

SARASOTA COUNTY

CENTRAL COUNTY SOLID WASTE DISPOSAL
COMPLEX

LEACHATE FORCEMAIN & PUMP STATION
MODIFICATION

#130542-003-SO/MM



An employee-owned company

Dept. of Environmental
Protection
MAY 30 2006
Southwest District

May 26, 2006

Ms. Susan Pelz
Florida Department of Environmental Protection
13051 Telecom Parkway
Temple Terrace, FL 33637

RE: Pending Modification #130542-003-SO/MM to
Permit #130542-002-SO/01, Sarasota County

Dear Ms. Pelz:

In response to the comments in your letter of May 23, 2006, we have revised the minor modification permit application and construction plans for the leachate force main project. Enclosed are two copies of:

1. The revised construction plans
2. A revised DEP Form # 62-701-900(I)
3. A revised Leachate Water Balance Form
4. Revised page 02300-1 of the specifications

We have addressed the comments in your letter of May 23, 2006 as follows:

Application form, Rule 62-701.320(7), F.A.C.

- a. Item A.5. Please provide a revised application form that references DEP Id. Number SWD/58/51614.

A revised application form is enclosed.

- b. Item B.1. Please clarify how the requested modification is a "renewal construction of a leachate pumping station and force main." Please revise the application form as appropriate.

The work "renewal" is deleted from the sentence.

- c. Item B.25. Since trucking leachate to a WWTP is still included as a contingency operation, please provide a revised application form that indicates this activity.

The revised application form showing hauling as a contingency operation is enclosed.

- d. Item T.1. Please provide a revised application form that does not reference Manatee County Government Utility Operations Department.

Dept. of Environmental
Protection

MAY 30 2006

This correction was made.

2. **Operations Plan**, Rule 62-701.500, F.A.C.
a. Please provide revised Section L.8.d of the operations plan to include the proposed changes.

A revised Section L.8.d is enclosed.

- b. Please provide a revised Leachate Water Balance Form that includes the proposed changes.

A revised Leachate Water Balance Form is enclosed.

3. **Technical Specifications**, *Central County Landfill Leachate Force Main and Pump Station Construction Project, Bid No., 6125JW*, dated October 2005 (received April 27, 2006), Rule 62-701.400, F.A.C.

- a. Section 02300. Please specify where the drilling mud will be disposed.

Section 02300 has been revised to require the Contractor to properly contain all drilling fluids/mud and dispose all excess material offsite. See revised page 02300-1 attached.

4. **Construction plans**, *Central County Landfill Leachate Force Main and Pump Station*, dated July 2005 (received April 21, 2006), Rule 62-701.320(7)(f), F.A.C.

- a. It appears that in several locations that HDPE pipe will be joined to PVC pipe. Since PVC is joined using solvent and HDPE pipe is joined using heat fusion welding, please explain how these different types of pipe will be joined.

See the HDPE to PVC Transition Detail on Sheet 27.

- b. Sheet 26.

1) The note regarding the manhole west of the leachate storage tank indicates that the manhole was "full of water" at the time of the survey. Since it appears that this manhole is a leachate manhole, please explain how leachate was not discharged into the environment from the manhole overflowing.

The manholes are located at the ends of the casing that goes under the roadway. The leachate forcemain is solid piped thru the manholes and the roadway casing. There is no leachate in the manholes.

2) Please verify if the Leachate Transfer Pump Station detail should be referenced to Sheet 28 and well as Sheet 29.

The Leachate Transfer Pump Station detail is now referenced to Sheet 28 as well as Sheet 29. See revised sheet 26.

3) Since the truck loadout of leachate is proposed to be available as a contingency operation, please provide details of the existing transfer pump station in relation to the proposed new pump station.

The proposed pump station intersects the suction pipe to the existing transfer pump station with a tee. The existing piping to the existing pump station will remain unchanged so the contingency truck loadout operation can be used if necessary.

c. **Sheet 28.**

1) Please clarify if there is a reducer from 2-inch 45 degree sch. 80 PVC bend to the 4-inch force main to Sta. 287+57.

A 2" x 4" reducer has been added to plans, see revised sheet 28.

2) Please note the reference to the pipe support detail.

The reference to the pipe support detail shown on sheet 29 has been added to sheet 28.

3) Please reference the sheet that shows cross-section B-B.

Sheet 29 is now referenced as the sheet that shows cross-section B-B.

4) Please clarify where the pad drains. It does not appear that a sump or curb is shown. Please clarify how leakage or spills from the leachate force main piping and pumps in this area will not discharge to the environment.

The concrete pad does not contain a sump or curb. Rain water will drain to the grass along the pad. The pumps and piping are a sealed pipe system and not susceptible to spills. All above and below ground piping from the connection point to the discharge at the lift station on Knights Trail Road will be hydrostatically tested to insure a pressure tight system before start-up. All above ground piping will be visually monitored and maintained to ensure no leakage occurs. If there should ever be a need to disassemble the piping and pumping system, the pipes will be completely drained prior to disassembly and the amount of leachate water in the system will be very minimal. This would be a similar situation to the existing above ground influent and effluent piping by the existing storage tank.

5) Please clarify where the existing 8-inch below ground pipe east of the new 8" x 8" x 4" tee discharges.

Ms. Susan Pelz
May 26, 2006
Page 4

Dept. of Environmental
Protection

MAY 30 2006

Southwest District

The existing 8" pipe discharges to the existing transfer pump station. See revised sheet 28.

d. Sheet 29.

1) Please clarify where the pipe (suction?) located below the pump originates and discharges to.

The pipe is the pump discharge that runs between the two pumps as shown in the plan view and cross-section AA on sheet 28. The pipe connects to the new 4" force main. See revised sheets 28 and 29.

Please don't hesitate to call if you need any additional information.

Sincerely,



C.P. (Pete) Putman, P.E.
Vice President

c: Frank Coggins (w/attach.)

PBS & TRANSMITTAL

DATE: April 26, 2006

TO: Ms. Susan J. Pelz, P.E. Solid Waste Manager
Florida Department of Environmental Protection

Dep. of Environmental Protection
RE: Central County Landfill
Leachate Treatment Plant Pump Station

Address/Office: 13051 Telecom Parkway
Temple Terrace, Florida 33637

Phone: _____

APR 27 2006

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____
the following items:

- ☐ Shop Drawings ☐ Prints ☒ Plans ☐ Samples
☐ Copy of Letter ☐ Change Order ☒ Specifications ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1			Signed and sealed drawings
1			Signed and sealed specifications

THESE ARE TRANSMITTED As Checked Below:

- ☐ For approval ☐ Reviewed as submitted ☐ Resubmit _____ copies for approval
☒ For your use ☐ Reviewed as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____ ☐ _____
☐ For bids due _____ 20____
☐ Prints returned after loan to us

REMARKS:

These documents are being submitted for the minor modification to the operating plan for the Sarasota County, Central County Landfill.

SIGNED _____

DISTRIBUTION _____

If enclosures are not as noted, kindly notify us at once

FILE



An employee-owned company

April 26, 2006

Ms. Susan Pelz
Florida Department of Environmental Protection
13051 Telecom Parkway
Temple Terrace, FL 33637

Dept. of Environmental
Protection
APR 27 2006
Southwest District

RE: Application for a Minor Modification to the Operating Permit
Sarasota County Central County Solid Waste Disposal Complex

Dear Ms. Pelz:

Sarasota County is planning to construct a leachate pumping station and force main to transport leachate off site for treatment and disposal. Attached is an application for a minor permit modification, including the following documentation:

2	DEP Form # 62-701-900(I)
1	Check in the amount of \$250
2	Revised leachate disposal section for the operations plan
2	FDEP Form 62-604.300(8)(a) for construction of a wastewater collection system (Signed by the City of Venice on Page 10 of 11 as the Wastewater Facility Owner)
2	FDEP permit for construction of a wastewater collection system

We have previously provided to you one set of construction plans and specifications for the project and are sending an additional set under separate cover.

We request that the operating permit for the landfill be modified to incorporate the revised leachate disposal plan.

Please don't hesitate to call if you need any additional information.

Sincerely,

C.P. (Pete) Putman, P.E.
Vice President

c: Frank Coggins (w/attach.)

M:\Environmental\Sarasota County Solid Waste\Sara Co SW 2005 (120544)\120544.02 Leachate FM Const\ltr spelz.doc



Florida Department of Environmental Protection
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, FL 32399-2400

DEP Form # 62-701.900(1)
Form Title Solid Waste Management Facility Permit
Effective Date 05-27-01

DEP Application No. _____
(Filled by DEP)

DEPT. OF ENVIRONMENTAL
PROTECTION

MAY 30 2006

Southwest District
STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL PROTECTION

APPLICATION FOR A PERMIT TO CONSTRUCT,
OPERATE, MODIFY OR CLOSE
A SOLID WASTE MANAGEMENT FACILITY

APPLICATION INSTRUCTIONS AND FORMS

Sarasota County
Central County Solid Waste Disposal Complex

Minor Modification for Leachate
Pumping Station and Force Main

April 26, 2006

Northwest District
160 Governmental Center
Pensacola, FL 32501-5794
850-595-8360

Northeast District
7825 Baymeadows Way, Ste. B200
Jacksonville, FL 32256-7590
904-448-4300

Central District
3319 Maguire Blvd., Ste. 232
Orlando, FL 32803-3767
407-894-7555

Southwest District
3804 Coconut Palm Dr.
Tampa, FL 33619
813-744-6100

South District
2295 Victoria Ave., Ste. 364
Fort Myers, FL 33901-3881
941-332-6975

Southeast District
400 North Congress Ave.
West Palm Beach, FL 33401
561-681-6600

INSTRUCTIONS TO APPLY FOR A SOLID WASTE MANAGEMENT FACILITY PERMIT

I. General

Solid Waste Management Facilities shall be permitted pursuant to Section 403.707, Florida Statutes, (FS) and in accordance with Florida Administrative Code (FAC) Chapter 62-701. A minimum of four copies of the application shall be submitted to the Department's District Office having jurisdiction over the facility. The appropriate fee in accordance with Rule 62-701.315, FAC, shall be submitted with the application by check made payable to the Department of Environmental Protection (DEP).

Complete appropriate sections for the type of facility for which application is made. Entries shall be typed or printed in ink. All blanks shall be filled in or marked "not applicable" or "no substantial change". Information provided in support of the application shall be marked "submitted" and the location of this information in the application package indicated. The application shall include all information, drawings, and reports necessary to evaluate the facility. Information required to complete the application is listed on the attached pages of this form.

II. Application Parts Required for Construction and Operation Permits

- A. Landfills and Ash Monofills - Submit parts A,B, D through T
- B. Asbestos Monofills - Submit parts A,B,D,E,F,G,J,L,N, P through S, and T
- C. Industrial Solid Waste Facilities - Submit parts A,B, D through T
- D. Non-Disposal Facilities - Submit parts A,C,D,E,J,N,S and T

NOTE: Portions of some parts may not be applicable.

NOTE: For facilities that have been satisfactorily constructed in accordance with their construction permit, the information required for A,B,C and D type facilities does not have to be resubmitted for an operation permit if the information has not substantially changed during the construction period. The appropriate portion of the form should be marked "no substantial change".

III. Application Parts Required for Closure Permits

- A. Landfills and Ash Monofills - Submit parts A,B,M, O through T
- B. Asbestos Monofills - Submit parts A,B,N, P through T
- C. Industrial Solid Waste Facilities - Submit parts A,B, M through T
- D. Non-Disposal Facilities - Submit parts A,C,N,S and T

NOTE: Portions of some parts may not be applicable.

IV. Permit Renewals

The above information shall be submitted at time of permit renewal in support of the new permit. However, facility information that was submitted to the Department to support the expiring permit, and which is still valid, does not need to be re-submitted for permit renewal. Portions of the application not re-submitted shall be marked "no substantial change" on the application form.

V. Application Codes

S	-	Submitted
LOCATION	-	Physical location of information in application
N/A	-	Not Applicable
N/C	-	No Substantial Change

VI. LISTING OF APPLICATION PARTS

PART A:	GENERAL INFORMATION - Submitted
PART B:	DISPOSAL FACILITY GENERAL INFORMATION - Submitted
PART C:	NON-DISPOSAL FACILITY GENERAL INFORMATION - Not Applicable
PART D:	PROHIBITIONS - Not Applicable
PART E:	SOLID WASTE MANAGEMENT FACILITY PERMIT REQUIREMENTS, GENERAL - Not Applicable
PART F:	LANDFILL PERMIT REQUIREMENTS - Not Applicable
PART G:	GENERAL CRITERIA FOR LANDFILLS - Not Applicable
PART H:	LANDFILL CONSTRUCTION REQUIREMENTS - Not Applicable
PART I:	HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS - Not Applicable
PART J:	GEOTECHNICAL INVESTIGATION REQUIREMENTS - Not Applicable
PART K:	VERTICAL EXPANSION OF LANDFILLS - Not Applicable
PART L:	LANDFILL OPERATION REQUIREMENTS - Not Applicable
PART M:	WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS - Not Applicable
PART N:	SPECIAL WASTE HANDLING REQUIREMENTS - Not Applicable
PART O:	GAS MANAGEMENT SYSTEM REQUIREMENTS - Not Applicable
PART P:	LANDFILL CLOSURE REQUIREMENTS - Not Applicable
PART Q:	CLOSURE PROCEDURES - Not Applicable
PART R:	LONG TERM CARE REQUIREMENTS - Not Applicable
PART S:	FINANCIAL RESPONSIBILITY REQUIREMENTS - Not Applicable
PART T:	CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER - Submitted

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
APPLICATION FOR A PERMIT TO CONSTRUCT, OPERATE, MODIFY OR CLOSE
A SOLID WASTE MANAGEMENT FACILITY

Please Type or Print

A. GENERAL INFORMATION

1. Type of facility (check all that apply):

☒ Disposal

☒ Class I Landfill

☐ Ash Monofill

☐ Class II Landfill

☐ Asbestos Monofill

☐ Class III Landfill

☐ Industrial Solid Waste

☐ Other Describe: _____

☐ Non-Disposal

☐ Incinerator For Non-biomedical Waste

☐ Waste to Energy Without Power Plant Certification

☐ Other Describe: _____

NOTE: Waste Processing Facilities should apply on Form 62-701.900(4), FAC;
Land Clearing Disposal Facilities should notify on Form 62-701.900(3), FAC;
Compost Facilities should apply on Form 62-701.900(10), FAC; and
C&D Disposal Facilities should apply on Form 62-701.900(6), FAC

2. Type of application:

☐ Construction

☐ Operation

☐ Construction/Operation

☐ Closure

3. Classification of application:

☐ New

☐ Substantial Modification

☐ Renewal

☐ Intermediate Modification

☒ Minor Modification

4. Facility name: Central County Solid Waste Disposal Complex

5. DEP ID number: SWD/58/51614 County: Sarasota

6. Facility location (main entrance): North end Knights Trail Road

7. Location coordinates:

Section: 9-16 Township: 38S Range: 19E

Latitude: 27⁰ 12' 00" Longitude: 82⁰ 23' 00"

8. Applicant name (operating authority): Sarasota County Solid Waste Operations
Mailing address: 4000 Knights Trail Road Nokomis FL 34275
Street or P.O. Box City State Zip
Contact person: Frank Coggins Telephone: (941) 861-1571
Title: Solid Waste Operations Manager
E-Mail address (if available): fcoggins@scgov.net
9. Authorized agent/Consultant: PBS&J
Mailing address: 2803 Fruitville Road, Suite 130 Sarasota FL 32437
Street or P.O. Box City State Zip
Contact person: C.P. (Pete) Putman Telephone: (941) 954-4036
Title: Vice President
E-Mail address (if available): cputman@pbsj.com
10. Landowner (if different than applicant): N/A
Mailing address: _____
Street or P.O. Box City State Zip
Contact person: _____ Telephone: (____) _____
E-Mail address (if available): _____
11. Cities, towns and areas to be served: Sarasota County
12. Population to be served:
Current: 422,630 Five-Year Projection: 451,590
13. Date site will be ready to be inspected for completion: November 31, 2006
14. Expected life of the facility: 38 years years
15. Estimated costs:
Total Construction: \$ \$563,000 Closing Costs: NA
16. Anticipated construction starting and completion dates:
From: May 2006 To: November 2006
17. Expected volume or weight of waste to be received:
N/A yds³/day Received 860 tons/day N/A gallons/day

B. DISPOSAL FACILITY GENERAL INFORMATION

1. Provide brief description of disposal facility design and operations planned under this application:

This application is for construction of a leachate pumping station and force main that will carry leachate from the on-site leachate storage tank to a connection to the County's sanitary sewer system. The sewer system carries wastewater to the City of Venice WWTP for disposal. The new pumping station will have two pumps, each with a capacity of 50 gallons per minute. The existing pumps that are used to load trucks for hauling leachate to the Bee Ridge WWTP will remain as an emergency backup.

2. Facility site supervisor: Frank Coggins

Title: Solid Waste Operations Manager Telephone: (941) 861-1571

fcoggins@scgov.net

E-Mail address (if available)

3. Disposal area: Total 55 acres; Used 44 acres; Available 11 acres.

4. Weighing scales used: ☒ Yes ☐ No

5. Security to prevent unauthorized use: ☒ Yes ☐ No

6. Charge for waste received: N/A \$/yds³ 63.77 \$/ton

7. Surrounding land use, zoning:

☒ Residential

☐ Industrial

☒ Agricultural

☐ None

☐ Commercial

☒ Other Describe: Government Use

8. Types of waste received:

☒ Residential

☒ C & D debris

☒ Commercial

☒ Shredded/cut tires

☐ Incinerator/WTE ash

☒ Yard trash

☒ Treated biomedical

☐ Septic tank

☒ Water treatment sludge

☒ Industrial

☐ Air treatment sludge

☒ Industrial sludge

☒ Agricultural

☒ Domestic sludge

☒ Asbestos

☐ Other Describe: _____

9. Salvaging permitted: ☐ Yes ☒ No

10. Attendant: ☒ Yes ☐ No Trained operator: ☒ Yes ☐ No

11. Spotters: Yes ☒ No ☐ Number of spotters used: 1

12. Site located in: ☐ Floodplain ☐ Wetlands ☒ Other Uplands

13. Property recorded as a Disposal Site in County Land Records: ☐ Yes ☒ No
14. Days of operation: Monday through Saturday
15. Hours of operation: 8:00 a.m. to 5:00 p.m.
16. Days Working Face covered: Monday through Saturday
17. Elevation of water table: 16.5 to 20.0 (NGVD 1929)
18. Number of monitoring wells: 8
19. Number of surface monitoring points: 7
20. Gas controls used: ☒ Yes ☐ No Type controls: ☐ Active ☒ Passive
Gas flaring: ☒ Yes ☐ No Gas recovery: ☐ Yes ☒ No
21. Landfill unit liner type:
☐ Natural soils ☐ Double geomembrane
☐ Single clay liner ☐ Geomembrane & composite
☐ Single geomembrane ☐ Double composite
☒ Single composite ☐ None
☐ Slurry wall
☐ Other Describe: _____
22. Leachate collection method:
☒ Collection pipes ☐ Sand layer
☒ Geonets ☐ Gravel layer
☐ Well points ☐ Interceptor trench
☐ Perimeter ditch ☐ None
☐ Other Describe: _____
23. Leachate storage method:
☒ Tanks
☐ Surface impoundments
☐ Other Describe: _____
24. Leachate treatment method:
☐ Oxidation ☐ Chemical treatment
☐ Secondary ☐ Settling
☐ Advanced
☐ None
☒ Other Off-site treatment at a WWTP

25. Leachate disposal method:

<input type="checkbox"/> Recirculated	<input checked="" type="checkbox"/> Pumped to WWTP
<input checked="" type="checkbox"/> Transported to WWTP	<input type="checkbox"/> Discharged to surface water
<input type="checkbox"/> Injection well	<input type="checkbox"/> Percolation ponds
<input type="checkbox"/> Evaporation	
<input type="checkbox"/> Other _____	

26. For leachate discharged to surface waters:

Name and Class of receiving water: N/A

27. Storm Water:

Collected: ☒ Yes ☐ No

Type of treatment: Retention ponds

Name and Class of receiving water: Cow Pen Slough, Class III

28. Environmental Resources Permit (ERP) number or status: 407932.01

T. CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

1. Applicant:

The undersigned applicant or authorized representative of Sarasota County Solid

Waste Operations Department is aware that statements made in this form and attached information are an application for a minor operations permit modification from the Florida Department of Environmental Protection and certifies that the information in this application is true, correct and complete to the best of his/her knowledge and belief. Further, the undersigned agrees to comply with the provisions of Chapter 403, Florida Statutes, and all rules and regulations of the Department. It is understood that the Permit is not transferable, and the Department will be notified prior to the sale or legal transfer of the permitted facility.

