. Moisten prepared surface immediately prior to laying sod.
- B. Lay sod within 24 hours after harvesting to prevent deterioration.
- C. Lay sod tight with no open joints visible, and no overlapping; stagger end joints 12 inches minimum. Do not stretch or overlap sod pieces.
- D. Lay smooth. Align with adjoining grass areas. Place top elevation of sod ½ inch below adjoining paving or curbs.
- E. On slopes 6 inches per foot and steeper, lay sod perpendicular to slope and secure every row with wooden pegs at maximum 2 feet on center. Drive pegs flush with soil portion of sod.
- F. Prior to placing sod on slopes exceeding 8 inches per foot or where indicated, place wire mesh over topsoil. Securely anchor sod in place over wire mesh and topsoil with wood pegs sunk firmly into the ground.
- G. Water sodded areas immediately after installation. Saturate sod to 4 inches of soil.
- H. After sod and soil have dried, roll sodded areas to ensure good bond between sod and soil and to remove minor depressions and irregularities. Roll sodded areas with roller not exceeding 150 lbs per foot of roller width.

#### 3.06 MAINTENANCE

- A. Mow grass at regular intervals to maintain at a maximum height of 2-1/2 inches.
- B. Neatly trim edges and hand clip where necessary.
- C. Immediately remove clippings after mowing and trimming.
- D. Water to prevent grass and soil from drying out.

- E. Roll surface to remove minor depressions or irregularities.
- F. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.
- G. Immediately replace sod to areas which show deterioration or bare spots.
- H. Protect sodded areas with warning signs during maintenance period.

END OF SECTION

02938-3

END OF EXHIBIT A

**EXHIBIT B**

**BASIS OF COMPENSATION**

As consideration for providing the Services as set forth in the Agreement, the CITY agrees to pay, and the CONTRACTOR agrees to accept payment on a time and reimbursement cost basis [or other basis] as follows [or in Exhibit B-1, which is attached and made part of this Agreement]:

**EXHIBIT A-1**

<b>BID FORM - Area #1</b>						
<b>BASIN V STORMWATER IMPROVEMENT PROJECT ---- Improvements 17A, 3B, 4B, 16B</b>						
<b>ITEM #</b>	<b>FDOT REF.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QUANTITY</b>	<b>UNIT COST</b>	<b>SUBTOTAL</b>
1	101-1	Mobilization	LS	1	\$16,450.00	\$ 16,450.00
2	101-1-1	Provide/Maintain As-Built Survey Plans	LS	1	\$3,850.00	\$ 3,850.00
3	101-1-2	Provide Construction Survey Layout (GR-17)	LS	1	\$6,710.00	\$ 6,710.00
4	102-1	Maintenance of Traffic	LS	1	\$5,450.00	\$ 5,450.00
5	104-13-1	Stormwater Pollution Prevention, Erosion Control (104-10-1)	LS	1	\$5,100.00	\$ 5,100.00
6		Permitting & Monitoring (Dewatering Permit, Collier County ROW, NPDES, Hydraulic Conductivity Tests, GR-19, GR-20)	LS	1	\$1,000.00	\$ -
7	1000-5 to 8	Utility Company Coordination	LS	1	\$300.00	\$ 300.00
8	See Des-1	Demolition & Removal (Work within ROW)	LS	1	\$10,220.00	\$ 10,220.00
9	See Des-2	Demolition & Removal (Work within Easements)	LF	300	\$15.00	\$ 4,500.00
10	See Des-3	Swales (excavation, regrading, dressing, sod)	SY	7,460	\$2.95	\$ 22,007.00
11	See Des-4	Hardscape Repairs & Replacement (mailboxes, irrigation systems, fences, columns, etc.)	LS	1	\$7,350.00	\$ 7,350.00
12	520-1-10	Concrete Curbing (Valley, F, D, etc.)	LF	50	\$25.00	\$ 1,250.00
13	522-1	Replace Asphalt Driveway (2" asphalt w/ compacted base)	SY	45	\$28.00	\$ 1,260.00
14	522-1	Replace Concrete Driveway (6" thick w/ fibermesh)	SY	630	\$27.00	\$ 17,010.00
15		Replace Brick Paver Driveway	SY	495	\$18.00	\$ 8,910.00
16		Replace Gravel or Shell or Stone Driveway	SY	135	\$2.00	\$ 270.00
17	522-1	Replace Concrete Sidewalk (4" thick w/ fibermesh)	SY	14	\$22.50	\$ 315.00
18	See Des-5	Landscaping Allowance				\$ 15,000.00
19	110-4	Sawcut Pavement	LF	1,250	\$0.50	\$ 625.00
20		Furnish & Install 15" RCP-CIII	LF	147	\$22.00	\$ 3,234.00
21	430	Furnish & Install 18" RCP-CIII	LF	1,602	\$26.00	\$ 41,652.00
22	430	Furnish & Install 24" RCP-CIII	LF	1,151	\$34.00	\$ 39,134.00
23	430	Furnish & Install 30" RCP-CIII	LF	620	\$46.00	\$ 28,520.00
24	430	Furnish & Install 36" RCP-CIII	LF	35	\$58.00	\$ 2,030.00
25		Furnish & Install 42" RCP-CIII	LF	137	\$73.00	\$ 10,001.00
26		Furnish & Install 29" X 45" ERCP-CIII	LF	143	\$74.00	\$ 10,582.00
27	400-1-2	Furnish & Install 24" Headwall	EA	1	\$1,290.00	\$ 1,290.00
28	273	Furnish & Install 42" Mitered End Section	EA	2	\$1,940.00	\$ 3,880.00
29	273	Furnish & Install 29" X 45" ERCP Mitered End Section	EA	1	\$1,930.00	\$ 1,930.00
30	273	Furnish & Install 42" Mitered End Section	EA	1	\$1,940.00	\$ 1,940.00
31		Catch Basin Type C Inlet With Alt. B Structure Bottom	EA	1	\$1,970.00	\$ 1,970.00
32	425-2-71	Catch Basin Type C Inlet	EA	20	\$1,120.00	\$ 22,400.00
33	425-1-321	Catch Basin Type E Inlet	EA	7	\$1,450.00	\$ 10,150.00
34	331-2-A	Furnish & Install Asphalt Pavement & Road Bedding	SY	477	\$24.00	\$ 11,448.00
35	711-1	Furnish & Install Pavement Markings	LS	1	\$1,000.00	\$ 1,000.00
36	1000-5	Sanitary Sewer Conflict Gravity Line Replacement (10")	EA	1	\$3,520.00	\$ 3,520.00
37	1000-6	Water Main Conflict Line Deflection	EA	8	\$2,772.00	\$ 22,176.00
38	500	Furnish & Install 6-inch Rip Rap Embankment W/ Filter Fabric	CY	17	\$57.00	\$ 969.00
39	See Des-6	Maximum Change Allowance - Unforeseen Conditions				\$ 80,000.00
<b>BID TOTAL</b>						<b>\$ 425,403.00</b>