Frank Coggins
Signature of Applicant or Agent
Frank Coggins
Manager, Solid Waste Operations
Name and Title (please type)

fcoggins@scgov.net
E-Mail address (if available)

4000 Knights Trail Road
Mailing Address

Nokomis FL 34275
City, State, Zip Code

(941) 861-1578
Telephone Number

Date: May 22, 2006

Attach letter of authorization if agent is not a governmental official, owner, or corporate officer.

2. Professional Engineer registered in Florida (or Public Officer if authorized under Sections 403.707 and 403.7075, Florida Statutes):

This is to certify that the engineering features of this solid waste management facility have been designed/examined by me and found to conform to engineering principles applicable to such facilities. In my professional judgment, this facility, when properly maintained and operated, will comply with all applicable statutes of the State of Florida and rules of the Department. It is agreed that the undersigned will provide the applicant with a set of instructions of proper maintenance and operation of the facility.

John M. Eash 5/24/06
Signature
John M. Eash, P.E.
Name and Title (please type)

46235
Florida Registration Number
(please affix seal)

2803 Fruitville Road, Suite 130
Mailing Address

Sarasota, Florida 34237
City, State, Zip Code

jmeash@pbsj.com
E-Mail address (if available)

(941) 954-4036
Telephone Number

Date: April 26, 2006



Florida Department of Environmental Protection

Twin Towers Office Bldg., 2600 Blair Stone Road, Tallahassee, Florida 32399-2400

NOTIFICATION/APPLICATION FOR CONSTRUCTING A DOMESTIC WASTEWATER COLLECTION/TRANSMISSION SYSTEM

PART I - GENERAL

Subpart A: Permit Application Type

Permit Application Type (mark one only)	EDUs Served	Application Fee*	"X"
Are you applying for an individual permit for a domestic wastewater collection/transmission system? Note: an EDU is equal to 3.5 persons. Criteria for an individual permit are contained in Rule 62-604.600(7), F.A.C.	≥ 10	\$500	<input checked="" type="checkbox"/>
	< 10	\$300	<input type="checkbox"/>
Is this a Notice of Intent to use the general permit for wastewater collection/transmission systems? Criteria for qualifying for a general permit are contained in Rule 62-604.600(6), F.A.C. Projects not meeting the criteria in Rule 62-604.600(6), F.A.C., must apply for an individual permit.	N/A	\$250	<input type="checkbox"/>

*Note: Each non-contiguous project (i.e., projects that are not interconnected or are not located on adjacent streets or in the same neighborhood) requires a separate application and fee.

Subpart B: Instructions

- This form shall be completed for all domestic wastewater collection/transmission system construction projects as follows:
 - If this is a Notice of Intent to use the general permit, this notification shall be submitted to the Department at least 30 days prior to initiating construction.
 - If this is an application for an individual permit, the permit must be obtained prior to initiating construction.
- One copy of the completed form shall be submitted to the appropriate DEP district office or delegated local program along with the appropriate fee, and one copy of the following supporting documents. Checks should be made payable to the Florida Department of Environmental Protection, or the name of the appropriate delegated local program.
 - If this is a Notice of Intent to use the general permit, attach a site plan or sketch showing the size and approximate location of new or altered gravity sewers, pump stations and force mains; showing the approximate location of manholes and isolation valves; and showing how the proposed project ties into the existing or proposed wastewater facilities. The site plan or sketch shall be signed and sealed by a professional engineer registered in Florida.
 - If this is an application for an individual permit, one set of plans and specifications shall be submitted with this application, or alternatively, an engineering report shall be submitted. Plans and specifications and engineering reports shall be prepared in accordance with the applicable provisions of Chapters 10 and 20 of *Recommended Standards for Wastewater Facilities*. The plans and specifications or engineering report shall be signed and sealed by a Professional Engineer registered in Florida.
- All information shall be typed or printed in ink. Where attached sheets (or other technical documentation) are utilized in lieu of the blank spaces provided, indicate appropriate cross-references on the form. For Items (1) through (4) of Part II of this application form, if an item is not applicable to your project, indicate "NA" in the appropriate space provided.

PART II - PROJECT DOCUMENTATION

(1) Collection/Transmission System Permittee

Name Frank Coggins Title Manager - Solid Waste Operations
 Company Name Sarasota County - Solid Waste Department
 Address 4000 Knights Trail Road
 City Nokomis State Florida Zip 34275
 Telephone 941-861-1578 Fax 941-486-2620 Email fcoggins@scgov.net

(2) General Project Information

Project Name Central County Landfill - Leachate Force Main and Pump Station
 Location: County Sarasota City Nokomis Section 20/29/33 Township 38 Range 19
 Project Description and Purpose (including pipe length, range of pipe diameter, total number of manholes, and total number of pump stations) Proposed to construct a pump station and a 5.2 mile 4" diameter force main to pump leachate from the Central County Landfill to Lift Station 376-0527 on Knights Trail Road Just North of Laurel Road.
 Estimated date for: Start of construction January 2006 Completion of construction January 2007
 Connections to existing system or treatment plant Connect to Lift Station 376-0527

(3) Project Capacity

A = Type of Unit	B = Number of Units	C = Population Unit	D = Total Population (Columns B x C)	E = Per Cap Flow	F = Total Average Daily Flow (Columns D x E)	G = Peak hour flow
Single-Family Home	N/A	N/A	N/A	N/A	N/A	N/A
Mobile Home	N/A	N/A	N/A	N/A	N/A	N/A
Apartment	N/A	N/A	N/A	N/A	N/A	N/A
Commercial, Institutional, or Industrial Facility*	117EDU	1	117EDU	175 GPD/ED	20,550GPD	40GPM
Total			117EDU		20,550GPD	40GPM

* Description of commercial, institutional, and industrial facilities and explanation of method used to estimate per capita flow for these facilities:

The landfill creates 7.5 MG of leachate per year. 7.5 MG divided by 365 days per year equals 20,550GPD.
 Using 175GPD/EDU, this equates to 117EDU'S. The maximum pumping rate for the proposed pumping station is 40GPM.
 The pump station has a 1.0MG storage tank to attenuate flows.

(4) Pump Station Data (attached additional sheets as necessary)

Location	Type	Estimated Flow to the Station (GPD)			Operating Conditions [GPD @ FT (TDH)]
		Maximum	Average	Minimum	
Landfill			20,550		40@46

(5) Collection/Transmission System Design Information

- A. This information must be completed for all projects by the applicant's professional engineer, and if applicable, those professional engineers in other disciplines who assisted with the design of the project.

If this project has been designed to comply with the standards and criteria listed below, the engineer shall initial in ink before the standards or criteria. If any of the standards or criteria do not apply to this project or if this project has not been designed to comply with the standards or criteria, mark "X" before the appropriate standard or criteria and provide an explanation, including any applicable rule references, in (5)B. below.

allow for another alternative that will result in an equivalent level of reliability and public health protection, the project can be constructed using the general permit.

General Requirements

- X 1. The project is designed based on an average daily flow of 100 gallons per capita plus wastewater flow from industrial plants and major institutional and commercial facilities unless water use data or other justification is used to better estimate the flow. The design includes an appropriate peaking factor, which covers I/I contributions and non-wastewater connections to those service lines. [RSWF 11.243]
- J.M.E. 2. Procedures are specified for operation of the collection/transmission system during construction. [RSWF 20.15]
- J.M.E. 3. The project is designed to be located on public right-of-ways, land owned by the permittee, or easements and to be located no closer than 100 feet from a public drinking water supply well and no closer than 75 feet from a private drinking water supply well; or documentation is provided in Part II.(5)B., showing that another alternative will result in an equivalent level of reliability and public health protection. [62-604.400(1)(b) and (c), F.A.C.]
- J.M.E. 4. The project is designed with no physical connections between a public or private potable water supply system and a sewer or force main and with no water pipes passing through or coming into contact with any part of a sewer manhole. [RSFW 38.1 and 48.5]
- J.M.E. 5. The project is designed to preclude the deliberate introduction of storm water, surface water, groundwater, roof runoff, subsurface drainage, swimming pool drainage, air conditioning system condensate water, noncontact cooling water except as provided by Rule 62-610.668(1), F.A.C., and sources of uncontaminated wastewater, except to augment the supply of reclaimed water in accordance with Rule 62-610.472(3)(c), F.A.C. [62-604.400(1)(d), F.A.C.]
- J.M.E. 6. The project is designed so that all new or relocated, buried sewers and force mains, are located in accordance with the separation requirements from water mains and reclaimed water lines of Rules 62-604.400(2)(g)(h) and (i) and (3), F.A.C. Note, if the criteria of Rules 62-604.400(2)(g) 4. or (2)(i) 3., F.A.C., are used, describe in Part II.C. alternative construction features that will be provided to afford a similar level of reliability and public health protection. [62-604.400(2)(g), (h), and (i) and (3), F.A.C.]

Gravity Sewers

- X 7. The project is designed with no public gravity sewer conveying raw wastewater less than 8 inches in diameter. [RSWF 33.1]
- X 8. The design considers buoyancy of sewers, and appropriate construction techniques are specified to prevent flotation of the pipe where high groundwater conditions are anticipated. [RSWF 33.3]
- X 9. All sewers are designed with slopes to give mean velocities, when flowing full, of not less than 2.0 feet per second based on Manning's formula using an "n" value of 0.013; or if it is not practicable to maintain these minimum slopes and the depth of flow will be 0.3 of the diameter or greater for design average flow, the owner of the system has been notified that additional sewer maintenance will be required. The pipe diameter and slope are selected to obtain the greatest practical velocities to minimize solids deposition problems. Oversized sewers are not specified to justify flatter slopes. [RSWF 33.41, 33.42, and 33.43]
- X 10. Sewers are designed with uniform slope between manholes. [RSWF 33.44]
- X 11. Where velocities greater than 15 fps are designed, provisions to protect against displacement by erosion and impact are specified. [RSWF 33.45]
- X 12. Sewers on 20% slopes or greater are designed to be anchored securely with concrete, or equal, anchors spaced as follows: not over 36 feet center to center on grades 20% and up to 35%; not over 24 feet center to center on grades 35% and up to 50%; and not over 16 feet center to center on grades 50% and over. [RSWF 33.46]
-
- X 13. Sewers 24 inches or less are designed with straight alignment between manholes. Where curvilinear sewers are proposed for sewers greater than 24 inches, the design specifies compression joints; ASTM or specific pipe manufacturer's maximum allowable pipe joint deflection limits are not exceeded; and curvilinear sewers are limited to simple curves which start and end at manholes. [RSWF 33.5]

- X 14. Suitable couplings complying with ASTM specifications are required for joining dissimilar materials. [RSWF 33.7]
- X 15. Sewers are designed to prevent damage from superimposed loads. [RSWF 33.7]
- X 16. Appropriate specifications for the pipe and methods of bedding and backfilling are provided so as not to damage the pipe or its joints, impede cleaning operations and future tapping, nor create excessive side fill pressures and ovalation of the pipe, nor seriously impair flow capacity. [RSWF 33.81]
- X 17. Appropriate deflection tests are specified for all flexible pipe. Testing is required after the final backfill has been in place at least 30 days to permit stabilization of the soil-pipe system. Testing requirements specify: 1) no pipe shall exceed a deflection of 5%; 2) using a rigid ball or mandrel for the deflection test with a diameter not less than 95% of the base inside diameter or average inside diameter of the pipe, depending on which is specified in the ASTM specification, including the appendix, to which the pipe is manufactured; and 3) performing the test without mechanical pulling devices. [RSWF 33.85]
- X 18. Leakage tests are specified requiring that: 1) the leakage exfiltration or infiltration does not exceed 200 gallons per inch of pipe diameter per mile per day for any section of the system; 2) exfiltration or infiltration tests be performed with a minimum positive head of 2 feet; and 3) air tests, as a minimum, conform to the test procedure described in ASTM G 828 for clay pipe, ASTM C 924 for concrete pipe, ASTM F-1417 for plastic pipe, and for other materials appropriate test procedures. [RSWF 33.93, 33.94, and 33.95]
- X 19. If an inverted siphon is proposed, documentation of its need is provided in Part II.C. Inverted siphons are designed with: 1) at least two barrels; 2) a minimum pipe size of 6 inches; 3) necessary appurtenances for maintenance, convenient flushing, and cleaning equipment; and 4) inlet and discharge structures having adequate clearances for cleaning equipment, inspection, and flushing. Design provides sufficient head and appropriate pipe sizes to secure velocities of at least 3.0 fps for design average flows. The inlet and outlet are designed so that the design average flow may be diverted to one barrel, and that either barrel may be cut out of service for cleaning. [RSWF 35]

Manholes

- X 20. The project is designed with manholes at the end of each line; at all changes in grade, size, or alignment; at all intersections; and at distances not greater than 400 feet for sewers 15 inches or less and 500 feet for sewers 18 inches to 30 inches, except in the case where adequate modern cleaning equipment is available at distances not greater than 600 feet. [RSWF 34.1]
- X 21. Design requires drop pipes to be provided for sewers entering manholes at elevations of 24 inches or more above the manhole invert. Where the difference in elevation between the incoming sewer and the manhole invert is less than 24 inches, the invert is designed with a fillet to prevent solids deposition. Inside drop connections (whennecessary) are designed to be secured to the interior wall of the manhole and provide access for cleaning. Design requires the entire outside drop connection be encased in concrete. [RSWF 34.2]
- X 22. Manholes are designed with a minimum diameter of 48 inches and a minimum access diameter of 22 inches. [RSWF 34.3]
- X 23. Design requires that a bench be provided on each side of any manhole channel when the pipe diameter(s) are less than the manhole diameter and that no lateral sewer, service connection, or drop manhole pipe discharges onto the surface of the bench. [RSWF 34.5]
- X 24. Design requires: 1) manhole lift holes and grade adjustment rings be sealed with nonshrinking mortar or other appropriate material; 2) inlet and outlet pipes be joined to the manhole with a gasketed flexible watertight connection or another watertight connection arrangement that allows differential settlement of the pipe and manhole wall; and 3) watertight manhole covers be used wherever the manhole tops may be flooded by street runoff omigh water. [RSWF 34.6]
- X 25. Manhole inspection and testing for watertightness or damage prior to placing into service are specified. Air testing, if specified for concrete sewer manholes, conforms to the test procedures described in ASTM G-1244. [RSWF 34.7]
- X 26. Electrical equipment specified for use in manholes is consistent with Item 46 of this checklist. [RSWF 34.9]

Stream Crossings

- X 27. Sewers and force mains entering or crossing streams are designed to be constructed of ductile iron pipe with mechanical joints or so they will remain watertight and free from changes in alignment or grade. Appropriate materials which will not readily erode, cause siltation, damage pipe during placement, or corrode the pipe are specified to backfill the trench. [RSWF 36.21 and 48.5]
- X 28. Stream crossings are designed to incorporate valves or other flow regulating devices (which may include pump stations) on the shoreline or at such distances from the shoreline to prevent discharge in the event the line is damaged. [62-604.400(2)(k)5., F.A.C.]
- X 29. Sewers and force mains entering or crossing streams are designed at a sufficient depth below the natural bottom of the stream bed to protect the line. At a minimum, the project is designed with subaqueous lines to be buried at least three feet below the design or actual bottom, whichever is deeper, of a canal and other dredged waterway or the natural bottom of streams, rivers, estuaries, bays, and other natural water bodies; or if it is not practicable to design the project with less than three-foot minimum cover, alternative construction features (e.g. a concrete cap, sleeve, or some other properly engineered device to insure adequate protection of the line) are described in Part II.C. [62-604.400(2)(k)1., F.A.C., and RSWF 36.11]
- X 30. Specifications require permanent warning signs be placed on the banks of canals, streams, and rivers clearly identifying the nature and location (including depths below design or natural bottom) of subaqueous crossings and suitably fixed signs be placed at the shore, for subaqueous crossings of lakes, bays, and other large bodies of water, and in any area where anchoring is normally expected. [62-604.400(2)(k)2., F.A.C.]
- X 31. Provisions for testing the integrity of subaqueous lines are specified. [62-604.400(2)(k)4., F.A.C.]
- X 32. Supports are designed for all joints in pipes utilized for aerial crossings and to prevent overturning and settlement. Expansion jointing is specified between above ground and below ground sewers and force mains. The design considers the impact of floodwaters and debris. [RSWF 37 and 48.5]
- X 33. Aerial crossings are designed to maintain existing or required navigational capabilities within the waterway and to reserve riparian rights of adjacent property owners. [62-604.400(2)(k)3., F.A.C.]

Pump Stations

- SPW 34. In areas with high water tables, pump stations are designed to withstand flotation forces when empty. When siting the pump station, the design considers the potential for damage or interruption of operation because of flooding. Pump station structures and electrical and mechanical equipment are designed to be protected from physical damage by the 100-year flood. Pump stations are designed to remain fully operational and accessible during the 25-year flood unless lesser flood levels are appropriate based on local considerations, but not less than the 10-year flood. [62-604.400(2)(e), F.A.C.]
- SPW 35. Pump stations are designed to be readily accessible by maintenance vehicles during all weather conditions. [RSWF 41.2]
- SPW 36. Wet well and pump station piping is designed to avoid operational problems from the accumulation of grit. [RSWF 41.3]
- X 37. Dry wells, including their superstructure, are designed to be completely separated from the wet well. Common walls are designed to be gas tight. [RSWF 42.21]
- SPW 38. The design includes provisions to facilitate removing pumps, motors, and other mechanical and electrical equipment. [RSWF 42.22]

- X 39. The design includes provisions for: 1) suitable and safe means of access for persons wearing self-contained breathing apparatus are provided to dry wells, and to wet wells; 2) stairway access to wet wells more than 4 feet deep containing either bar screens or mechanical equipment requiring inspection or maintenance; 3) for built-in-place pump stations, a stairway to the dry well with rest landings at vertical intervals not to exceed 12 feet; 4) for factory-built pump stations over 15 feet deep, a rigidly fixed landing at vertical intervals not to exceed 10 feet unless a manlift or elevator is provided; and 5) where a landing is used, a suitable and rigidly fixed barrier to prevent an individual from falling past the intermediate landing to a lower level. If a manlift or elevator is provided, emergency access is included in the design. [RSWF 42.23]
- SW 40. Specified construction materials are appropriate under conditions of exposure to hydrogen sulfide and other corrosive gases, greases, oils, and other constituents frequently present in wastewater. [RSWF 42.25]
- SW 41. Except for low-pressure grinder or STEP systems, multiple pumps are specified, and each pump has an individual intake. Where only two units are specified, they are of the same size. Specified units have capacity such that, with any unit out of service, the remaining units will have capacity to handle the design peak hourly flow. [RSWF 42.31 and 42.36]
- X 42. Bar racks are specified for pumps handling wastewater from 30 inch or larger diameter sewers. Where a bar rack is specified, a mechanical hoist is also provided. The design includes provisions for appropriate protection from clogging for small pump stations. [RSWF 42.322]
- X 43. Pumps handling raw wastewater are designed to pass spheres of at least 3 inches in diameter. Pump suction and discharge openings are designed to be at least 4 inches in diameter. [RSWF 42.33] (Note, this provision is not applicable to grinder pumps.)
- SW 44. The design requires pumps be placed such that under normal operating conditions they will operate under a positive suction head, unless pumps are suction-lift pumps. [RSWF 42.34]
- SW 45. The design requires: 1) pump stations be protected from lightning and transient voltage surges; and 2) pump stations be equipped with lightning arrestors, surge capacitors, or other similar protection devices and phase protection. Note, pump stations serving a single building are not required to provide surge protection devices if not necessary to protect the pump station. [62-604.400(2)(b), F.A.C.]
- SW 46. The design requires 1) electrical systems and components (e.g., motors, lights, cables, conduits, switch boxes, control circuits, etc.) in raw wastewater wet wells, or in enclosed or partially enclosed spaces where hazardous concentrations of flammable gases or vapors may be present, comply with the National Electrical Code requirements for Class I Group D, Division 1 locations; 2) electrical equipment located in wet wells be suitable for use under corrosive conditions; 3) each flexible cable be provided with a watertight seal and separate strain relief; 4) a fused disconnect switch located above ground be provided for the main power feed for all pump stations; 5) electrical equipment exposed to weather to meet the requirements of weatherproof equipment NEMA 3R or 4; 6) a 110 volt power receptacle to facilitate maintenance be provided inside the control panel for pump stations that have control panels outdoors; and 7) ground fault interruption protection be provided for all outdoor outlets. [RSWF 42.35]
- X 47. The design requires a sump pump equipped with dual check valves be provided in dry wells to remove leakage or drainage with discharge above the maximum high water level of the wet well. [RSWF 42.37]
- X 48. Pump station design capacities are based on the peak hourly flow and are adequate to maintain a minimum velocity of 2 feet per second in the force main. [RSWF 42.38]
- SW 49. The design includes provisions to automatically alternate the pumps in use. [RSWF 42.4]
- SW 50. The design requires: 1) suitable shutoff valves be placed on the suction line of dry pit pumps; 2) suitable shutoff and check valves be placed on the discharge line of each pump (except on screw pumps); 3) a check valve be located between the shutoff valve and the pump; 4) check valves be suitable for the material being handled; 5) check valves be placed on the horizontal portion of discharge piping (except for ball checks, which may be placed in the vertical run); 6) all valves be capable of withstanding normal pressure and water hammer; and 7) all shutoff and check valves be operable from the floor level and accessible for maintenance. [RSWF 42.5]
- SW 51. The effective volume of wet wells is based on design average flows and a filling time not to exceed 30 minutes unless the facility is designed to provide flow equalization. The pump manufacturer's duty cycle recommendations were utilized in selecting the minimum cycle time. [RSWF 42.62]
- X 52. The design requires wet well floors have a minimum slope of 1 to 1 to the hopper bottom and the horizontal area of hopper bottoms be no greater than necessary for proper installation and function of the inlet. [RSWF 42.63]

- X 53. For covered wet wells, the design provides for air displacement to the atmosphere, such as an inverted "j" tube or other means. [RSWF 42.64]
- X 54. The design provides for adequate ventilation all pump stations; mechanical ventilation where the dry well is below the ground surface; permanently installed ventilation if screens or mechanical equipment requiring maintenance or inspection are located in the wet well. Pump stations are designed with no interconnection between the wet well and dry well ventilation systems. [RSWF 42.71]
- X 55. The design requires all intermittently operated ventilation equipment to be interconnected with the respective pit lighting system and the manual lighting/ventilation switch to override the automatic controls. [RSWF 42.73]
- X 56. The design requires the fan wheels of ventilation systems be fabricated from non-sparking material and automatic heating and dehumidification equipment be provided in all dry wells. [RSWF 42.74]
- X 57. If wet well ventilation is continuous, design provides for at least 12 complete 100% fresh air changes per hour; if wet well ventilation is intermittent, design provides for at least 30 complete 100% fresh air changes per hour; and design requires air to be forced into wet wells by mechanical means rather than solely exhausted from the wet well. [RSWF 42.75]
- X 58. If dry well ventilation is continuous, design provides at least 6 complete 100% fresh air changes per hour; and dry well ventilation is intermittent, design provides for at least 30 complete 100% fresh air changes per hour, unless a system of two speed ventilation with an initial ventilation rate of 30 changes per hour for 10 minutes and automatic switch over to 6 changes per hour is used to conserve heat. [RSWF 42.76]
- EW 59. Pump stations are designed and located on the site to minimize adverse effects from odors, noise, and lighting. [62-604.400(2)(c), F.A.C.]
- EW 60. The design requires pump stations be enclosed with a fence or otherwise designed with appropriate features to discourage the entry of animals and unauthorized persons. Posting of an unobstructed sign made of durable weather resistant material at a location visible to the public with a telephone number for a point of contact in case of emergency is specified. [62-604.400(2)(d), F.A.C.]
- AW 61. The design requires suitable devices for measuring wastewater flow at all pump stations. Indicating, totalizing, and recording flow measurement are specified for pump stations with a 1200 gpm or greater design peak flow. [RSWF 42.8]
- EW 62. The project is designed with no physical connections between any potable water supplies and pump stations. If a potable water supply is brought to a station, reduced-pressure principle backflow-prevention assemblies are specified. [RSWF 42.9 and 62-555.30(4), F.A.C.]

Additional Items to be Completed for Suction-Lift Pump Stations

- X 63. The design requires all suction-lift pumps to be either self-priming or vacuum-priming and the combined total of dynamic suction-lift at the "pump off" elevation and required net positive suction head at design operating conditions not to exceed 22 feet. For self-priming pumps, the design requires: 1) pumps be capable of rapid priming and repriming at the "lead pump on" elevation with self-priming and repriming accomplished automatically under design operating conditions; 2) suction piping not to exceed the size of the pump suction or 25 feet in total length; and 3) priming lift at the "lead pump on" elevation to include a safety factor of at least 4 feet from the maximum allowable priming lift for the specific equipment at design operating conditions. For vacuum-priming pump stations, the design requires dual vacuum pumps capable of automatically and completely removing air from the suctionlift pumps and the vacuum pumps be adequately protected from damage due to wastewater. [RSWF 43.1]
- X 64. The design requires: 1) suction-lift pump equipment compartments to be above grade or offset and to be effectively isolated from the wet well to prevent a hazardous and corrosive sewer atmosphere from entering the equipment compartment; 2) wet well access not to be through the equipment compartment and to be at least 24 inches in diameter; 3) gasketed replacement plates be provided to cover the opening to the wet well for pump units to be remove for service; and 4) no valving be located in the wet well. [RSWF 43.2]

Additional Items to be Completed for Submersible Pump Stations

- X 65. Submersible pumps and motors are designed specifically for raw wastewater use, including totally submerged operation during a portion of each pump cycle and to meet the requirements of the National Electrical Code for such units. Provisions for detecting shaft seal failure or potential seal failure are included in the design. [RSWF 44.1]
- X 66. The design requires submersible pumps be readily removable and replaceable without dewatering the wet well or disconnecting any piping in the wet well. [RSWF 44.2]
- X 67. In submersible pump stations, electrical supply, control, and alarm circuits are designed to provide strain relief; to allow disconnection from outside the wet well; and to protect terminals and connectors from corrosion by location outside the wet well or through use of watertight seals. [RSWF 44.31]
- X 68. In submersible pump stations, the design requires the motor control center to be located outside the wet well, readily accessible, and protected by a conduit seal or other appropriate measures meeting the requirements of the National Electrical Code, to prevent the atmosphere of the wet well from gaining access to the control center. If a seal is specified, the motor can be removed and electrically disconnected without disturbing the seal. The design requires control equipment exposed to weather to meet the requirements of weatherproof equipment NEMA 3R or 4. [RSWF 44.32]
- X 69. In submersible pump stations, the design requires: 1) pump motor power cords be flexible and serviceable under conditions of extra hard usage and to meet the requirements of the National Electrical Code standards for flexible cords in wastewater pump stations; 2) ground fault interruption protection be used to deenergize the circuit in the event of any failure in the electrical integrity of the cable; and 3) power cord terminal fittings be corrosion-resistant and constructed in a manner to prevent the entry of moisture into the cable, provided with strain relief appurtenances, and designed to facilitate field connecting. [RSWF 44.33]
- X 70. In submersible pump stations, the design requires all shut-off and check valves be located in a separate valve pit. Provisions to remove or drain accumulated water from the valve pit are included in the design. [RSWF 44.4]

Emergency Operations for Pump Stations

71. Pump stations are designed with an alarm system which activates in cases of power failure, sump pump failure, pump failure, unauthorized entry, or any cause of pump station malfunction. Pump station alarms are designed to be telemetered to a facility that is manned 24 hours a day. If such a facility is not available and a 24-hour holding capacity is not provided, the alarm is designed to be telemetered to utility offices during normal working hours and to the home of the responsible person(s) in charge of the lift station during off-duty hours. Note, if an audio-visual alarm system with a self-contained power supply is provided in lieu of a telemetered system, documentation is provided in Part II.C. showing an equivalent level of reliability and public health protection. [RSWF 45]
72. The design requires emergency pumping capability be provided for all pump stations. For pump stations that receive flow from one or more pump stations through a force main or pump stations discharging through pipes 12 inches or larger, the design requires uninterrupted pumping capability be provided, including an in-place emergency generator. Where portable pumping and/or generating equipment or manual transfer is used, the design includes sufficient storage capacity with an alarm system to allow time for detection of pump station failure and transportation and connection of emergency equipment. [62-604.400(2)(a)1. and 2., F.A.C., and RSWF 46.423 and 46.433]
73. The design requires: 1) emergency standby systems to have sufficient capacity to start up and maintain the total rated running capacity of the station, including lighting, ventilation, and other auxiliary equipment necessary for safety and proper operation; 2) special sequencing controls be provided to start pump motors unless the generating equipment has capacity to start all pumps simultaneously with auxiliary equipment operating; 3) a riser from the force main with rapid connection capabilities and appropriate valving be provided for all pump stations to hook up portable pumps; and 4) all pump station reliability design features be compatible with the available temporary service power generating and pumping equipment of the authority responsible for operation and maintenance of the collection/transmission system. [62-604.400(2)(a)3., F.A.C., and RSWF 46.431]
74. The design provides for emergency equipment to be protected from operation conditions that would result in damage to the equipment and from damage at the restoration of regular electrical power. [RSWF 46.411, 46.417, and 46.432]

- X 75. For permanently-installed internal combustion engines, underground fuel storage and piping facilities are designed in accordance with applicable state and federal regulations; and the design requires engines to be located above grade with adequate ventilation of fuel vapors and exhaust gases. [RSWF 46.414 and 46.415]
- X 76. For permanently-installed or portable engine-driven pumps are used, the design includes provisions for manual startup. [RSWF 46.422]
- X 77. Where independent substations are used for emergency power, each separate substation and its associated transmission line is designed to be capable of starting and operating the pump station at its rated capacity. [RSWF 46.44]

Force Mains

- X 78. Force mains are designed to maintain, at design pumping rates, a cleansing velocity of at least 2 feet per second. The minimum force main diameter specified for raw wastewater is not less than 4 inches. [RSWF 48.1]
- JME 79. The design requires: 1) branches of intersecting force mains be provided with appropriate valves such that one branch may shut down for maintenance and repair without interrupting the flow of other branches; and 2) stubouts on force mains, placed in anticipation of future connections, be equipped with a valve to allow such connection without interruption of service. [604.400(2)(f), F.A.C.]
- JME 80. The design requires air relief valves be placed at high points in the force main to prevent air locking. [RSWF 48.2]
- JME 81. Specified force main pipe and joints are equal to water main strength materials suitable for design conditions. The force main, reaction blocking, and station piping are designed to withstand water hammer pressures and stresses associated with cycling of wastewater pump stations. [RSWF 48.4]
- JME 82. When the Hazen and Williams formula is used to calculate friction losses through force mains, the value for "C" is 100 for unlined iron or steel pipe for design. For other smooth pipe materials, such as PVC, polyethylene, lined ductile iron, the value for C does not exceed 120 for design. [RSWF 48.61]
- JME 83. Where force mains are constructed of material, which might cause the force main to be confused with potable water mains, specifications require the force main to be clearly identified. [RSWF 48.7]
- JME 84. Leakage tests for force mains are specified including testing methods and leakage limits. [RSWF 48.8]

*RSWF = *Recommended Standards for Wastewater Facilities* (1997) as adopted by rule 62-604.300(5)(c), F.A.C.

B. Explanation for Requirements or Standards Marked "X" in II(5)A. Above (Attach additional sheets if necessary):

The proposed system consists of an above ground pump station pumping at 40GPM through a 4" force main. There are no manholes.

The proposed pipe does not cross any streams.

The proposed system is pumping filtered water with no solids, therefore 2FPS cleaning velocity is not needed.

PART III - CERTIFICATIONS

(1) Collection/Transmission System Permittee

I, the undersigned owner or authorized representative* of PBS&J am fully aware that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. I agree to retain the design engineer or another professional engineer registered in Florida, to conduct on-site observation of construction, prepare a certification of completion of construction, and to review record drawings for adequacy. Further, I agree to provide an appropriate operation and maintenance manual for the facilities pursuant to Rule 62-604.500(4), F.A.C., and to retain a professional engineer registered in Florida to examine (or to prepare if desired) the manual. I am fully aware that Department approval must be obtained before this project is placed into service for any purpose other than testing for leaks and testing equipment operation.

Signed

Name Frank Coggins

Date

Title Project Manager

*Attach a letter of authorization.

(2) Owner of Collection/Transmission System

I, the undersigned owner or authorized representative* of Sarasota County Utilities certify that we will be the Owner of this project after it is placed into service. I agree that we will operate and maintain this project in a manner that will comply with applicable Department rules. Also I agree that we will promptly notify the Department if we sell or legally transfer ownership of this project.

Signed _____ Date _____
Name MIKE MEHAN, PE Title General Manager- Sarasota County Utilities
Company Name Sarasota County
Address 1301 CATTLEMEN ROAD
City Sarasota State Florida Zip 34232
Telephone 941-650-2050 Fax _____ Email MMEHAN@SCGOV.NET

* Attach a letter of authorization.

(3) Wastewater Facility Serving Collection/Transmission System**

If this is a Notice of Intent to use a general permit, check here:

- ☐ The undersigned owner or authorized representative* of the _____ wastewater facility hereby certifies that the above referenced facility has the capacity to receive the wastewater generated by the proposed collection system; is in compliance with the capacity analysis report requirements of Rule 62-600.405, F.A.C.; is not under a Department order associated with effluent violations or the ability to treat wastewater adequately; and will provide the necessary treatment and disposal as required by Chapter 403, F.S., and applicable Department rules.

If this is an application for an individual permit, check one:

- ☐ The undersigned owner or authorized representative* of the _____ wastewater facility hereby certifies that the above referenced facility has and will have adequate reserve capacity to accept the flow from this project and will provide the necessary treatment and disposal as required by Chapter 403, F.S., and applicable Department rules.
- ☐ The undersigned owner or authorized representative* of the _____ wastewater facility hereby certifies that the above referenced facility currently does not have, but will have prior to placing the proposed project into operation, adequate reserve capacity to accept the flow from this project and will provide the necessary treatment and disposal as required by Chapter 403, F.S., and applicable Department rules.

Name of Treatment Plant Serving Project	<u>City of Venice Wastewater Treatment Plant</u>		
County	<u>Sarasota</u>	City	<u>Venice</u>
DEP permit number	<u>FL 0041441</u>	Expiration Date	<u>4/24/05 Extended</u>
Maximum monthly average daily flow over the last 12 month period	<u>3.590</u>	MGD	Month(s) used <u>feb-05</u>
Maximum three-month average daily flow over the last 12 month period	<u>3.259</u>	MGD	Month(s) used <u>Dec. 04, Jan 05</u>
Current permitted capacity	<u>6MGD</u>	MGD	<input type="checkbox"/> AADF <input type="checkbox"/> MADF <input checked="" type="checkbox"/> TMADF
Current outstanding flow commitments (including this project) against treatment plant capacity:	<u>Unknown</u>		

Signed R. Christopher Sharek Date 7/5/05
Name R Christopher Sharek, PE Title Utilities Manager
Address 200 N. Warfield Avenue
City Venice State Florida Zip 34292
Telephone 941480-3333 ext 224 Fax 941486-2084 Email csharek@ci.venicefl.us

* Attach a letter of authorization.

** If there is an intermediate collection system, a letter shall be attached certifying that the intermediate downstream collection system has adequate reserve capacity to accept the flow from this project.

(4) Professional Engineer Registered in Florida

I, the undersigned professional engineer registered in Florida, certify that I am in responsible charge of the preparation and production of engineering documents for this project; that plans and specifications for this project have been completed; that I have expertise in the design of wastewater collection/transmission systems; and that, to the best of my knowledge and belief, the engineering design for this project complies with the requirements of Chapter 62-604, F.A.C.

(Affix Seal)

Signed
Date

[Signature]
6/1/05

Name John M. Eash, P.E. Florida Registration No. 46235
Company Name PBS&J
Address 2803 Fruitville Road, Suite 130
City Sarasota State Florida Zip 34237
Telephone 954-4036 Fax 951-1477 Email jmeash@pbsj.com
Portion of Project for Which Responsible Pipe Layout

(Affix Seal)

Signed
Date

[Signature]
6/1/05

Name Dave A. Weber, P.E. Florida Registration No. 29323
Company Name PBS&J
Address 2803 Fruitville Road, Suite 130
City Sarasota State Florida Zip 34237
Telephone 954-4036 Fax 951-1477 Email DAWeber@pbsj.com
Portion of Project for Which Responsible Pump Station

(Affix Seal)

Signed
Date

Name _____ Florida Registration No. _____
Company Name _____
Address _____
City _____ State _____ Zip _____
Telephone _____ Fax _____ Email _____
Portion of Project for Which Responsible _____



SARASOTA COUNTY

"Dedicated to Quality Service"

October 27, 2005

RECEIVED

OCT 31 2005

PBS & J. INC.
SARASOTA

Frank Coggins, Manager
Sarasota County Solid Waste
4000 Knights Trail Road
Nokomis, Florida 34275

NOTICE OF PERMIT ISSUANCE

In the Matter of an
Application for Permit by:

PERMIT NUMBER: CS58-255109
PROJECT: Central County L/F - Leachate F/M
COUNTY: Sarasota
CONNECTED TO: Venice Eastside

ATTN: Frank Coggins
Manager

Enclosed is Permit Number CS58-255109 to construct a domestic wastewater collection/transmission system, issued pursuant to Section 403.087(1), Florida Statutes (F.S.).

Water Resources' proposed agency action shall become final unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S., within fourteen days of receipt of notice. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the proposed permitting decision of Water Resources may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S.

The petition must contain the information set forth below and must be filed (received) in the Office of the County Attorney, 1660 Ringling Boulevard, Sarasota, Florida 34236. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this written notice. Petitions filed by any person other than those entitled to written notice under Section 120.60(3), F.S., must be filed within fourteen days of publication of the notice or within fourteen days of receipt of the written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who has asked Water Resources for notice of agency action may file a petition within fourteen days of receipt of such notice, regardless of the date of publication. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, Florida Administrative Code (F.A.C.).

A petition must contain the following information:

- (a) The name, address, and telephone number of each petitioner; Water Resources' permit identification number and the county in which the subject matter or activity is located;
- (b) A statement of how and when each petitioner received notice of Water Resources' action;
- (c) A statement of how each petitioner's substantial interests are affected by Water Resources' action;
- (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
- (e) A statement of facts that the petitioner contends warrants reversal or modification of Water Resources' action;
- (f) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; and
- (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants Water Resources to take.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the final action of Water Resources may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of Water Resources on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation under Section 120.573, F.S., is not available for this proceeding.

This action is final and effective on the date filed with the Clerk of Water Resources unless a petition is filed in accordance with the above. Upon the timely filing of a petition this order will not be effective until further order of Water Resources.

Any party to the order has the right to seek judicial review of the order under Section 120.68, F.S., by the filing of a Notice of Appeal under Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Office of the County Attorney, 1660 Ringling Boulevard, Sarasota, Florida 34236; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal.

The Notice of Appeal must be filed within 30 days from the date when the final order is filed with the Clerk of Water Resources.

Executed in Sarasota, Florida.

Theresa Connor

Theresa Connor, P.E. *for TC*

General Manager

Water Resources

CERTIFICATE OF SERVICE

The undersigned duly designated Water Resources Clerk hereby certifies that this NOTICE OF PERMIT ISSUANCE and all copies were mailed before the close of business on 10/27/05 to the listed persons.

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated Water Resources Clerk, receipt of which is hereby acknowledged.

By:

[Signature]
Clerk

[Signature]
Date

Enclosure

cc: John M. Eash, P.E., PBS&J
Dave A. Weber, P.E., PBS&J
R. Christopher Sharek, Utilities Manager, City of Venice
Michael Mehan, Engineering Section Supervisor, Development Services
Veronica Moore, Permitting Coordinator, Development Services

C05PC.179

This page left intentionally blank



SARASOTA COUNTY

"Dedicated to Quality Service"

STATE OF FLORIDA DOMESTIC WASTEWATER COLLECTION/TRANSMISSION INDIVIDUAL PERMIT

PERMITTEE

Frank Coggins, Manager
Sarasota County Solid Waste
4000 Knights Trail Road
Nokomis, Florida 34275

PERMIT/CERTIFICATION

Permit No: CS58-255109
Date of Issue: October 27, 2005
Expiration Date: October 26, 2010
County: Sarasota
Project: Central County L/F - Leachate F/M
Connected To: Venice Eastside

ATTN: Frank Coggins
Manager

This permit is issued by Water Resources under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4 and 62-604, Florida Administrative Code (F.A.C.). Sarasota County Water Resources issues this permit as a delegated local program of the Florida Department of Environmental Protection (Department).