BID FORM - Area #3						
BASIN V STORMWATER IMPROVEMENT PROJECT ----- Improvements 13F,18G						
ITEM #	FDOT REF.	DESCRIPTION	UNIT	QUANTITY	UNIT COST	SUBTOTAL
1	101-1	Mobilization	LS	1	\$7,050.00	\$ 7,050.00
2	101-1-1	Provide/Maintain As-Built Survey Plans	LS	1	\$2,750.00	\$ 2,750.00
3	101-1-2	Provide Construction Survey Layout (GR-17)	LS	1	\$3,410.00	\$ 3,410.00
4	102-1	Maintenance of Traffic	LS	1	\$3,000.00	\$ 3,000.00
5	104-13-1	Stormwater Pollution Prevention, Erosion Control (104-10-1)	LS	1	\$2,300.00	\$ 2,300.00
6		Permitting & Monitoring (Dewatering Permit, Collier County ROW, NPDES, Hydraulic Conductivity Tests, GR-19, GR-20)	LS	1	\$1,000.00	\$ 1,000.00
7	1000-5 to 8	Utility Company Coordination	LS	1	\$300.00	\$ 300.00
8	See Des-1	Demolition & Removal (Work within ROW)	LS	1	\$11,860.00	\$ 11,860.00
9	See Des-2	Demolition & Removal (Work within Easements)	LF			
10	See Des-3	Swales (excavation, regrading, dressing, sod)	SY	2,370	\$3.95	\$ 9,361.50
11	See Des-4	Hardscape Repairs & Replacement (mailboxes, irrigation systems, fences, columns, etc.)	LS	1	\$3,150.00	\$ 3,150.00
12	522-1	Replace Asphalt Driveway (2" asphalt w/ compacted base)	SY	45	\$28.00	\$ 1,260.00
13		Replace Gravel or Shell or Stone Driveway	SY	315	\$2.00	\$ 630.00
14	520-1-10	concrete curbing ( Valley, F, D, etc.)	LF		\$23.00	\$ -
15	522-1	Concrete Driveway ( 6" thickw/fibermesh)	LF	315	\$27.00	\$ 8,505.00
16	522-1	Replace Concrete Sidewalk (4" thick w/ fibermesh)	SY	7	\$22.50	\$ 157.50
17	See Des-5	Landscaping Allowance				\$ 5,000.00
18	110-4	Sawcut Pavement	LF	400	\$0.50	\$ 200.00
19		Furnish & Install 15" RCP-CIII	LF	38	\$25.86	\$ 982.68
20	430	Furnish & Install 24" RCP-CIII	LF	687	\$33.58	\$ 23,069.46
21	430	Furnish & Install 30" RCP-CIII	LF	724	\$43.99	\$ 31,848.76
22	430	Furnish & Install 36" RCP-CIII	LF	213	\$58.05	\$ 12,364.65
23	400-1-2	Furnish & Install 24" Headwall	EA	1	\$1,290.00	\$ 1,290.00
24	425-2-71	Catch Basin Type C Inlet	EA	6	\$1,060.00	\$ 6,360.00
25	425-1-321	Catch Basin Type E Inlet	EA	5	\$1,450.00	\$ 7,250.00
26	425-2-71	Type J Conflict Box	EA	1	\$2,800.00	\$ 2,800.00
27	331-2-A	Furnish & Install Asphalt Pavement & Road Bedding	SY	144	\$24.00	\$ 3,456.00
28	711-1	Furnish & Install Pavement Markings	LS	1	\$1,000.00	\$ 1,000.00
29	1000-5	Sanitary Sewer Conflict Gravity Line Replacement (10")	EA	2	\$3,520.00	\$ 7,040.00
30	1000-6	Water Main Conflict Line Deflection	EA	1	\$2,772.00	\$ 2,772.00
31	See Des-6	Maximum Change Allowance - Unforeseen Conditions				\$ 50,000.00
<b>BID TOTAL</b>						\$ 210,167.55