The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and other documents, attached hereto or on file with Water Resources and made a part hereof and specifically described as follows:

Description of Project: A wastewater sewage collection and transmission system with an anticipated flow of 20,550 gallons per day (GPD) to serve a commercial development of a permitted landfill leachate collection system. The system consists of approximately 5.2 miles of 4-inch force main and pump station located at 4000 Knights Trail Road, Sarasota County, Florida with treatment at the City of Venice Eastside Wastewater Treatment Facility (FL0041441).

This is a DRY line approval and requires separate Water Resources approval prior to being placed in service.

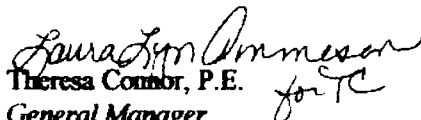
Location: 4000 Knights Trail Road, Sarasota County, Florida

Permittee: Frank Coggins, Manager, Sarasota County Solid Waste

Permit No: CS58-255109

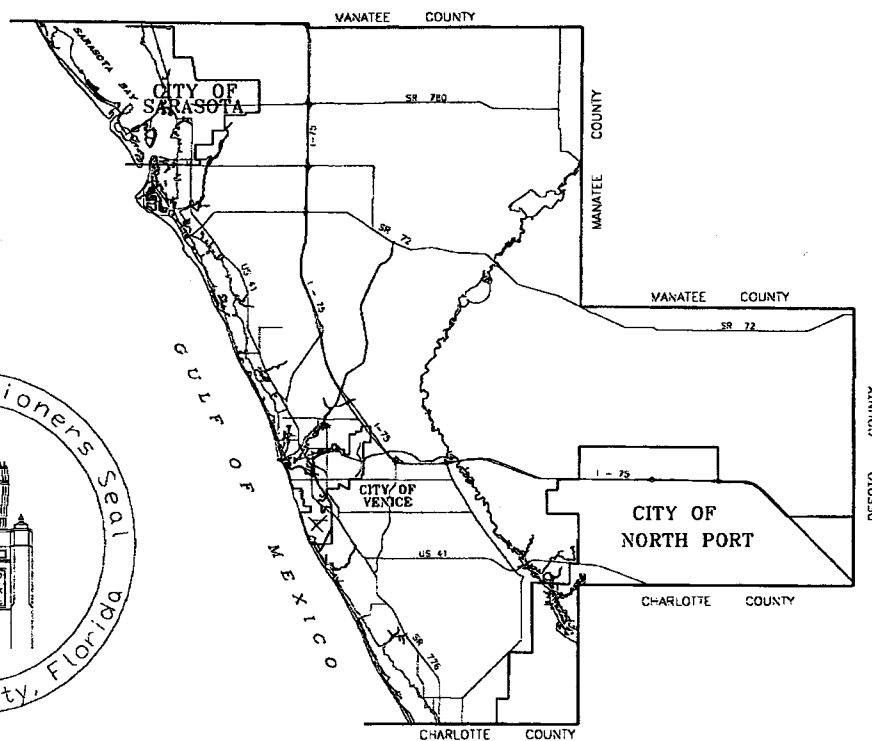
SPECIFIC CONDITIONS:

1. This permit is subject to the general conditions of Rule 62-4.160, F.A.C., as applicable. This rule is available at the Department's Internet site at:
<http://www.dep.state.fl.us/water/wastewater/rules.htm#domestic> [62-4.160, 5-1-03]
2. Upon completion of construction of the collection/transmission system project, and before placing the facilities into operation for any purpose other than testing for leaks or testing equipment operation, the permittee shall submit to Water Resources Form 62-604.300(8)(b), Request for Approval to Place a Domestic Wastewater Collection/Transmission System into Operation. This form is available at the Department's Internet site at:
<http://www.dep.state.fl.us/water/wastewater/forms.htm> [62-604.700(2), 11-6-03]
3. The new or modified collection/transmission facilities shall not be placed into service until Water Resources clears the project for use. [62-604.700(3), 11-6-03]
4. Permit Revisions shall only be made in accordance with Rule 62-4.050(4)(s), F.A.C. Request for revisions shall be made to Water Resources in writing and shall include the appropriate fee. Revisions not covered under Rule 62-4.050(4)(s), F.A.C. shall require a new permit.
[62-604.600(8), 11-6-03]
5. Abnormal events, including unauthorized spills and releases, shall be reported to Florida Department of Environmental Protection Southwest District Office, Tampa at (813) 744-6100 and Water Resources at (941) 861-6220 within 24 hours from the time the permittee, or other designee becomes aware of the circumstances in accordance with Rule 62-604.550, F.A.C. Unauthorized spills of wastewater in excess of 1,000 gallons per incident, or where information indicates that public health or the environment may be endangered, oral reports shall also be provided to the STATE WARNING POINT TOLL FREE NUMBER (800) 320-0519 as soon as practical, but no later than 24 hours from the time the permittee or other designee becomes aware of the circumstances. [62-604.550, 11-6-03]
6. This permit is for CONSTRUCTION ONLY of the collection/transmission system project. This permit does not authorize the connection of this collection/transmission system project to the designated wastewater treatment plant. This permit shall not be construed to infer that the clearance necessary for connection shall be granted. Any such clearance shall be granted only when reasonable assurance is given that adequate treatment and disposal is available in accordance with Water Resources rules, regulations, and permits. Partial clearance may be granted, if required. [62-604.130(1) and 62-604.600(7), 11-6-03]


Theresa Connor, P.E. *for TC*
General Manager
Water Resources

SARASOTA COUNTY
CENTRAL COUNTY LANDFILL LEACHATE FORCE MAIN AND
PUMP STATION
CONSTRUCTION PROJECT
BID NO. 6125JW

Dept. of Environmental
Remediation
APR 27 2006
Southwest District



OCTOBER 2005

J. M. G.
46235
4/26/06

FILE

This page left intentionally blank

Dept. of Environmental
Protection

APR 27 2006

Southwest District

**SARASOTA COUNTY ENVIRONMENTAL SERVICES
SARASOTA COUNTY, FLORIDA
UTILITY SYSTEM**

CENTRAL COUNTY LANDFILL LEACHATE FORCE MAIN AND PUMP STATION

BID NO. 6125JW

CIP NO. 95209

OCTOBER 2005

**PREPARED BY: SARASOTA COUNTY ENVIRONMENTAL SERVICES
UTILITIES**

This page left intentionally blank

TABLE OF CONTENTS
SARASOTA COUNTY ENVIRONMENTAL SERVICES, UTILITIES
SARASOTA COUNTY, FLORIDA

CENTRAL COUNTY LANDFILL LEACHATE FORCE MAIN AND PUMP STATION

<u>DIVISION</u>	<u>DESCRIPTION</u>	<u>NO. OF PAGES</u>
TC	Table of Contents	3
INB	Invitation for Bids	1
PBDAF	Public Bid Disclosure Act Form	2
ITC	Instructions Terms and Conditions	10
BF	Bid Form	5
BB	Bid Bond	2
CQF	Contractor's Qualification Form	1
GC	General Conditions	23
C	Construction Contract	10
PB	Performance and Payment Bond	2
DFW	Drug Free Workplace Affidavit	1
MBE	Sarasota County Government MBE Form	2
RL	Contractor's Final Affidavit and Release of Lien	2

This page left intentionally blank

TABLE OF CONTENTS
SARASOTA COUNTY ENVIRONMENTAL SERVICES, UTILITIES
SARASOTA COUNTY, FLORIDA
TECHNICAL SPECIFICATIONS
Applicable sections of Divisions 1-16 for Bid 6125JW are listed below

<u>SECTION</u>	<u>DESCRIPTION</u>
INSERT	DIVISION ONE - GENERAL REQUIREMENTS
00500	General
00600	Prevention, Control and Abatement of Erosion and Water Pollution
01026	Measurement & Payment
01050	Field Engineering
01200	Project Meetings
01300	Submittals
01310	Construction Schedules
01400	General Quality Control
01500	Temporary Facilities and Controls
01666	Testing Piping System
01700	Project Closeout
INSERT	DIVISION TWO - UTILITY SITE WORK
02110	Site Clearing
02222	Excavating, Backfilling and Compacting
02300	Directional Drilling
02400	Lawn Restoration
02530	Groundwater Control for Open Cut Excavation
02610	Fittings
02615	Ductile Iron Pipe/Fitting Liners
02616	Polyvinyl Chloride (PVC) Pipe
02618	High Density Polyethylene (HDPE) Pipe
02640	Valves and Accessories
02900	Leachate Pump Station
INSERT	DIVISION THREE - CONCRETE
03301	Concrete
INSERT	DIVISION FOUR - FINISHES
09905	Painting and Protective Coatings
INSERT	DIVISION FIVE - ENVIRONMENTAL CONTROLS
12000	Storm Water Management for Construction Activities
	Summary Guide

TABLE OF CONTENTS
SARASOTA COUNTY ENVIRONMENTAL SERVICES, UTILITIES
SARASOTA COUNTY, FLORIDA

INSERT 16470	DIVISION SIX Control Panels for Duplex Pump Stations
INSERT	DIVISION SEVEN – PERMITS State of Florida Domestic Wastewater Collection/Transmission Individual Permit
INSERT	DIVISION EIGHT – DRAWINGS

**SARASOTA COUNTY GOVERNMENT
INVITATION FOR BIDS
CONSTRUCTION PROJECT**

The Sarasota County Government invites sealed bids from qualified Contractors to perform the following work, which is described in detail in the County Specifications.

BID NUMBER: 6125JW

BID TITLE: CENTRAL COUNTY LANDFILL LEACHATE FORCE MAIN AND PUMP STATION

CIP NUMBER: 95209

PROJECT DESCRIPTION: Propose to construct a pump station and a 5.2 mile 4" diameter force main to pump leachate from the Central County Landfill to Lift Station 376-0527 on Knights Trail Road just north of Laurel Road.

BID OPENING LOCATION: Third Floor Procurement Conference Room, Sarasota County Administration Center, 1660 Ringling Boulevard

BID OPENING DATE & TIME: February 8, 2006 @ 2:30 PM

PRE-BID CONFERENCE: Tuesday January 17th, 2006 @ 10:00 AM, Central County Solid Waste Disposal Complex, 4000 Knights Trail Road, Nokomis Fl. 34275 Phone, 941-861-1583

Specifications and bid documents are available by calling Demand Star at (800) 711-1712 or by their Internet address at www.demandstar.com. Bidders may also pick up bid documents at PBS&J, 2803 Fruitville Road, Sarasota Florida, 34237, (941) 954-4036, for \$125.00 a set (non-refundable). Bids must be submitted in triplicate at least one of which must bear an original signature, in a sealed envelope marked "SEALED BIDS FOR BID No. 6125JW, CENTRAL COUNTY LANDFILL LEACHATE FORCE MAIN AND PUMP STATION, and mailed or delivered to Sarasota County Government, General Services, Procurement, County Administration Center, 1660 Ringling Boulevard, Sarasota, Florida, 34236. The County assumes no responsibility for bids received after the bid submittal time or at any location other than that specified, no matter what the reason. Late bids will be held unopened and will not be considered for award.

A bid bond or certified cashier's check payable to the Board of County Commissioners, equal to five percent (5%) of the total bid must be enclosed with the bid. Any bonding company submitting a bid or performance bond to Sarasota County Government must be licensed to transact a fidelity and surety business in the State of Florida, must hold a Certificate of Authority from the Secretary of the Treasury under Act of Congress, approved on July 30, 1947 (U.S.C. 613), and must meet the bond requirements listed in the bid specifications. Bidders are advised that a performance and payment bond of 100% of the contract amount will be required.

PUBLISH: January 6, 2006
OPEN: February 8, 2006

**GENERAL SERVICES BUSINESS CENTER
PROCUREMENT
SARASOTA COUNTY GOVERNMENT**

This page left intentionally blank

**SARASOTA COUNTY GOVERNMENT
PUBLIC BID DISCLOSURE ACT FORM**

Project Name: **CENTRAL COUNTY LANDFILL LEACHATE FORCE MAIN AND PUMP STATION** Bid Number: 6125JW Pursuant to Section 218.80, Florida Statute (1995), Sarasota County hereby discloses that the following Licenses, Permits, and Fees (and their costs) are issued by Sarasota County Government and/or Sarasota County Elected Officials for Construction within Sarasota County. The licenses, Permits, and Fees applicable to this Project are indicated below and must be obtained and/or paid by the successful bidder. Vendors are hereby warned that the Licenses, Permits, and Fees listed below are only Licenses, Permits, and Fees "issued by Sarasota County Government." The successful bidder is totally responsible to identify and obtain all other applicable Licenses, Permits, and Fees. The cost of all Licenses, Permits, and Fees applicable to this Project are to be included in the price(s) bid in this invitation to bid.

A. Sarasota County Licenses:

		<u>License Cost</u>	<u>Applicable to Project*</u>
1.	Sarasota County Occupational License:	\$ 200.00	X
2.	Sarasota County Certificate of Competency and/or Operating Certificate or License:		
a.	General Contractor - Class A	\$ 284.00	
b.	Building Contractor - Class B	\$ 192.00	
c.	Residential Contractor - Class C	\$ 100.00	
d.	Electrical Contractor	\$ 100.00	
e.	Plumbing Contractor	\$ 100.00	
f.	Mechanical Contractor	\$ 100.00	
g.	Class "A" Air Conditioning Contractor	\$ 100.00	
h.	Class "B" Air Conditioning Contractor	\$ 100.00	
i.	Class "C" Air Conditioning Contractor - Service Only	\$ 100.00	
j.	Roofing Contractor	\$ 100.00	
k.	Aluminum Contractor - Specialty, including Concrete	\$ 50.00	
l.	Commercial Pool Contractor	\$ 100.00	
m.	Residential Pool Contractor	\$ 100.00	
n.	Swimming Pool Servicing Contractor	\$ 100.00	
o.	Underground Utility Contractor - See Plumber/Electrician	\$ 0.00	
p.	Marine Specialty Contractor	\$ 50.00	
q.	Structural Masonry/Concrete Specialty Contractor	\$ 50.00	
r.	Natural Gas Specialty Contractor - See Plumber	\$ 0.00	
s.	Irrigation System Specialty Contractor - See Plumber	\$ 50.00	
t.	Water Conditioning Installer - Exempt	\$ 0.00	
u.	Journeyman Plumber	\$ 14.00	

- Only those items marked with a "YES" in this Column are applicable to this project.

State certified or licensed contractors with State issued certificates or licenses in one or more of the above categories need only to submit proof of certification to be exempt from obtaining or paying the cost of the matching Sarasota County certificates or licenses.

3. List other applicable Sarasota County Government Certificates and/or Licenses and their cost:

1. _____
2. _____
3. _____
4. _____

4. Sarasota County Applicable Permits and Costs not listed herein:

1. Sarasota County Utilities construction permit. Permit fee is 6.5% of construction cost of force main only.
2. _____
3. _____
4. _____
5. _____

5. Sarasota County Applicable Fees and Costs not listed herein:

1. _____
2. _____
3. _____
4. _____
5. _____

6. Sarasota County Applicable Licenses, Permits, and Fees not listed herein:

1. _____
2. _____
3. _____
4. _____
5. _____

Instructions to the Project Sponsoring Sarasota County Department: Complete this form by indicating the applicable Sarasota County Licenses, Permits, and Fees and include this form in the Bid Specifications for this Project. Add any applicable Sarasota County Licenses, Permits, and Fees not listed and their costs.

Instructions Terms and Conditions Construction

1.1 BID DELIVERY REQUIREMENTS

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

1.2 SEALED & MARKED

Submit (3) three copies of your bid, at least one of which must bear an original signature. The bids shall be submitted in one (1) sealed package, clearly marked on the outside with your Company name, Project Title, and Bid Number to:

Sarasota County Asset Management Office
1660 Ringling Boulevard, 3rd Floor
Sarasota, Florida 34236

1.3 IRREVOCABLE OFFER

Any bid may be withdrawn until the date and time set for opening of the bid. Any bid not so withdrawn shall, upon opening, constitute an irrevocable offer for a period of 120 days to sell to Sarasota County the goods or services set forth in the attached specifications.

1.4 INTERPRETATION OF ESTIMATED QUANTITIES

The estimated quantities of work and materials given in the Bid Form are considered approximate only and are to be used solely for the comparison of Bids received. The County does not expressly or by implication represent that actual quantities involved will correspond exactly therewith; nor shall the Bidder plead misunderstanding or deception because of such estimate neither of quantities nor of the character, location or other conditions pertaining to the work. Payment to the Contractor will be made only for the actual quantities of work performed or materials furnished in accordance with the plans and other Contract documents. It is understood that the quantities may be increased, decreased or provided in the Contract Documents without invalidating any of the unit or lump sum prices Bid.

1.5 MATHEMATICAL ERRORS

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

1.6 DELIVERY

Unless otherwise specified, all prices are to be FOB-delivered prices, to any location in the County. Should a bid call for delivery to either north or south County alone, with separate bid prices, the dividing line is Blackburn Point Road, between Laurel and Osprey, Florida.

1.7 CONTRACT FORMS

Any agreement, contract, or Purchase Order resulting from the acceptance of a bid shall be in a form either supplied by or approved by the County.

1.8 EXAMINATION OF BID DOCUMENTS AND SITE

The Bidder shall carefully examine the site of the work, the plans, and other Bid documents for the work contemplated. It is assumed that the Bidder shall investigate and is fully informed of the construction and labor conditions, of obstructions to be encountered, of the character, quality and quantities of work to be performed, materials to be furnished, and requirements of the plans and other Bid documents. Failure to do so does not relieve a successful Bidder of his obligations to furnish all materials, equipment, and labor necessary to carry out the provisions of the Contract documents and to complete the contemplated work for the consideration set forth in his Bid. Submission of a Bid constitutes an incontrovertible representation that the Bidder has complied with every requirement of this paragraph and that Bid documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of work.

1.9 BID EXPENSES

Bidders shall bear all costs and expenses incurred in developing, preparing, and submitting bids.

1.10 RESERVED RIGHTS

The County reserves the right to accept or reject any or all bids, to waive minor irregularities and technicalities, and to request resubmission. Also, the County reserves the right to accept all or any part of the bid and to increase or decrease quantities to meet additional or reduced requirements of the County. Furthermore, the County may reject bids, which exceed budgetary constraints, whether in total or by source(s) of funds. Any sole response received by the first submission date may or may not be rejected by the County depending on available competition, budget constraints and current needs of the County.

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

Revised 01/05/04

Bidders are required to bid their prices on the bid forms supplied by the County in the bid document. All blank spaces must be filled in as noted, in ink or typed, and no changes shall be made in the forms or in the items mentioned therein. Bids, at the sole discretion of the County, may be deemed non-responsive if these bid forms are not used and duly signed by an authorized representative of the bidder.

At the sole discretion of the County any bid may be rejected for but not limited to the following reasons: any omissions, erasures, alterations, additions, irregularities of any kind, or items not called for, or which does not contain prices set opposite to each of the several items in the bid form; a Bidder submits more than one bid for the same work by an individual, firm, partnership or corporation under the same or different names; there is evidence of collusion among those submitting bids; there is previous participation by the bidder in collusive bids on work for the Board of County Commissioners, Sarasota County, Florida; the bidder submits an unbalanced bid in which the prices for some items are out of proportion with the prices for other bid items or which shall in any manner fail to conform to the conditions of the published notice inviting bids; there is any uncompleted work for which the bidder is committed by Contract which, in the determination of the County bidder is delinquent, behind schedule, or in other material ways not in compliance with said contract.

The County may review the scope of work with the apparent low bidder before accepting the bid. Before award of the Contract, the low bidder shall furnish to the County an analysis of his bid prices, if requested to do so.

The County reserves the right, in its sole opinion, to purchase items listed in this bid through the State of Florida Contracts. The County reserves the right to solicit separate bids for requirements that are a portion of a larger contract bid as a whole. Additionally, at the County's sole option, additional contracts may be entered into as a result of such situations as unusual volumes, time/delivery requirements, special requirements, other brands, lease, project specific requirements, or similar situations. After award of this bid the County reserves the right to add or delete items/services at prices to be negotiated at the time of addition or deletion.

1.11 CLARIFICATION & ADDENDA

Any inquiries, suggestions or requests concerning interpretation, clarification or additional information pertaining to the Bid documents shall be made in writing to **Sarasota County Government, Asset Management, 1660 Ringling Boulevard, Sarasota, Florida 34236, fax 941-861-5171 or 941-861-5129, specifying the Bid Name and Title.** and must be received by 5:00 PM EST seven (7) calendar days prior to the opening of the Bids to be considered. After the issuance of the Invitation For Bid, prospective bidders or any agent, representative or person acting at the request of such bidder shall not contact, communicate with or discuss any matter relating in any way to the bid with any officer, agent or employee of Sarasota County other than the Purchasing Official or his designee. This prohibition begins with the issuance of any Invitation For Bid, and ends upon execution of the final contract or when the invitation or request has been canceled. Violation of this prohibition may result in the bidder being considered non-responsive and their bid rejected. The issuance of a written addendum is the only official method whereby interpretation, clarification or additional information can be given. If any addenda are issued to this Invitation for Bid, the County will attempt to notify all prospective

Revised 01/05/04

bidders who have secured same; however, it shall be the responsibility of each bidder, prior to submitting their bid, to contact the Sarasota County Asset Management Office to determine if addenda were issued and to make such addenda a part of their bid.

Should the bidder discover any ambiguity, inconsistency, or error, bidder will be required to seek an interpretation as described above in advance of submitting the bid or otherwise will be prohibited from taking advantage of such ambiguity, inconsistency or error. If bidder has not received a written clarification on an ambiguity, the bidder shall be required to submit his bid on the basis of the highest price necessary to complete the task in question.

1.12 QUALITY GUARANTEE

Unless otherwise specifically provided in the specifications, all equipment, materials and articles incorporated in the work covered by this contract shall be new and of the most suitable grade for the purpose intended.

Except where specifically noted (no substitutions), reference to any equipment, material, article or patented process, by trade name, brand name, make or catalog number, shall be regarded as establishing a level of quality, performance, warranty, etc. required and shall not be construed as limiting competition. Where products are specified by name and accompanied by the term "or approved," "or approved substitution", or "or approved equal" the bidder may propose an alternative, but must do so in writing no later than ten (10) days prior to bid opening. The submittal must consist of but may not be limited to the following.

- Evidence that the proposed product does not require extensive revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
- Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
- Evidence that proposed product provides specified warranty.
- List of similar installations for completed projects with project names and addresses and names and addresses of Engineers and owners, if requested.

Any such substitution shall be subject to written County approval prior to bid opening. Substitutions shall be approved only if determined by the County to be equivalent to the prescribed specifications.

A bid containing a substitution is subject to disqualification if the substitution is not approved by the County.

1.13 ROYALTIES AND PATENTS

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

1.14 APPLICABLE LAWS

Bidders must be authorized to transact business in the State of Florida. All applicable laws and regulations of the State of Florida and ordinances and regulations of Sarasota County will apply to any resulting agreement. Any involvement with Sarasota County shall be in accordance with Sarasota County Procurement Code Ordinance 84-69 as amended.

It shall be the responsibility of the bidder to assure compliance with any OSHA, EPA and/or other Federal or State of Florida rules, regulations or other requirements, as each may apply. All work shall comply with Sarasota County codes and regulations.

1.15 SWORN STATEMENT, COMPLIANCE WITH FLORIDA TRENCH ACT

Bidder shall be solely responsible for complying with the Florida Trench Safety Act (553.60-553.64 Florida Statutes) and Occupational Safety and Health Administration excavation safety standards, 29 CFR 1926.650 (subpart P) as amended. All costs associated with complying with these requirements shall be included in the separate line items of the Bid and shall be as detailed in the Sworn Statement of Compliance with the Florida Trench Safety Act. Bidder shall submit the Statement of Compliance with the Florida Trench Safety Act form provided herein with his Bid.

1.16 DRUG FREE WORKPLACE

Pursuant to Section 287.087, Florida Statutes, whenever two or more bids which are equal with respect to price, quality and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process.

1.17 PUBLIC ENTITY CRIMES

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

1.18 COLLUSION

By offering a response to this Invitation for Bids the bidder certifies that he/she has not divulged to, discussed or compared his bid with other bidders and has not colluded with any other bidder or parties to this Invitation for Bids whatsoever. Also, bidder certifies, as to their own organization that in connection with this Invitation for Bids:

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

Revised 01/05/04

- b) Any prices and/or cost data quoted for this Invitation for Bids have not been knowingly disclosed by the bidder, and will not be knowingly be disclosed by the bidder prior to the scheduled opening directly or indirectly to any competitor;
- c) No attempt has been made or will be made by the bidder to induce any other person or firm to submit or not to submit a bid for the purpose of restricting competition;
- d) The only person or persons interested in this Invitation for Bids as principal or principals is/are named therein and that no person other than therein mentioned has any interest in this Invitation for Bids, or in the contract to be entered into; and
- e) No person or agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee except bona fide employees or established commercial agencies maintained by the bidder for the purpose of doing business.

1.19 PRE-BID CONFERENCE

Failure to attend a mandatory pre-bid conference will result in your bid being considered non-responsive.

1.20 BID DOCUMENTS

Unless otherwise specified the Bid Document (Plans & Specifications) fees shall be "non-refundable" and their expense shall be considered a cost of doing business. Cancellation of a bid does not relieve the contractor of this responsibility. When Bid Documents purchased through the County (Plans and Specifications purchased through Demand Star are not subject to refund) are classified as "refundable" bidders may obtain a refund on purchased plans and specifications. Refunds may be obtained by returning complete sets of plans and specifications, in good condition, to the source, no later than 14 days following the bid-opening date. Determination of "Good Condition" will be in the sole opinion of the County.

1.21 BID BONDS

If specified in the contract documents a Bid Bond or certified cashier's check payable to the Board of County Commissioners equal to 5% of the total Bid must be enclosed with the Bid. Any bonding company submitting a Bid to Sarasota County Government must be licensed to transact a fidelity and surety business in the State of Florida, and hold a Certificate of Authority from the Secretary of the Treasury under Act of Congress, approved on July 30, 1947 (USC 613), and with Best and "T" ratings of B+ (Very Good) or better if contractors bid is under \$500,000.00 and A- (Excellent) or better, if contractors bid is over \$500,000.00. Bid Bonds shall contain in type or print the description of the construction in the same language as in the Invitation for Bids

1.22 PERFORMANCE AND PAYMENT BOND

Bidders are advised that if specified in the Contract Documents a Performance and Payment Bond of 100% of the Contract amount shall be required. Any bonding company submitting a Performance and Payment Bond to Sarasota County Government must be licensed to transact a

Revised 01/05/04

fideli ty and surety business in the State of Florida, and hold a Certificate of Authority from the Secretary of the Treasury under Act of Congress, approved on July 30, 1947 (USC 613), shall have an A.M. Best rating of: if bond is under \$500,000 "B+" (Very Good) or better, and over \$500,000 "A-" (Excellent) or better, and a "T" Underwriting Limitation not exceeded by this Project's bond.

1.23 EXECUTION OF BONDS

If the Contractor is a partnership, each bond should be signed by each of the individuals who are partners; if a corporation, the bonds should be signed in the correct corporate name by a duly authorized officer, agent or attorney-in-fact. The appropriate number of bonds should be executed to correspond to the number of signatories to the contract. Each executed bond should be accompanied by (a) appropriate acknowledgment of the respective parties; (b) appropriate duly certified copy of Power-of-Attorney or other certification of authority where bond is executed by agent, officer or other representative of Contractor or Surety; (c) duly certified extract from by-laws or resolutions of Surety under which Power-of-Attorney or other certificate of authority of its agent, officer or representative was issued. (Environmental Services)

1.24 POWER OF ATTORNEY

Attorneys-in-fact who sign Bid bonds or performance and payment bonds must file with such bond a certified copy of their power-of-attorney to sign such bonds. Attorneys-in-fact must place name, address, and telephone number on this certificate.

1.25 FAILURE TO EXECUTE CONTRACT

If within ten (10) days after the Notice of Bid Action, the successful bidder does not execute the Contract and furnish the required Contractor's bonds properly signed by the Contractor and the Surety or Sureties satisfactory to the County, the bidder may be deemed to be in default and the County may retain his Bid Bond. Award may then be made to the next lowest most responsive and responsible bidder or all bids may be rejected and the contract again advertised.

1.26 MINORITY BUSINESS ENTERPRISES (MBE)

Contractors awarded construction contracts who intend to subcontract material or service requirements of the project are encouraged to subcontract 5% or more of the project price to Sarasota County Government, Certified Minority Business Enterprises (MBE) firms or show Good Faith Effort.

1.27 NOTICE PROVISION

Any notice or other communications concerning material changes to the Contract, shall be sent via certified U.S. Mail, return receipt requested, postage prepaid to the relevant address specified under "Contractor Representative" and "County's Project Administrator" as noted in the Contract documents.

1.28 PUBLIC RECORDS

Bidder acknowledges that all information contained within its bid is a public record, as defined in Chapter 119, Florida Statutes. No information should be labeled confidential unless exempted under said laws.

Revised 01/05/04

1.29 TRAVEL EXPENSE

Travel expenses will be reimbursed in accordance with Section 112.061, Florida Statutes.

1.30 TAXES

Sarasota County is exempt from Federal Excise and State Sales Taxes (Department of Revenue Certification No. 85-8012515235C-5); therefore, bidders are prohibited from delineating a separate line item in their bid for any sales or service taxes. Nothing herein shall affect the bidder's normal tax liability. The County reserves the right, at the County's sole option, to utilize the Sarasota County Direct Purchase Order System and to issue Direct Purchase Orders for applicable supplies and equipment to be utilized in this project.

1.31 EQUAL EMPLOYMENT OPPORTUNITY

Sarasota County will affirmatively ensure that minority business enterprises will be afforded full opportunity to submit bids in response to this Invitation for Bid and will not be discriminated against on the grounds of race, color, sex, religion, disability or national origin in consideration for an award.

1.32 SUBCONTRACTING

Construction contractors shall obtain prior written approval of subcontractors and the work they will perform. A subcontractor is defined as any entity performing work within the scope of the contractor's project who is not an employee or a leased employee of the contractor.

1.33 QUALIFICATIONS

Florida Statute 336.41, provides that any company that is prequalified by FDOT is automatically qualified to perform the same type of work for counties. Work not covered by FDOT will be subject to a case-by-case qualification based on the size (cost), complexity, and risk of the project. Each project's specifications will clarify what qualifications are required.

Work not covered by FDOT will be subject to a case-by-case qualification based on the size (cost), complexity, and risk of the project. Each project's specifications will clarify what qualifications are required.

1.34 FUNDING.

The award of any contract(s) pursuant to this Invitation for Bids is subject to the appropriation of funds by the Sarasota County Board of County Commissioners in an amount sufficient to allow the County's performance under the terms and conditions of such contract(s). The County shall provide prompt written notice to bidders in the event sufficient funds have not been so appropriated. Thirty (30) days after the date of such notice, bidders shall be released from all further obligations arising out of their bids.

1.35 INVOICING

All invoices must be mailed or delivered to the Sarasota County Finance Department, P.O. Box 8, Sarasota, FL 34230-0008. Invoices must contain the Purchase Order number, required identification information, and reflect the Contract prices, terms, and conditions. Invoices containing deviations or omissions will be returned to the vendor for correction and

Revised 01/05/04

resubmission. Vendors shall not perform any service or provide products until they have been issued a Purchase Order number.

1.36 PURCHASING COOPERATIVE

Through a cooperative purchasing agreement, the cities of Longboat Key, City of Palmetto, North Port, Venice, Bradenton, and Sarasota, the Sarasota County School Board, Sarasota/Bradenton Airport Authority, and Sarasota Memorial Hospital. DeSoto County may procure against Sarasota County contracts.

2.0 ADDITIONAL INSTRUCTIONS TO BIDDERS

2.0.1 PREPARATION OF BIDS

The bidder shall sign the bid in the blank space provided. If a partnership or a corporation makes the bid, the name and address of the partnership or corporation shall be shown together with the name and addresses of the partners or officers. If the bid is made by a partnership, it must be acknowledged by one of the partners; if made by a corporation, by one of the officers thereof.

2.0.2 BONDS

Bid bond and Performance and Payment bond will be required to this project.

2.0.3 BID AWARD

The Contract will be awarded to the responsive and responsible Bidder submitting the lowest **TOTAL BID PRICE**.

2.0.4 TIME OF COMPLETION

The time of completion of the work is stated in the Contract Documents. The time of completion of the work performed under the Contract will be a number of days from the Notice to Proceed. In event of failure to complete the work within the time specified, liquidated damages will be assessed as provided in the General Conditions unless an extension of time is granted.

2.0.5 CONTRACTOR QUALIFICATIONS

In accordance with Instructions, Terms and Conditions number 33, Minimum Qualifications shall include the following:

Bidder must have had at least five years' experience and must have successfully constructed, as prime contractor, at least three projects of similar size and complexity.

- a.
 - Similar complexity is defined as acting as general contractor for the construction and start up of facilities that include the following characteristics:
 - Directional boring of HDPE pipe.

- Installation of PVC pipe, restrained joints, ductile iron buried valves, air release valves, and drop connections to manholes.
 - Site work including grading, fencing, seeding, sodding, storm water management, and maintenance of traffic on a two-lane, bi-directional road.
 - Construction of wastewater pump stations.
- b. Similar size projects shall be defined as water and/or wastewater pipeline projects for public clients with a construction value greater than \$600,000.
 - c. The bidder's superintendent and assistants must be qualified and experienced in similar project in all categories.
 - d. Contractor shall fill out and submit with the Bid Form Contractor Qualifications Form Page CQF-1 outlining their experience as outlined above.

**SARASOTA COUNTY ENVIRONMENTAL SERVICES - UTILITIES
CENTRAL COUNTY LANDFILL LEACHATE FORCE MAIN AND PUMP STATION
BID NO. 6125JW**

BID FORM

Board of County Commissioners, Sarasota County, Sarasota, Florida Submitted: _____
(Date)

Gentlemen: The undersigned, as Bidder, hereby declares that the only person or persons interested in this Bid as principal, or principals, is or are named herein and that no person other than herein mentioned has any interest in this Bid or in the Contract to be entered into; that this Bid is made without connection with any other person, company or parties making a Bid; and that this Bid is in all respects fair and made in good faith without collusion or fraud.

The Bidder further declares that they have examined the site(s) of the work, understands all conditions pertaining to the place where the work is to be done; that he has examined the plans for the work and other Contract documents relative thereto, and has read all of the addenda furnished prior to the opening of the Bids, as acknowledged below; and that they have satisfied themselves relative to the work to be performed.

The Bidder agrees, if this Bid is accepted, to contract with the Board of County Commissioners, Sarasota County, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation and labor necessary to construct the work covered by the Bid and other Contract Documents.

The Bidder agrees to accept the prices listed in the bid form as full compensation. The Bidder understands that the quantities shown on the Bid Form are approximate only and subject to increase or decrease. Should they be increased or decreased, he will perform the work at the unit price Bid herein. Actual quantities will be determined upon completion of the work.

The Bidder agrees to commence work as set forth in the General Conditions attached hereto and to complete the work to Substantial Completion within one hundred eighty (180) calendar days, and an additional 30 calendar days to Final Acceptance, from the date on which contract time commences. If the Contractor fails to complete the work to Substantial Completion within the specified time, the Contractor agrees to pay the Owner one thousand dollars (\$1000.00) per day as liquidated damages as stipulated in the General Conditions attached hereto. If the Contractor fails to complete the work to Final Acceptance within the specified time, the Contractor agrees to pay the Owner two hundred fifty dollars (\$250.00) per day as liquidated damages as stipulated in the General Conditions attached hereto.

**SARASOTA COUNTY ENVIRONMENTAL SERVICES - UTILITIES
CENTRAL COUNTY LANDFILL LEACHATE FORCE MAIN AND PUMP STATION
BID NO. 6125JW**

NOTICE PROVISION

Any notice or other communications concerning material changes to the Contract, shall be sent via certified U.S. Mail, return receipt requested, postage prepaid to the relevant address listed below.

Contract clarifications or questions regarding the interpretation of plans and/or specifications not involving: (a) any Contract claim and/or dispute, (b) questions of time not involving extension, delay, or reduction of time, (c) monetary or compensatory issued, (d) fully executed IFCA's and/or (e) material changes to the contract, shall be sufficiently given if delivered personally or sent via U.S. Mail, postage prepaid, addressed as follows:

<p style="text-align: center;">Contractor Representative: (print or type information)</p> <p>Name _____</p> <p>Title _____</p> <p>Address _____</p> <p>_____</p> <p>Telephone _____</p> <p>Fax _____</p> <p>Email _____</p>	<p style="text-align: center;">County's Project Administrator:</p> <p>Name <u>Greg Rouse, P.E.</u></p> <p>Title <u>Engineering Manager</u></p> <p>Address <u>1001 Sarasota Center Blvd.,</u> <u>Sarasota, FL 34240</u></p> <p>Telephone <u>941/861-0548</u></p> <p>Fax <u>941/861-0589</u></p> <p>Email <u>grouse@scgov.net</u></p>
--	--

THE BIDDER HEREBY ACKNOWLEDGES receipt of the following Addendum or Addenda for these Specifications. (If none, write "None".)

ADDENDUM No.	DATE OF ADDENDUM	DATE RECEIVED
_____	_____	_____
_____	_____	_____
_____	_____	_____

Attachments: To be completed and submitted with bid form. (Pages BF-1 & BF-2)

- 1 - Price Schedule (BF-3)
- 2 - Drug-Free Workplace Affidavit (DWF-1)
- 3 - Compliance with the Florida Trench Safety Act (Page BF-4)
- 4 - Attachment "A" Status of Contracts on Hand Report (Page BF-5)
- 5 - List of Subcontractors (Page BF-6)
- 6 - Contractors Qualification Form (Page CQF-1)

SARASOTA COUNTY ENVIRONMENTAL SERVICES, UTILITIES

CENTRAL COUNTY LANDFILL LEACHATE FORCE MAIN AND PUMP STATION

****THE UNIT PRICES ON THIS FORM CORRESPOND WITH THE ITEMS LISTED IN THE MEASURE AND PAYMENT SECTION 01026 OF THE UTILITY TECHNICAL SPECIFICATIONS****

UNIT PRICE SCHEDULE

BASE BID ITEMS 1-7

ITEM NO.	SECTION 01026 3.01	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
1	A	4" PVC FM Open Cut (C900 DR 25)	23,900	LF		
2	B	4" HDPE Directional Bore (AWWA C905 DR 11)	3,600	LF		
3	C	4" Plug Valve, DI	6	EA		
4	D	4" Combination Air/Vacuum Release Assembly	13	EA		
5	E	Tie-in to existing manhole including drop connection	1	EA		
6	F	Pump Station	1	LS		

		Subtotal Items (1 Through 6)	\$
7	G	Approved Contract Interim Field Change Agreement (IFCA) (to be 5% of Items 1 through 6)	\$
TOTAL BID PRICE			\$
TOTAL BID PRICE IN WORDS:			

THIS BID IS SUBMITTED BY AND ON BEHALF OF:

BY:

 Authorized Signature

PRINT NAME:

TITLE:

PHONE NUMBER:

FAX NUMBER:

E MAIL ADDRESS:

This page left intentionally blank

APR 27 2006

Southwest District

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

1. This Sworn Statement is submitted with _____ for construction of the _____
2. This Sworn Statement is submitted by _____ whose business address is _____, and (if applicable) its Federal Employer Identification Number (FEIN) is _____. (If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement: _____).
3. My name is _____ and my relationship to the above entity is _____ (printed or typed name of individual signing)
4. The Trench Safety Standards that will be in effect during the construction of this Project are: Florida Statutes Section 553.60-553.64, TRENCH SAFETY ACT, and Occupational Safety and Health Administration (OSHA) RULES AND REGULATIONS 29CFR 1926.650, Subpart P. (See Federal Register, Vol. 54, No. 209)
5. The undersigned assures that the entity will comply with the applicable Trench Safety Standards and agrees to indemnify and hold harmless the COUNTY and any of its agents or employees from any claims arising from the failure to comply with said standard.
6. The undersigned has appropriated \$ _____ per linear foot of trench to be excavated over five feet (5') deep for compliance with the applicable standards and which sum is included in the price bid for the item requiring the excavation. It is intended to comply with these standards by instituting the following procedures: _____

7. The undersigned has appropriated \$ _____ per square foot for compliance with shoring safety requirements and intends to comply by installing the following procedures: _____

8. The undersigned, in submitting this bid, represents that he has reviewed and considered all available geotechnical information and made such other investigations and tests as he may deem necessary to adequately design the trench safety system(s) he will utilize on this Project.

(Signature)

(Date)

STATE OF _____

COUNTY OF _____

PERSONALLY APPEARED BEFORE ME, the undersigned authority, _____, who after first being sworn by me, affixed his/her signature in the space provided above on this _____ day of _____, 20__.