	<u>Time to Complete</u>	<u>Liquidated damages</u>
Area # 1	165 – calendar days	\$1,148 per day
Area # 2	90 – calendar days	\$566 per day
Area # 3	300- calendar days	\$1,148 per day

Notice to Proceed shall be issued immediately for each work area. Work Area #1 and #3 shall run concurrently (at the same time), NOT consecutively (one after the other). Bidder may bid on one or both of the construction areas. If the same contractor successfully bids on both work areas, the construction company shall be required to demonstrate that it has a capable work force and sufficient number of staff, equipment and financing to complete both work areas within the required schedule.

Additional Requirements:

- A. Equipment, Materials & Supplies:** The Contractor shall designate a location for the storage of equipment, materials and supplies at or near the construction site. The City may allow for the temporary storage of equipment, materials and supplies at the City's storage yard location on Riverside Circle.
- B. Excavated Materials:** Excavated materials will be hauled away by the Contractor to a location designated by the Contractor at the Contractor's cost.
- C. Truck Routes:** Exhibit E illustrates preferred (green) and prohibited (red) truck routes throughout the City. The Contractor shall comply.
- D. Change Allowance:** This line item has been created to address unforeseen conditions arising during the construction project. Any disbursements from this line item shall be in accordance with Section 01028 of the Technical Specifications.

END OF EXHIBIT B

## EXHIBIT C

### GENERAL INSURANCE REQUIREMENTS

The Contractor shall not commence work until he has obtained all the insurance required under this heading, and until such insurance has been approved by the CITY, nor shall the Contractor allow any subcontractor to commence work until all similar insurance required of the subcontractor has also been obtained and approved by the CITY.

Certificates of insurance must be issued by an authorized representative of the insurance company at the request and direction of the policyholder and must include sufficient information so as to identify the coverage and the contract for CITY's improvements for which they are issued. Certificates of insurance must be issued by a nationally recognized insurance company with a Best's Rating of no less than B+VII, satisfactory to the CITY, and duly licensed to do business in the state of said Contract.

The Contractor shall procure and maintain, during the life of this Contract, Workmen's Compensation Insurance for all of his employees to be engaged in work under this Contract, and he shall require any subcontractor similarly to provide Workmen's Compensation Insurance for all of the latter's employees to be engaged in such work, unless such employees are covered by the protection afforded by the Contractor's insurance. In case any employees are to be engaged in hazardous work under this Contract, and are not protected under this Workmen's Compensation statute, the Contractor shall provide, and shall cause each subcontractor to provide, adequate coverage for the protection of such employees. It is acceptable to use a State-approved Workmen's Compensation Self-Insurance fund.