NOTARY PUBLIC

My Commission Expires: _____

This page left intentionally blank

STATUS OF CONTRACTS ON HAND REPORT ATTACHMENT "A"

List the construction contracts your organization has underway on this date with a value of \$50,000.00 or more.

[illegible]

USE extension sheet if necessary

BID NUMBER: 6125JW

This page left intentionally blank

BID BOND

STATE OF FLORIDA)
COUNTY OF SARASOTA)

KNOW ALL MEN BY THESE PRESENTS, that we, _____, as Principal, and _____, as Surety, a Corporation chartered and existing under the laws of the State of _____, with its principal offices in the City of _____, and authorized to do business in the State of Florida, are held and firmly bound unto the Sarasota County Board of County Commissioners in the full and just sum equal to Five Percent (5%) of the Total Bid Price, good and lawful money of the United States of America, to be paid upon demand by the Sarasota County Board of County Commissioners, to which payment well and truly to be made, we bind ourselves, our heirs, executors, administrators, and assigns, jointly and severally and firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the attached Bid, dated _____, 20____, for a project entitled:

CENTRAL COUNTY LANDFILL LEACHATE FORCE MAIN AND PUMP STATION
BID NO. 6125JW

NOW THEREFORE, if the Principal shall withdraw said Bid prior to the date or opening of the same; or shall within ten (10) calendar days after the prescribed forms are presented to him for signature, fails to enter into a written Contract with Sarasota County, Florida, in accordance with the Bid as accepted, and give a Performance and Payment Bond with good and sufficient Surety or Sureties as may be required, for the faithful performance and proper fulfillment of such Contract and for the prompt payment of all persons furnishing labor or materials in connection therewith; or, in the event of failure to enter into such Contract and give such Bond within the time specified, if the Principal shall pay the County the difference between the amount specified in said Bid and the amount for which the County may procure the project, provided the latter amount to be in excess of the amount specified in said Bid, then the above obligations shall be void; otherwise, to remain in full force and effect.

IN WITNESS WHEREOF, the parties have executed this instrument under their several seals this ____ day of _____, 20 __, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

(Sign here if the Contractor is a Partnership or an Individual)

IN THE PRESENCE OF: _____(SEAL)

Individual Principal

Address

Signature

Business Address

IN THE PRESENCE OF:

_____(SEAL)
Corporate Surety

Address

Business Address

(Sign here if the Contractor is a Corporation)

WITNESS:

Corporate Principal

By: _____
As President

(AFFIX CORPORATE SEAL)

Business Address

Corporate Surety

By: _____
As Authorized Agent

(AFFIX CORPORATE SEAL)

Business Address

CONTRACTOR QUALIFICATIONS FORM

Project Name			Project Number			Project Amount
Contract Date	Designing Architect or Engineer					
Owner Name			Contact Name			
Address			City		State	
Phone Number			Fax Number			

Project Name			Project Number			Project Amount
Contract Date	Designing Architect or Engineer					
Owner Name			Contact Name			
Address			City		State	
Phone Number			Fax Number			

Project Name			Project Number			Project Amount
Contract Date	Designing Architect or Engineer					
Owner Name			Contact Name			
Address			City		State	
Phone Number			Fax Number			

Project Name			Project Number			Project Amount
Contract Date	Designing Architect or Engineer					
Owner Name			Contact Name			
Address			City		State	
Phone Number			Fax Number			

List Projects similar in size and scope completed in the last five years. Failure to fill out this form may be cause for the contractors bid to be declared non-responsive.

Note: This form to be filled out in compliance with the Instructions, Terms and Conditions.

CQF-1

Bid 6125JW

This page left intentionally blank

INDEX

GENERAL CONDITIONS

<u>NO.</u>	<u>SUBJECT</u>	<u>PAGE</u>
1.	Definitions and Terms	2
2.	Contract Documents	3
3.	Drawings	3 & 4
4.	Notice to Proceed	4
5.	Pre-Construction Conference	4
6.	Progress and Control of the Work.....	4, 5 & 6
7.	Rights and Responsibilities of the County During Construction	6, 7 & 8
8.	Responsibilities of the Contractor	8, 9, 10 & 11
9.	The Authority and Duties of the Engineer	11 & 12
10.	Work by Others	12
11.	Insurance Requirements	12
12.	Changes	12 & 13
13.	Payment to the Contractor	13, 14, 15, 16, & 17
	Retainage Table	15
14.	Warranty and Guarantee Provisions.....	17
15.	Existing Underground Utilities	17 & 18
16.	Claims and Damages.....	18 & 19
17.	Interpretation of Contract	19
18.	Indemnification	20
19.	Royalties and Patents	20
20.	Clean Up and Disposal.....	20
21.	Sanitary Regulations.....	20
22.	Inspection and Testing of Materials and Equipment.....	20
23.	Safety and Health Regulations	20
24.	Record Drawing Submittals	21
25.	Salvaged Equipment & Materials	21
26.	Notification	21
27.	Storage of Materials	21
28.	Testing.....	21
29.	Manufacturer's Instruction, Service and Parts Manuals	21
30.	Manufacturer's Supervision.....	22
31.	Certified Chemicals.....	22
32.	Photographs.....	22
33.	Substitution of Equipment and/or Material	22
34.	Communications/Identification.....	23

GENERAL CONDITIONS

1. DEFINITIONS AND TERMS:

The terms used in these specifications are defined as follows:

ADMINISTRATIVE AGENT:	The County person responsible for the performance of the Contract. This agent is named in the Contract and has responsibility for Contract development, negotiations, Contractor compliance with the terms of the Contract and resolutions in cases of non-compliance. Greg Rouse, Acting Engineering Manager is the Administrative Agent for this Contract.
CHANGE ORDER:	A form of a Contract modification, which results in the total Contract price exceeding the amount specified in the Contract.
CONTRACT:	The agreement executed by the County and the Contractor for performance of the Project and including all Contract Documents.
CONTRACTOR:	The person, firm, or corporation with whom Contract is executed by the County.
COUNTY:	SARASOTA COUNTY SARASOTA COUNTY, FLORIDA
DRAWINGS:	The drawings listed and described in General Conditions Paragraph 3.
ENGINEER:	Post, Buckley, Schuh and Jernigan
INSPECTOR:	(Outside firm or County)
INTERIM FIELD CHANGE AGREEMENT (IFCA):	A form of a Contract modification, which does not result in the total Contract price exceeding the amount specified in the Contract.
NOTICE OR CLAIM:	Information rendered by either party to the other upon a condition becoming known pursuant to the following requirements. All Claims, requests, substitutions, changes, notices, delays, and any and all other forms of Notices or Claims by the Contractor to the County must be in writing and promptly presented. If none is so made, it is presumed not to have been given by the Contractor to the County.
OWNER:	BOARD OF COUNTY COMMISSIONERS OF SARASOTA COUNTY, FLORIDA
PROJECT:	The entire construction or installation to be performed as set forth in the Contract Documents.

PROJECT MANAGER: Frank Coggins

SPECIFICATIONS: The detailed written description of the Project.

SUBCONTRACTOR: Any person, firm, or corporation other than the Contractor supplying material or labor for the Project. Such person or firm has contractual relations with the Contractor, but not with the County.

SUBSTANTIAL COMPLETION: When the construction is sufficiently completed, in accordance with the Contract documents, so that the Project or specified part of the Project can be utilized for the purpose for which it was intended.

SURETY: Any person, firm, or corporation that has executed as Surety the Contractor's Bid, Performance, and Payment Bonds securing the performance of this Contract.

FINAL ACCEPTANCE: When the construction is totally completed and certified by the engineer, including resolution of all punch list items and record drawings.

2. CONTRACT DOCUMENTS:

The following Documents are included in Contract, Bid No. **6125JW**.

Contract	Addendum(s)
Exhibits	Contract Bid, Bid Bond, Power of Attorney
Performance and Payment Bond	Change Orders/Field Orders
Power of Attorney	Information for Bidders
Notice to Proceed	Project Purchase Orders
General Conditions	Minority Business Enterprise Project Plan
Specifications as listed in Table of Contents	Drug Free Workplace Affidavit
Drawings	Release of Lien
Contractor's Qualifications Form	

3. DRAWINGS

The general character and scope of work are illustrated by the drawings titled **CENTRAL COUNTY LANDFILL LEACHATE FORCE MAIN AND PUMP STATION, BID No. 6125JW**. The drawings, which show the scope, extent and character of the work to be furnished and performed by the CONTRACTOR and which have been prepared or approved by the ENGINEER and are referred to in the Contract Documents. Shop drawings are not the Drawings as so defined.

3.1 Checking of Drawings and Dimensions:

3.1.1 The Contractor shall check all drawings immediately upon their receipt and shall promptly notify the Engineer in writing of any discrepancies. Anything shown on the drawings and not mentioned in the specifications, or mentioned in the specifications and not shown on the drawings, shall be of like effect as if shown or mentioned in both.

3.1.2 Figures marked on all drawings shall, in general, be followed in preference to scale measurements. Large-scale drawings shall, in general, govern small-scale drawings. The Contractor shall compare all drawings and verify the figures before laying out the work and will be responsible for any errors which might have been avoided thereby. When dimensions on the drawings are affected by the type of equipment selected, the Contractor shall adjust such dimensions as conditions may require.

3.2 Copies of Drawings and Specifications Furnished:

The Engineer will furnish to the Contractor, free of charge, four (4) copies of Contract Drawings and Specifications necessary for the execution of the work. Additional copies of the drawings and specifications may be obtained from the Engineer upon payment of reproduction costs. One complete set of all Contract Drawings and Specifications shall be maintained at the job site and shall be available to the Engineer at all times.

4. NOTICE TO PROCEED:

A written notice given by the OWNER to CONTRACTOR (with a copy to the ENGINEER) affirming the date on which the Contract Times will commence to run (date that the contract is awarded by the Board of County Commissioners, or is executed by the County Administrator, applicable) and on which CONTRACTOR shall start to perform CONTRACTOR'S obligations under the Contract Documents.

5. PRECONSTRUCTION CONFERENCE:

Prior to starting the work, a pre-construction conference shall be held to review the work schedules, to establish procedures for handling shop drawings and other submissions, for processing periodical pay estimates, and such other matters as may be pertinent to the Project. The Contractor shall submit a summary, shop drawing schedule, project schedule, labor and equipment rate sheet, and any other information as required within at the pre-construction conference.

6. PROGRESS AND CONTROL OF THE WORK:

6.1 Schedules and Progress Reports:

The Contractor must submit a proposed schedule for the Project and a list of shop drawing submissions at the pre-construction conference. The purpose of this list and schedule is to enable the County and the Engineer to govern the Project and to aid in providing appropriate oversight. The Engineer shall have the right to reschedule work provided such rescheduling is in accord with the remainder of terms of this Contract. The schedule shall show, at a minimum, the approximate dates on which each phase of the Project is expected to be started and finished; the proposed (Maintenance of Traffic - MOT) plan during each month; and the approximate number of crews and equipment to be used. The Engineer, after necessary rescheduling and obtaining additional information for specific purposes, shall review and approve the schedule. The Contractor shall also forward to the Engineer, as soon as practicable after the first day of each month, a summary report of the progress of the various phases of the Project, in fabrication and in the field, stating the existing status, estimated time of completion, and cause of delay, if any. Together with the summary report, the Contractor shall submit any necessary revisions to the original schedule for the Engineer's review and approval. Additional and more detailed schedules may be required by the Engineer for daily control.

6.2 Approval of Subcontracts:

6.2.1 The Contractor shall provide Notice to Engineer for all subcontractors proposed to be used, and no subcontractors shall be employed unless they have been approved by the Engineer.

6.2.2 The Contractor is fully responsible to the County for the acts and omissions of its subcontractors and of persons either directly or indirectly employed by them.

6.2.3 Nothing contained in the Contract Documents shall create any contractual relationship between any subcontractor and the County.

6.3 Performance of the Project:

6.3.1 The Project shall be executed in such time and with such forces of workers, materials, and equipment as may be ordered by the Engineer, in writing, to complete the Project as contemplated in the drawings, specifications, Contract, and schedules, including such detailed, explanatory drawings as may be furnished by the Engineer from time to time. If at any time the materials and appliances to be used appear to the Engineer as insufficient or improper for securing the quality of work required, or the required rate of progress, the Engineer may order the Contractor to increase its efficiency or to improve the quality of its work and the Contractor shall conform to such an order. The failure of the Engineer to demand any increase of such efficiency or any improvement shall not release the Contractor from its obligation to provide the quality of work or the rate of progress necessary to complete the Project by the Contract time.

6.3.2 The Contractor shall perform the work and take such precautions necessary to complete the Project so all work will be in acceptable condition within the Contract time according to the schedule.

6.3.3 If the Contractor desires to conduct work at night or outside the regular hours, it shall submit the request in writing to the Engineer, but shall allow ample time to enable satisfactory arrangements to be made for inspecting the work in progress. The Engineer may grant permission unless local regulations prohibit such work. If granted permission, the Contractor shall comply with all regulations and legal requirements.

6.4 Workmanship, Material, and Workers:

6.4.1 Unless otherwise stated in the detailed specifications, all workmanship, materials, and articles incorporated in the Project shall be of the most suitable grade of their respective kinds for the purpose and shall be acceptable to the Engineer. The Engineer shall decide the question of quality where the terms, "or equal", "approved equal" or "equivalent", are used in the specifications following reference to a specific manufacturer of equipment or materials. When and to the extent required by the specifications or by the Engineer for review, the Contractor shall provide full information concerning the materials or articles or methods of work which he contemplates incorporating in the Project. Samples of materials shall be submitted for review when requested. Machinery, materials, articles installed or used, or unusual methods of work used without such review may be rejected without liability to the Engineer or County.

6.4.2 The Contractor shall ensure that all KEY personnel, support personnel and other agents are fully qualified and capable to perform their assigned tasks. Any change or substitution to the CONTRACTOR'S KEY PERSONNEL must receive the COUNTY'S Administrative Agent's written approval before said changes or substitutions can become effective. At the discretion of the COUNTY'S Administrative Agent, the COUNTY shall have the sole right to require the CONTRACTOR to remove personnel assigned at any level for the performance of work.

6.5 Delays and Extension of Time:

6.5.1 If the Contractor should be delayed at any time in the progress of the work by any act or neglect of the County or its employees, or by any other Contractor employed by the County, or by changes ordered in the Project, or by fire, unusual delay in transportation, unavoidable casualties or by delay authorized by the Engineer pending arbitration, or by any cause which the Engineer determines justifies the delay, then the time of completion may be reasonably extended by the County.

6.5.2 No extension of time shall be made unless Notice is made by the Contractor in writing to the Engineer within five (5) calendar days of the event or incident causing the delay and as otherwise provided by the definition of "Notice or Claim" within the General Conditions. The Contractor shall demonstrate in its Notice the impact on the critical path of the construction schedule to justify the extension of time.

6.5.3 Reasonable extensions of time, as determined by the Engineer, will be granted to the Contractor for time lost due to rainfall over and above the norm for the County, based on U.S. Weather Bureau statistics for the last 10 years.

6.5.4 If no schedule or agreement states the date upon which drawings shall be furnished from the County, then no Claim for delay shall be allowed on account of failure to furnish drawings until fourteen calendar days after the Contractor has provided Notice demanding for such drawings.

6.5.5 Should the Contractor be delayed in the commencement, prosecution or completion of the work by the act, omission or default of County, Engineer or of anyone employed by them on the Project, then the Contractor shall be entitled to an extension of time only, and there shall be no damages for delays. The Contractor shall adhere to all paragraphs outlined in 6.5 for this procedure.

6.6 General Work Hours/Schedule

6.6.1 The Contractor shall submit, during the preconstruction meeting, his proposed work hours. The submittal should include days to be worked with start and stop time listed. All weekend work hours shall be listed along with potential night time or holiday work. If the work schedule is deviated the Contractor will reimburse the County for all Engineering and Inspection fees.

6.6.2 If weekend or holiday work is required, the Contractor shall provide Notice to the Engineer on or before 5:00 p.m. the Wednesday prior to the weekend or holiday work. If such Notice is not given NO work shall be done on said dates.

6.6.3 The Engineer may require that water main tie-ins requiring water service to be shut off be made during the night. The Contractor shall receive no additional compensation for such night work.

7. RIGHTS AND RESPONSIBILITIES OF THE COUNTY DURING CONSTRUCTION:

7.1 General

After written Notice is provided to the Contractor and a reasonable opportunity to cure, and after consultation with the Engineer, the County shall have the right to refuse to make payment, in whole or part, and if necessary, may demand the return of a portion or all of the amount previously paid to the Contractor due to:

- 1) The quality of a portion, or all, of the Contractor's work not performed in accordance with the requirements of this Contract;

- 2) The quantity of the Contractor's work not delivered or performed as represented in the Contractor's Payment Request, or otherwise;
- 3) The Contractor's rate of progress, not progressing such that, in the County's opinion, substantial or final completion, or both, may be unexcusably delayed;
- 4) The Contractor's failure to use the Contract funds, previously paid the Contractor by the County, to pay the Contractor's Project-related obligations including, but not limited to, subcontractors, laborers and material and equipment suppliers;
- 5) Claims made, or likely to be made, against the County, or its property;
- 6) Loss caused by the Contractor;
- 7) The Contractor's failure or refusal to perform any of its obligations to the County after written Notice and a reasonable opportunity to cure as set forth above.

In the event the County makes written demand upon the Contractor for amounts previously paid by the County as contemplated in this subsection, the Contractor shall promptly comply with such demand. The County's rights hereunder survive the term of this Contract are not waived by final payment or acceptance and are in addition to the Contractor's obligations stated in Section 8 herein.

7.2 Surveys and Lands for Work:

The County certifies that it owns the lands upon which the Project is to be constructed, except that the Contractor shall provide all necessary additional land required for the erection of temporary construction facilities and storage of material, together with right of access to the same. The County shall furnish copies of all land surveys for the Project. Easements for permanent structures or utilities shall be secured and paid for by the County.

7.3 Use of Completed Portions:

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

7.4 The County's Right to do Work:

If the Contractor should fail to perform the Project, or any part thereof properly or fail to perform any provision of this Contract, the County, after thirty (30) calendar days Notice to the Contractor may, without prejudice to any other remedy the Contractor may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

7.5 Right to Retain Imperfect Work:

If any part or portion of the work done or material furnished under this Contract is defective and not in accord with the plans and specifications, and if the Engineer decides that any part or portion of the imperfect work is not of sufficient magnitude or importance as to make the work dangerous or undesirable, or if the removal of such work will create conditions which are dangerous or undesirable, the Engineer has

the right to retain such work, but shall make such deductions in the final payment as may be just and reasonable, and such retention shall not constitute a waiver by the County of the Contractor's obligation under the Contract.

7.6 Suspension of Work:

7.6.1 If the Project is defective, or the Contractor fails to supply sufficient skilled workmen or suitable materials or equipment, or if the Contractor fails to make prompt payments to subcontractors for labor, materials, or equipment, or if the Contractor fails to comply with Project schedules, the County after thirty (30) calendar days Notice, may order the Contractor to stop all work, or any portion thereof, and terminate payments to the Contractor until the cause for such order has been eliminated. No extension of Contract time will be allowed for this suspension.

7.6.2 The County may, at any time and without cause, suspend the work or any portion thereof for a period of not more than ninety (90) calendar days by Notice to the Contractor. Such Notice shall fix the date on which the work shall be resumed. The Contractor shall resume the work on the date so fixed. The Contractor may request an increase in Contract price or an extension of the Contract time directly attributable to any suspension if a claim is made therefor as provided in Article 6.5 herein.

7.7 Termination of the Contract:

7.7.1 If the Contractor is adjudged as bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for the Contractor or for any of his property, or if he files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws, or if he repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or if he repeatedly fails to make prompt payments to subcontractors or for labor, materials, or equipment, or if he disregards laws, ordinances, rules, regulations, or orders of any public body having jurisdiction, or if he disregards the authority of the Engineer, or if he otherwise violates any provision of the Contract Documents, then the County may, without prejudice to any other right or remedy and after giving the Contractor and his surety seven (7) calendar days Notice, terminate the services of the Contractor and take possession of the Project and of all materials, equipment, tools, construction equipment, and machinery thereon owned by the Contractor, and finish the Project by whatever method he may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the Project is finished. If the unpaid balance of the Contract price exceeds the direct or indirect costs of completing the work, including compensation for additional professional services, such excess shall be paid to the Contractor. If such costs exceed such unpaid balance, the Contractor will pay the difference to the County. Such costs incurred by the County will be determined by the Engineer.

7.7.2 Where the Contractor's services have been so terminated by the County, said termination shall not affect any rights of the County against the Contractor then existing or which may thereafter accrue. Any retention or payment of monies by the County due the Contractor will not release the Contractor from liability.

7.7.3 Upon seven (7) calendar days Notice to the Contractor and the Engineer, the County may, without cause and without prejudice to any other right or remedy, elect to abandon the Project and terminate the Contract.

8. RESPONSIBILITIES OF THE CONTRACTOR:

8.1 Contractor's Representative:

The Contractor shall keep on this Project during its progress a competent Superintendent and any necessary assistants, all satisfactory to the Engineer. The Superintendent shall not be changed except with the written consent of the Engineer unless the Superintendent ceases to be employed by the Contractor. The Superintendent shall represent the Contractor in his absence, and all directions given to him shall be as binding as if given to the Contractor. The Superintendent shall give adequate and appropriate supervision to the work, using his best skill and attention.

8.2 Contractor's Understanding:

8.2.1 It is understood and agreed that the Contractor, by careful examination, is satisfied as to the nature and location of the work, the conditions of the site, the character, quality and quantity of the materials to be employed, the character of equipment and facilities needed preliminary to and during the execution of the work, the general and local conditions, and all other matters which can in any way affect the performance of the Project. No verbal agreement or conversation with any officer, agent or employee of the County or the Engineer, either before or after the execution of this Contract, shall affect or modify any of the terms or obligations herein contained.

8.2.2 If the Contractor, in the course of the work, finds any discrepancy between the drawings and the physical conditions of the Project site, or any error or omissions in the drawings or in the layout as given, or discovers unforeseen underground or aboveground conditions or any other unexpected conditions requiring additional work by the Contractor, the Contractor shall immediately report (verbally) to the Engineer and provide written Notice to the Engineer, within 24 hours and the Engineer shall promptly evaluate the information. Any work done after such discovery, until any necessary changes are authorized, will be done at the Contractor's risk.

8.2.3 If any part of the Contractor's work depends for proper execution or results upon the work of any third party, the Contractor shall inspect and measure work already performed by such third party and shall immediately report (verbally) to the Engineer and provide written Notice within 24 hours to the Engineer any discrepancy between the executed work and the drawings.

8.3 Quality of Material, Equipment or Work:

When any material or equipment not conforming to the requirements of the specifications and drawings has been delivered to the Project, or incorporated in the work of the Project, or whenever any work performed is of inferior quality, then such material or equipment or work whether known or unknown to the County or the Engineer is deemed to be defective, it shall be removed, replaced or made satisfactory to the County at no cost to the County.

8.4 Permits, Licenses, Taxes and Regulations:

8.4.1 All permits and licenses necessary for the execution of the Project which have not already been acquired by the Engineer shall be secured and paid for by the Contractor. Easements for permanent structures or utilities shall be secured and paid for by the County.

8.4.2 The Contractor shall pay all sales, consumer, use and other similar taxes required by the law of the place where the work is performed.

8.4.3 The Contractor shall give all Notices and comply with all laws, ordinances, rules and regulations related to the Project. If the Contractor observes that the drawings and specifications are at variance

therewith, he shall immediately report (verbally) to the Engineer and provide written Notice within 24 hours, and any necessary changes shall be made as provided in Article 13. If the Contractor performs any work contrary to such laws, ordinances, rules and regulations, and does not comply with the aforesaid procedure, the Contractor shall bear all cost incident to such violation.

8.5 Protection of Work, Persons and Property:

8.5.1 The Contractor shall continuously maintain adequate protection of all its work from damage and shall protect all property from injury or loss arising in connection with the performance of the Contract. The Contractor shall make good any such damage, injury or loss, except such as may be directly due to errors in Contract Documents or caused by agents or employees of the County. The Contractor shall adequately protect adjacent property as provided by law and the Contract Documents. The Contractor shall provide and maintain all passageways, guard fences, lights and other facilities for protection required by public authority or local conditions. The Contractor shall provide reasonable maintenance of traffic ways for the public and preservation of the continuation of the County's business, taking into full consideration all local conditions. The Contractor shall comply with the Florida Department of Commerce Safety Regulations and any local safety regulations.

8.5.2 In case of failure on the part of the Contractor to promptly restore damaged property, or make good such damage or injury, the County may, after providing 24 hours Notice to the Contractor, proceed to repair, rebuild or otherwise restore such property and the cost thereof will be deducted from any monies due or which may become due the Contractor under this Contract.

8.6 Scope of the Contractor's Service:

8.6.1 Unless otherwise stipulated, the Contractor shall provide and pay for all bonds, insurance, materials, labor, tools, equipment, light, power, water, transportation and other facilities necessary for the execution and completion of the Project.

8.6.2 The Contractor shall furnish for the Contract price all labor, stakes, surveys, batter boards for structures, grade lines and other materials and supplies and shall set construction stakes and batter boards for establishing lines, position of structures, slopes and other controlling points necessary for the proper prosecution of the construction work. Control surveys shall be by a registered land surveyor acceptable to the County and Engineer. These stakes and marks shall constitute the field control by which the Contractor shall perform the Project. The Contractor will be held responsible for the preservation of all stakes and marks, and if for any reason any of the stakes, marks or batter boards become destroyed or disturbed, they will be immediately and accurately replaced by the Contractor's registered land surveyor. It is the responsibility of the Contractor's registered land surveyor to establish the right-of-way line when said line is to be used in locating the proposed facilities as applicable.

8.7 Risk of Loss:

Prior to the completion of the Project by the Contractor and the acceptance thereof by the County, risk of loss for the work shall remain at the risk of the Contractor and said Contractor shall be required to repair, replace, renew and make good at his own expense all damages caused by force or violence of the elements or any cause whatsoever, provided however, that in such cases the Contractor shall be entitled to a reasonable extension of time within which to complete said work, unless the delay is due to the negligence, fault, or omission of the Contractor.

8.8 Contractor's Right to Terminate Contract:

If the work is stopped for a period of ninety (90) calendar days, by order of any court or public authority other than the County, through no act or fault of the Contractor or of any of its employees, then the Contractor may, upon providing thirty (30) calendar days Notice to the County and the Engineer, terminate the Contract and recover from the County payment for all work executed and any expense sustained plus a reasonable profit.

8.9 Removal of Equipment:

In the case of termination of this Contract before completion, from any cause, except that stated in Paragraph 8.8 above, the Contractor, if notified to do so by the County, shall promptly remove any part or all of his equipment and supplies at the expense of the Contractor.

9. THE AUTHORITY AND DUTIES OF THE ENGINEER:

9.1 Status of the Engineer:

The Contractor's work shall at all times be subject to the review of the Engineer, or his authorized designees. The Engineer shall decide any and all questions which may arise as to the quality and acceptability of materials furnished, work performed, rate of progress of work, areas of work, maintenance of schedules, interpretation of drawings and specifications, and all questions as to the acceptable performance of the Contract by the Contractor. In case of differences between the drawings and specifications, the Engineer shall make a determination whether the specifications or drawings represent the intent of the Contract, and such determination shall be communicated to the Contractor in writing. The Contractor shall immediately report (verbally) and provide written notice within 24 hours of such cases to the Engineer for decision. The Engineer's decision shall be made within a reasonable time and shall be final except in cases where time and/or financial considerations are involved.

9.2 Inspection and Examination of the Work:

9.2.1 The Engineer, and his authorized designees, shall have free access to the work of the Contractor at any time for purposes of inspection, and shall be reasonably assisted by the Contractor in conducting such inspections of the work performed and the nature of same. Such assistance of the Contractor shall, if necessary, include the uncovering, testing or removal of portions of finished work.

9.2.2 Duly authorized Inspectors may be assigned to the Project, or any part thereof, at any time. The presence or absence of an Inspector does not lessen the responsibility of the Contractor to perform under these Contract Documents. In case of dispute between the Contractor and an Inspector as to materials furnished, or the manner and method of performing the work, the Inspector has authority to reject materials or work, to suspend work until the issue can be referred to, and decided by the Engineer. An Inspector is not authorized to revoke, alter, enlarge, relax, release, or amend any of the specifications or requirements, nor to issue any instructions on, nor to approve or accept any portion of the work, or materials, or equipment; nor are any of his actions, authorized or unauthorized, to be so construed.

9.2.3 All materials shall be subject to inspection, examination and test by the Engineer at any time during manufacture, and at all places where such manufacture is being carried on. The Engineer may reject defective materials during manufacture or before they have been incorporated into the work. If the Contractor fails to replace defective work or rejected materials, the County may replace such materials or

correct such defective work and charge the cost thereof to the Contractor, or may terminate the Contract pursuant to Article 7.7.

9.2.4 Since no inspection either final or interim can be complete within itself, no final inspection, acceptance of work, materials or equipment or final or interim acceptance of same by the County or Engineer, or certificate of Engineer shall relieve the obligation of the Contractor to the County to do the work in a good, workmanlike manner, and to furnish proper, specified equipment and materials, and to perform properly all terms and any obligations of the Contract Documents.

9.3 Mediation:

9.3.1 Any controversy or Claim arising out of or relating to this Contract, or the breach thereof, shall be addressed through mediation prior to the commencement of any legal proceedings. The parties shall equally share the cost of a mutually acceptable mediator. The mediation session shall be held in Sarasota County, Florida.

10. WORK BY OTHERS:

The County may let other Contracts in connection with the Project. The Contractor shall afford other Contractors reasonable opportunity for the introduction and storage of their materials and execution of their work, and shall promptly coordinate this work with that of the Contractors.

11. INSURANCE REQUIREMENTS:

Before performing any work on this project, the CONTRACTOR shall furnish certificates of insurance to Sarasota County Risk Management as specified in Section V of the proposed contract. The appropriate insurance shall continue in force throughout the duration of any and all work performed on this project and shall include a thirty calendar day notice of cancellation or non-renewal.

12. CHANGES:

12.1 Compliance with Specifications and Drawings:

All specifications and drawings and terms of the Contract shall be strictly complied with by the Contractor except as specifically provided in these Contract Documents.

12.2 Changes in the Work:

12.2.1 The County, without invalidating the Contract, may order extra work or make changes by altering, adding to, or deducting from the Project; the Contract sum being adjusted accordingly. All such work shall be performed under the conditions of the original Contract except that any Claim for extensions of time caused thereby shall be determined at the time of ordering such changes. IFCA's shall be reviewed by the Engineer and authorized by the Administrative Agent or his designee. If the IFCA exceeds 5% contingency amount, an Amendment to the Contract must be executed and signed by the Contractor and the Sarasota County Board of County Commissioners.

12.2.2 In giving instructions, the Engineer shall have the authority to make minor changes in the Project, provided the change (s) does not involve additional cost nor is inconsistent with the purpose of the Project. Otherwise, except in an emergency endangering life or property, no extra work or change shall be made

unless in pursuance of a written order by the Engineer, and no Claim for an addition to the Contract sum shall be valid unless so ordered.

12.2.3 The value of any such extra work or change shall be determined in one or more of the following ways: (a) by Contract unit prices or (b) by an agreed lump sum price. In the event that Contract unit prices are not available and a lump sum price is not agreed upon, then the value of the extra work shall be determined by (c) the actual cost of:

- Labor, including foremen;
- Materials entering permanently into the work;
- The ownership or rental cost of construction plant and equipment during the time of use on the extra work;
- Power and consumable supplies for the operation of power equipment;
- Insurance; and
- Social Security, retirement and unemployment contributions.

As a result of the preceding requirements, a Change Order in the form of an Interim Field Change Agreement (IFCA) shall be prepared to be approved by the Engineer.

12.2.4 This value of the extra work or change shall be determined at the time that the IFCA is authorized and agreed upon. In the event that the IFCA can be valued by a Contract unit price, the Contract unit price shall be the value of such extra work, whether representing a deletion, or an addition, and method (b) or (c) shall be employed only if there is not an applicable Contract unit price. To the cost under (c), as established in the Contractor's labor and equipment rates, there shall be added a fixed fee to be agreed upon, but not to exceed fifteen percent (15%) of the actual cost of the work. The fee shall be compensation to cover the cost of supervision, overhead, bond, profit, and any other general expenses.

12.2.5 It is the Contractor's responsibility to provide Notice to its Surety of any changes affecting the general scope of the Project or change in the Contract Price and to ensure that the amount of the applicable Bonds shall be adjusted accordingly. The Contractor shall furnish proof of such adjustment to the County within fifteen (15) calendar days after the issuance of the IFCA.

12.2.6. The Contract may only be amended in writing and signed by all parties. The parties covenant and agree that each is duly authorized to enter into and perform this Contract and those executing this Contract have all requisite power and authority to bind the parties.

13. PAYMENTS TO THE CONTRACTOR:

13.1 Contractor's Warranty of Title:

13.1.1 The Contractor warrants and guaranties that title to all work, materials and equipment covered by any application for payment, whether incorporated in the Project or not, will pass to the County at the time of payment, free and clear of all liens, claims, security interests and encumbrances (hereafter in these General Conditions referred to as "Liens").

13.1.2 The Contractor shall furnish an affidavit stating that all laborers, material suppliers, and subcontractors have been paid on the Project for work covered by the application for payment and shall obtain a partial or complete Release of Lien, as may be necessary, properly executed by the material suppliers, laborers and subcontractors on the Project for the work covered by the application for payment, sufficient to secure the County from any claim whatsoever arising out of the aforesaid work.

13.2 Progress Payments:

13.2.1 Progress Payments will be made once a month as work progresses. Said payments will be based upon estimates prepared by the Contractor, of the value of the work performed and materials delivered. These estimates shall be submitted to the Engineer. The estimates shall be submitted with all required documentation specified within the Contract Documents.

13.2.2 The County shall pay the Contractor through payment issued by the Clerk of Courts in accordance with the Florida Prompt Payment Act of the Florida Statutes Chapter 218.70, upon receipt of the invoice approved by the Engineers and with written approval by the County's Administrative Agent or his assigned designee indicating that the services have been rendered in conformity with this Agreement. The Contractor shall submit an invoice for payment on a monthly basis for those specific services as described in the Bid Form that were completed during the invoicing period.

13.2.3 From the total of the amounts ascertained as payable, an amount as indicated in the "Retainage Table" of General Conditions 13.2.3.1 will be deducted and retained by the County until completion of the entire Contract in an acceptable manner. The balance, less all previous payments, shall be certified for payment.

13.2.3.1 Retainage Table

% of Time Used	% of Contract Amt Earned	Value of Contract			Amount Retained*
		Less than \$1M	>\$1M to < \$5M	> \$5M	
0 to < 25	=/> % Time	x			10%
	< 15% behind	x			10%
	15% or > behind	x			10%
	=/> % Time		x		5%
	< 15% behind		x		7%
	15% or > behind		x		10%
	=/> % Time			x	5%
	< 15% behind			x	5%
	15% or > behind			x	10%
25 to < 50	=/> % Time	x			10%
	< 15% behind	x			10%
	15% or > behind	x			10%
	=/> % Time		x		5%
	< 15% behind		x		7%
	15% or > behind		x		10%
	=/> % Time			x	5%
	< 15% behind			x	5%
	15% or > behind			x	10%
50 to < 75	=/> % Time	x			10%
	< 15% behind	x			10%
	15% or > behind	x			10%
	=/> % Time		x		5%
	< 15% behind		x		7%
	15% or > behind		x		10%
	=/> % Time			x	0%
	< 15% behind			x	5%
	15% or > behind			x	10%
75 to 100*	=/> % Time	x			10%
	< 15% behind	x			10%
	15% or > behind	x			10%
	=/> % Time		x		5%
	< 15% behind		x		7%
	15% or > behind		x		10%
	=/> % Time			x	0%
	< 15% behind			x	5%
	15% or > behind			x	10%
Total Retainage at Substantial Completion (Assuming everything is on schedule)		10%	5%	2.50%	

* NOTE: Additional retainage may be withheld if there are problems observed with the work or schedule. The cost for deficient work that is not corrected and remaining work items may be estimated and an amount of two times that value may be withheld in addition to the retainage amounts shown here.

13.2.4 Progress Payments may be made to the extent of the delivered cost of materials to be incorporated in the work, provided the materials meet the requirements of the plan and specifications when delivered to the Project or stored in an acceptable storage place. In any event, Progress Payment for material on hand shall not exceed the bid price and shall not be made without an invoice marked "PAID" and acceptable to the Engineer.

13.3 Correction of Work Before Final Payment:

13.3.1 The Contractor shall promptly remove from the job site all materials rejected by the Engineer as failing to conform to the Contract whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute his own work in accord with the Contract and without expense to the County, and shall bear the expense of making good all work of other Contractors destroyed or damaged by such removal or replacement.

13.3.2 If the Contractor does not remove such rejected work and materials within a reasonable time the County may remove them and may store the materials at the expense of the Contractor. If the Contractor does not pay the expense of such removal within ten (10) calendar days time thereafter, the County may, upon providing ten (10) calendar days Notice, sell such materials at auction or at private sale and shall account for the net proceeds thereof after deducting all the cost and expense that should have been borne by the Contractor.

13.4 Liens:

Neither the final payment nor any part of the retained percentage shall become due until the Contractor delivers to the County a complete release of all liens arising out of this Contract, or receipts in full in lieu thereof, and in addition thereto, in either case, an affidavit stating that so far as the Contractor has knowledge or information, the releases and receipts include all the labor and material for which a lien could be filed. The Contractor may, if any subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the County to indemnify the County against any lien. If any lien remains unsatisfied after all payments are made, the Contractor shall refund to the County all money payments that the latter may be compelled to pay in discharging such a lien, including all costs, interest, and a reasonable attorney's fee.

13.5 Final Inspection:

13.5.1 When the Contractor has completed the Project and has provided all as-built information to the Engineer in compliance with Contract Documents, he shall notify the Engineer in writing that the Project is ready for final inspection. The Engineer will then advise the Contractor as to the arrangements for final inspection and what work, if any, is required to prepare the Project or a portion thereof for final inspection. When the Engineer determines the Project or portion thereof is ready for final inspection, he shall perform same. Upon completion of the final inspection, the Engineer will prepare a list of defects of either commission or omission by the Contractor reasonably observable and determined under the conditions governing and restricting said final inspection. When all such defects have been corrected, a final reinspection will be made. The process will be repeated until, in the opinion of the Engineer, the Project has been completed in compliance with the Contract Documents as can best and reasonably be observed and determined under the conditions governing and restricting said final inspection. The Engineer will then, pursuant to such inspection and reinspection, certify to the County as to completion of final inspection. It is understood that the certification covers only those items which can be physically inspected and the Engineer's certification indicates compliance within the standards of the construction industry as interpreted by the Engineer.

13.5.2 Should the final re-inspection find items not completed from the list of defects prepared as part of the final inspection, the Contractor shall be responsible for all additional engineering and inspection costs associated with correcting the items on the list of defects. The additional costs shall be determined as defined in Paragraph 17.5.

13.6 Final Acceptance:

When the Engineer certifies the completion of the final inspection to the County, the Contractor may make request for final payment. With the request for final payment, the Contractor shall furnish satisfactory evidence that the Contractor has fully paid all Claims for labor, materials, and equipment incurred in connection with the Project. The Contractor shall provide all evidence required by the Contract to assure the County of complete compliance with all terms of the Contract. When the County has satisfied itself as to compliance with the terms of the Contract and has received certification of final inspection, it will notify the Contractor of final acceptance by the County.

13.7 Final Payment:

Upon final acceptance by the County, the Engineer will then review the amount of final request for payment and certify approval of this amount. Upon approval of the Engineer, the County will make final payment of the Contract amount, plus all approved additions, less approved deductions and previous payments made.

14. WARRANTY AND GUARANTEE PROVISIONS:

All materials and equipment furnished by the Contractor and all construction work and workmanship involved in this Contract shall be free from defects due either to faulty materials or equipment or faulty workmanship and the same is hereby guaranteed and warranted by the Contractor for a minimum period of one (1) year from written Notice of Final Acceptance by the County. All materials, equipment and workmanship furnished, installed and performed by the Contractor shall be warranted and guaranteed by the Contractor to the County to meet the required standards and to accomplish the purposes and functions of the Project as defined, detailed and specified in these Contract Documents. The County shall, following discovery thereof, promptly provide Notice to the Contractor of faulty materials, equipment, or workmanship within the period of the guaranty. Any part of the equipment, material, or workmanship which does not comply with the warranty and guarantee shall be promptly replaced by the Contractor at his own cost and without cost to the County. The warranty and guaranty provisions create no limitations on the County as to any claims or actions for breach of guaranty or breach of warranty that the County might have against parties other than the Contractor, and do not constitute exclusive remedies of the County against the Contractor and are not intended to and shall not limit any other rights, remedies, or causes of action which the County might exercise against the Contractor, and shall not alter or modify the application of the Statute of Limitations as established by the Statutes of the State of Florida. This Contract is governed by the Laws of the State of Florida.