The Contractor shall take out and maintain during the life of this Contract, Public Liability and Property Damage and shall include Contractual Liability, Personal Injury, Libel, Slander, False Arrest, Malicious Prosecution, Wrongful Entry or Eviction, Broad Form Property Damage, Products, Completed Operations and XCU Coverage to be included on an occurrence basis, and to the full extent of the Contract to protect him, the CITY, and any subcontractor performing work covered by this Contract from damages for personal injury, including accidental death, as well as from claims for property damage, which may arise from operations under this contract, whether such operations be by himself or by a subcontractor, or by anyone directly or indirectly employed by either of them. The Contractor shall also maintain automobile liability insurance including "non-owned and hired" coverage. The entire cost of this insurance shall be borne by the Contractor.

The amount of such insurance shall be no less than \$1,000,000 annual aggregate for bodily injury and property damage combined per occurrence.

The City of Naples and their Engineer must be named as **Additional Insured** on the insurance certificate **and the following must also be stated on the certificate.** "These coverages are primary to all other coverages the City possesses for this contract only." The City of Naples shall be named as the Certificate Holder. **The Certificate Holder shall read as follows:**

**The City of Naples  
735 Eighth Street South  
Naples, Florida 34102**

No City Division, Department, or individual name should appear on the Certificate.  
No other format will be acceptable.

Thirty (30) days cancellation notice required.

The Certificate must state the bid number and title.

When using the "Accord" form of insurance certificate, please note that under the cancellation clause, the following must be deleted: "endeavor to" and "but failure to mail such notice shall impose no obligation or liability of any kind upon the company"

*[If other insurance or insurance requirements or any waivers, attach as Exhibit C-1 through C-\_\_ ]*

## EXHIBIT D

### CERTIFICATION OF COMPLIANCE WITH IMMIGRATION LAWS

The undersigned, is the \_\_\_\_\_ of **Mitchell & Stark Construction Company, Inc.** (“the CONTRACTOR”), and hereby certifies to the following:

1. The CONTRACTOR is in full compliance with all provisions of the Immigration Reform and Control Act of 1986 (“IRCA”), as well as all related immigration laws, rules, regulations pertaining to proper employee work authorization in the United States.

2. The undersigned has verified that the CONTRACTOR has obtained and maintains on file, and will continue to obtain and maintain on file, all documentation required by law, including but not limited to, Form I-9, Employment Eligibility Verification, for all persons employed by or working for the CONTRACTOR in any capacity on any project for the City of Naples (CITY). All such persons have provided evidence of identity and eligibility to work to the CONTRACTOR in accordance with the IRCA and related law. The undersigned hereby affirms that no person has been or will be employed by the CONTRACTOR to work on projects for the CITY who is not authorized to work under law. The undersigned further affirms that the CONTRACTOR’s files will be updated by written notice any time that additional employees work on projects for the CITY.

3. The CONTRACTOR will have its contractors, subcontractors, suppliers and vendors who are involved in projects for the CITY to sign a written acknowledgment that they too are in compliance with immigration law. It is understood that failure to do so could result in the CONTRACTOR being liable for any violation of the law by such third parties.

4. The CONTRACTOR will fully cooperate with and have its contractors, subcontractors, suppliers and vendors to fully cooperate with, all inquiries and investigations conducted by any governmental agency in connection with proper compliance with the laws pertaining to appropriate work authorization in the United States.

5. The undersigned, on behalf of the CONTRACTOR, acknowledges that this Certification may be relied upon by the CITY, its officers, directors, employees, and affiliates or related persons and entities.

6. If it is found that the CONTRACTOR has not complied with the laws pertaining to proper employment authorization, and any legal and administrative action ensues against the CITY, the CONTRACTOR will indemnify, defend and hold the CITY harmless along with their officers, directors, employees, and affiliated or related persons and entities.

7. The CONTRACTOR acknowledges that the CITY by their authorized representatives shall have the right, at any time, upon 24 hours notice, to examine the CONTRACTOR’s books and records to confirm that the CONTRACTOR is in compliance with the terms of this certification.

Executed this \_\_\_\_\_ day of \_\_\_\_\_, 2009.

By: \_\_\_\_\_



**ACKNOWLEDGMENT**

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

SWORN TO AND SUBSCRIBED before me this \_\_\_\_\_ day of \_\_\_\_\_, 2009.

The Affiant, \_\_\_\_\_, is [ ] personally known to me or [ ] has produced \_\_\_\_\_ as identification, which is current or has been issued within the past five years and bears a serial number or other identifying number.

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

\_\_\_\_\_  
NOTARY PUBLIC - STATE

OF \_\_\_\_\_

Commission Number: \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

(Notary Seal)