In addition to Paragraph 15 herein, the Contractor is responsible to the County for all costs incurred with respect to all warranty items under this Contract, including all engineering expenses such as expense for repetitive trips by the Engineer and/or County required for start-up and warranty work. Such engineering expense shall be considered to be equal to the job payroll of the County and/or the Engineer, plus 150 percent thereof for overhead plus on-the-job mileage.

15. EXISTING UNDERGROUND UTILITIES:

15.1 Representation as to the location of underground utilities has been provided by various utility owners. The locations or elevations of utilities are not represented to be exact and are shown for the convenience of the Contractor. The Contractor shall contact the utility owner concerned for any available additional information and coordinate his construction activities accordingly. Any cost incurred for the protection of and/or damages to existing underground utilities will be considered as part of the overall Contract price and no additional

compensation will be paid to the Contractor. If, in the judgement of the Engineer, it is impossible to construct a given improvement in the location shown on the drawings, due to underground utility or utilities, either the utility owner will relocate the existing underground utility or an appropriate Change Order/IFCA will be executed for the relocation by the Contractor.

15.2.1 To comply with Section 553.851, Florida Statutes, to reduce the risk of interrupting the flow of underground utility services, all excavation contractors are required to Call Sunshine State One-Call 1-800-432-4770, to obtain information on the possible location of underground utilities in the area of the proposed excavation. This includes all operations such as demolition, grading, ditching, drilling, boring, cable plowing or other such activities. Excavators must notify the utilities a minimum of forty-eight (48) hours and maximum of five days, excluding Saturdays, Sundays and legal holidays, prior to excavating.

15.3 After all locates are completed by the utilities, 72 hours prior to progression of work, the Contractor shall verify all locates and shall verify all additional information as submitted by the utilities. If the Contractor verifies that conflicts exist, the Contractor shall immediately report (verbally) to the Engineer and provide written notice within 24 hours. If a relocation and/or adjustment is required to the utility, the Contractor shall receive only time for the delay and will not receive monetary compensation for the delay.

16. CLAIMS AND DAMAGES:

16.1 Requirement for Notice:

Any requirement of the Contract Documents (or) for Notice or direction by the Engineer shall be a condition precedent to be complied with by the Contractor before any Claim for extra compensation can be made (see definition of "Notice or Claim" Page GC-3).

16.2 Claims for Extra Cost:

If the Contractor claims that any instructions, in writing or by drawings or otherwise, involve extra cost under this Contract, the Contractor shall provide Notice to the Engineer on an IFCA form to be furnished by the Engineer within five (5) calendar days after the receipt of such instructions, and before proceeding to execute the work, except in an emergency endangering life or property. A decision by the Engineer will then be made as specified in Section 9 herein. If this decision requires a Change Order, the procedure shall be as provided for in Changes in the Work, Paragraph 13.2 herein. No Claim shall be valid unless so made.

16.3 Claims for Damages:

Any Claim for damages by the Contractor against the County arising under this Contract shall be made in writing to the County within ten (10) calendar days of the first observance of such damages, except as expressly stipulated otherwise in the case of faulty work or materials and shall be adjusted by agreement validated by Change Order. Any Claim not reported within ten (10) calendar days shall not be considered valid.

16.4 Liquidated Damages:

If the Contractor refuses or fails to perform the Project, or any part thereof, with such diligence as will insure its completion within the time specified in the bid, or any extension thereof, or fails to complete said Project within such time, the County may, by Notice to the Contractor, terminate its right to proceed with the Project or such part of the Project on which there has been delay. In such event, the County may take over the Project and execute the same to completion, by Contract or otherwise, and the Contractor and his Sureties shall be liable to the County for any excess cost occasioned by the County. If the Contractor's right to proceed is so terminated,

the County may take possession of and utilize in completing the Project such materials, appliances, and plant as may be on the site of the Project, and necessary therefor. If the County does not terminate the right of the Contractor to proceed, the Contractor shall continue the Project, in which event the actual damages for the delay will be impossible to determine and in lieu thereof, the Contractor shall pay to the County the sum specified in the Construction Contract as fixed, agreed, and liquidated damages for each calendar day of the delay until the Project is finally accepted by the County and the Contractor and his Sureties shall be liable for the amount thereof.

16.5 Additional Engineer Expense:

Should the Contractor fail to complete the Project during the specified number of calendar days, it is agreed that for each day of overrun until final completion, all costs of engineering supervision and inspection furnished by the County and/or the Engineer shall be at the costs of the Contractor and/or his Surety. Such engineering costs shall be considered to be equal to the job payroll of the County and/or the Engineer plus 150 percent thereof for overhead, plus on-the-job mileage. Such costs will be deducted from monies due the Contractor on his next Periodical Estimate for Progress Payment form. The amount of such expenses shall be construed to be in addition to other damages for delays that might be assessed by the County.

17. INTERPRETATION OF CONTRACT:

17.1 The Contract Documents comprise the entire Agreement between County and Contractor concerning the Project. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the laws of the State of Florida. Figures shown on drawings shall, in general, be followed in preference to scale measurements. Large-scale drawings shall, in general, govern small-scale drawings. The Contractor shall compare all drawings and verify the figures before laying out the work and shall be responsible for any errors which might have been avoided thereby. When dimensions on the drawings are affected by the type of equipment selected by the Contractor, the Contractor shall adjust such dimensions as conditions may require at no expense to the Owner.

17.2 It is the intent of the Contract Documents to describe a functionally complete Project, or part thereof, to be constructed in accordance with the Contract Documents. Any work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe work, materials or equipment, such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, or laws or regulations in effect at the time of opening of Bids, or on the effective date of the Agreement if there were no bids, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code, whether or not specifically incorporated by reference in the Contract Documents, shall be effective to change the duties and responsibilities of County, Contractor, or Engineer or any of their consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to Engineer, agents, or employees, any duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibility.

17.3 If during the performance of the work, the Contractor finds a conflict, error or discrepancy in the Contract Documents, the Contractor shall immediately report (verbally) to the Engineer and provide written Notice within 24 hours. The Contractor shall obtain a written interpretation or clarification from the Engineer prior to proceeding with the said work.

18. INDEMNIFICATION:

The CONTRACTOR shall indemnify and hold harmless the County, its officers, and employees, from liabilities, damages, losses and costs including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful conduct of the Contractor and persons employed, or utilized by the Contractor in the performance of the contract. This section of the Contract will survive the completion or termination of the Contract.

19. ROYALTIES AND PATENTS:

See the paragraph on Royalties and Patents within the Instructions Terms and Conditions (ITC) Section.

20. CLEANUP AND DISPOSAL:

The Contractor shall keep the construction site free of rubbish and waste materials and shall restore to their original condition those portions of the site disrupted by the construction. Cleanup and restoration shall be accomplished on a continuing basis throughout the Contract period and in such a manner as to maintain a minimum of nuisance and interference to the County, residents and workers at or adjacent to the Project site. The Contractor shall also remove, when no longer needed, all temporary structures and equipment used in his operations. It is the intent of this specification that any areas altered, damaged or degraded by the work of the Contractor or any subcontractor shall be restored to its original condition or better by the Contractor.

All materials removed from the project site for disposal as called for in the plans and specifications shall be done in a legal manor in conformance with all local, state, and federal guidelines.

21. SANITARY REGULATIONS:

Adequate sanitary facilities for the use of persons employed on the Project, properly secluded from public observations, shall be provided and maintained by the Contractor in such a manner and at such points as shall be approved by the Engineer. These facilities shall be maintained at all times without nuisance and their use shall be strictly enforced. Upon completion of the Project, they shall be removed from the Project site, leaving it clean and free from nuisance.

22. INSPECTION AND TESTING OF MATERIALS AND EQUIPMENT:

The Contractor shall pay for all factory tests required on equipment or materials. Copies of tests or certifications on pipe, brick or other materials made at the factory shall be furnished in triplicate to the Engineer. Test reports on equipment shall be reviewed by the Engineer before the equipment covered by the tests is delivered to the Project site. Test requirements are set out in the detailed specifications for the particular material.

23. SAFETY AND HEALTH REGULATIONS:

The Contractor shall comply with, and ensure that the Contractor's personnel and subcontracted personnel comply with all current applicable local, state and federal policies, regulations and standards relating to safety and health, including the Occupational Safety and Health Administration (OSHA) for the General Industry (29 CFR 1910) and for the Construction Industry (29 CFR 1926). The Contractor shall follow the Federal Environmental Protection Agency Standards and Florida Trench and Safety Act under Florida Statutes Section 553.60-553.64. The Contractor shall observe, follow and comply with all OSHA permitting instructions and

regulations for Confined Space Entry, 29 CFR 1910.146 as related to the project. These forms can be obtained electronically from OSHA's website (www.oshacfr.com) & (www.osha.gov).

24. RECORD DRAWING SUBMITTALS:

24.1 During the progress of the Project, the Contractor shall maintain accurate records of the location, length and elevation of all underground valves, fittings, piping and of all architectural, electrical, mechanical or structural features of the Project.

24.2 All locations and dimensions shall be referenced by two (2) point swing-tie method taken from permanent, readily identifiable reference points, such as building walls, columns, etc. All depths or elevations are to be taken from finished floors, finished grades, or from a permanent bench mark shown on the Project plans.

24.3 The Contractor shall keep a set of drawings at the job site. As-built plans shall be submitted for work completed at the end of each pay period. The pay request will not be processed until the as-built plans are approved by the Engineer. The Contractor shall be held responsible for the accuracy of such data, and shall bear any costs incurred in finding utilities as a result of incorrect data furnished by the Contractor.

25. SALVAGED EQUIPMENT AND MATERIALS:

Unless otherwise directed by the Engineer, salvaged materials, equipment or supplies are the property of the County and shall be cleaned and stored as directed by the Engineer.

26. NOTIFICATION:

The Contractor shall notify the County utility companies and the Engineer forty-eight (48) hours prior to any work at the site.

27. STORAGE OF MATERIALS:

Suitable storage facilities shall be provided by the Contractor at his own expense. All materials, supplies and equipment intended for use in the Project shall be stored by the Contractor to prevent damage from exposure, mixture with foreign substances, vandalism or theft. The Engineer will refuse to accept, or sample for testing, materials, supplies, or equipment that have been improperly stored. Materials found unfit for use shall not be incorporated in the Project and shall immediately be removed from the construction or storage site.

28. TESTING:

All testing shall be at the expense of the Contractor.

29. MANUFACTURER'S INSTRUCTION, SERVICE AND PARTS MANUALS:

Before the final payment is made, the Contractor shall furnish to the Engineer, for the County's use, complete manufacturer's instruction, service and parts manuals on each piece of equipment furnished under this Contract. This includes descriptive literature, installation and operating instructions, maintenance recommendations, lubrication requirements, parts lists, and other pertinent data. All data shall be bound in a single hardback, 3-ring loose leaf binder. All individual sheets not bound in groups shall be reinforced at the ring holes with gummed tape reinforcements.

30. MANUFACTURER'S SUPERVISION:

The Contractor shall provide the service of a qualified representative of the manufacturer as required to supervise the installation, testing, adjusting and starting-up and initial operation of each item of equipment furnished under this Contract. This representative shall also instruct the County's personnel as to the proper operation and maintenance of the equipment.

31. CERTIFIED CHEMICALS:

31.1.1 The Contractor shall only use U.S.D.A. or E.P.A. or F.D.A. certified chemicals during the performance of all work under this Contract. All chemicals used during the Project construction or furnished for Project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residue shall be in strict conformance with manufacturers instructions and all Local, State and Federal regulations.

31.1.2 The Contractor shall submit three (3) copies of all chemical Material Safety Data (M.S.D.) information forms to the Engineer. One (1) set of M.S.D. information forms shall be on site at all times and shall be available for inspection.

32. PHOTOGRAPHS:

The Contractor shall provide at his expense photographs to be taken just prior to construction, for unusual conditions during construction, and just after construction is completed. The photographs will show pertinent physical features along the line of construction prior to start of construction (but after all survey stake-out is complete), during construction, and just after construction is completed. All photos shall be date stamped according to the date taken. Two copies of all photographs shall be furnished to the County. Video tape will be acceptable in lieu of photographs.

33. SUBSTITUTION OF EQUIPMENT AND/OR MATERIAL

After the execution of the Contract, the Contractor's request to substitute equipment and/or material of makes and/or types for those named in the Contract will be considered for two (2) reasons only:

1. That the equipment and/or material proposed for substitution is superior in construction and/or efficiency to that named in the Contract.
2. That the equipment and/or material proposed for substitution is equal in construction and/or efficiency to that named in the Contract.

In either case, it will be assumed that the cost to the Contractor for the equipment and/or material proposed to be substituted is less than the cost for the equipment and/or material named in the Contract and, if the substitution is approved, the Contract Price shall be reduced in a corresponding amount. No request will be considered unless submitted in writing to the County and approval by the County shall also be in writing. To receive consideration, request for substitution shall be accompanied by documentary proof of the actual difference in the cost to the Contractor consisting of certified copies of equipment and/or materials, supplier's and manufacture's quotations to the Contractor covering the original equipment and/or materials, and also equipment and/or material proposed for substitution or other proof satisfactory to the County. It is the intention that the County shall receive the full benefit of the savings in cost involved in any substitution.

In all cases, the burden of proof that the equipment and/or material offered for substitution is equal or superior in construction and/or efficiency to that named in the Contract shall rest on the Contractor and the proof shall be submitted to the Engineer who will make recommendations to the County, and unless the proof is satisfactory to the County, the substitution shall not be approved. Requests for substitution, solely on the grounds that better delivery can be obtained on the equipment and/or material proposed for substitution, shall not be approved for it will be considered that the Contractor in his bid has named equipment and/or material which will permit completion of the Project within the Contract time. Request for substitution of equipment and/or material which the Contractor cannot prove to the satisfaction of the County that it is equal or superior in construction and/or efficiency to that named in the Contract will not be approved.

34. COMMUNICATIONS/IDENTIFICATION

34.1 The timely performance and completion of the required services are vitally important to the interests of the COUNTY. The contractor shall assign a Project Manager, together with other personnel as necessary to assure faithful prosecution and timely delivery of services pursuant to the requirements of this Contract. The Contractor shall notify the County in writing of the lead or project manager for the Contract at the Preconstruction conference.

- a. The Notice shall be formatted as required by the Contract
- b. The assigned Contractor's Project Manager shall be the point of contact for the Engineer and the County.
- c. The County and the Engineer will not entertain or accept information, correspondence or debate pertaining to this Contract unless submitted by the assigned Contractor's Project Manager or the authorized signing party as listed in the Contract.

34.1.1 The assigned Contractor Project Manager shall not be changed except with the written consent of the County and the Engineer unless the assigned Contractor Project Manager ceases to be employed by the Contractor. The Contractor shall provide Notice for such a change within two (2) working days.

34.2 The Contractor shall require that all employees have some type of visible personnel identification on the individual employee. The Contractor shall submit to the County the following information for each employee: 1) Name, 2) Position, and 3) Title.

This page left intentionally blank

CONSTRUCTION CONTRACT

Contract for: **CENTRAL COUNTY LANDFILL LEACHATE FORCE MAIN AND PUMP STATION, BID NO. 6125JW**

This Contract made and entered into this ____ day of _____, 20____, by and between _____, a _____ corporation hereinafter called the "Contractor," and Sarasota County, a political subdivision of the State of Florida, hereinafter called the "County,"

WITNESSETH:

- I. **Construction Materials, Services, and Labor:** That for and in consideration of the mutual promises and covenants hereinafter contained, together with the money consideration hereinafter recited, the Contractor shall furnish all the labor, services and materials for the construction of **CENTRAL COUNTY LANDFILL LEACHATE FORCE MAIN AND PUMP STATION, Bid No. 6125JW.** All work and labor shall be done in accordance with the plans and specifications on file with the Sarasota County Engineer, as listed in Article III, receipt of which is hereby acknowledged and which plans and specifications are made a part of the Contract, the same as though they were set forth at length herein and by reference hereto made a part hereof.
- II. **Contract Price:** In consideration of the work, labor, services and materials to be furnished by the Contractor, in accordance with said plans and specifications, the County agrees to pay to the Contractor, upon the completion and acceptance thereof by the County, or its duly authorized agent, the total Contract price of (\$ _____).
(Contract price in words)
- The Contract price includes a 5% contingency amount for change orders that may be authorized in the discretion of the Administrative Agent.
- III. **Contract Documents:** The Contract documents, which comprise the entire Contract between County and Contractor and which are made a part hereof by this reference, consist of the following:
1. Bid Disclosure Act Form
 2. Invitation for Bids
 3. Instructions, Terms, and Conditions
 4. Florida Trench Safety act
 5. General Conditions
 6. Bid Form
 7. Drug-free Workplace Program
 8. Release of Lien(s)
 9. Status of Contracts on Hand
 10. Minority Business Enterprise Project Plan
 11. Performance and Payment Bond and Power of Attorney
 12. Contract
 13. Stored Materials Affidavit

14. Technical Specifications
15. Permits
16. Project plans dated July 2005 and specifications dated October 2005
17. All addenda issued before the bid opening date
18. All modifications and change orders issued
19. The Notice to Proceed issued by The Environmental Services Business Center
20. Project Purchase Order(s)

IV. **Performance and Payment Bond:** The Contractor shall furnish to the County, prior to the commencement of operations hereunder, a Performance and Payment Bond executed by the Contractor, and a surety company authorized to do business in the State of Florida, in an amount no less than the Contract price herein, which bond shall be conditioned upon the successful completion of all work, labor, services, and materials to be provided and furnished hereunder, and the payment of all subcontractors, materialmen, and laborers. The County will only accept a Performance and Payment Bond with an A.M. Best rating of 'A-' (Excellent) or better for Bids requiring bonds of \$500,000 or greater, or 'B+' (Very Good) or better for Bids requiring a bond of less than \$500,000. Said bond shall be subject to the approval of the Board of County Commissioners of Sarasota County, Florida.

V. **Insurance:** Before performing any contract work, a CONTRACTOR shall procure and maintain, during the life of the contract, unless otherwise specified, insurance listed below. The policies of insurance shall be primary and written on forms acceptable to the County and placed with insurance carriers approved and licensed by the Insurance Department in the State of Florida and meet a minimum financial AM Best Company rating of no less than "A- Excellent: FSC VII." No changes are to be made to these specifications without prior written specific approval by Sarasota County Risk Management.

1. **WORKERS' COMPENSATION:** CONTRACTOR will provide Workers' Compensation insurance on behalf of all employees who are to provide a service under this contract, as required under Florida Laws, Chapter 440, including Employer's Liability with limits of not less than \$100,000 per employee per accident, \$500,000 disease aggregate, and \$100,000 per employee per disease.

In the event the CONTRACTOR sublets any part or parts of its contract work to a sub-contractor(s), all of the employees of the CONTRACTOR and sub-contractors engaged on contract work shall be deemed to be employed in one and the same business, and the CONTRACTOR shall be liable for, and shall secure, Workers' Compensation coverage for all such employees, except for employees of a sub-contractor who has secured its own Workers' Compensation coverage. The CONTRACTOR must require all sub-contractors to provide evidence of Workers' Compensation insurance or the "Purged Notice of Election to be Exempt." In the event the CONTRACTOR has "leased" employees, the CONTRACTOR or the employee leasing company must provide evidence of a Minimum Premium Workers' Compensation policy, and the CONTRACTOR must be the named insured. All certificates of insurance shall list 'Sarasota County Government' as certificate holder and be mailed to Sarasota County Risk Management, 1660 Ringling Blvd., 3rd Floor, Sarasota, FL 34236.

2. **COMMERCIAL GENERAL LIABILITY:** Including but not limited to bodily injury, property damage, contractual, products and completed operations, watercraft, if under twenty-six (26) feet and Ocean Marine if over, and personal injury with limits of not less than **\$1,000,000** per occurrence, **\$1,000,000** aggregate covering all work performed under this contract.
3. **AUTOMOBILE LIABILITY:** Including bodily injury and property damage, including all vehicles owned, leased, hired and non-owned vehicles with limits of not less than **\$1,000,000** combined single limit covering all work performed under this contract..

If the CONTRACTOR is shipping a product via common carrier, automobile liability coverage will be waived, however Transit coverage must be provided, including coverage for loss or damage to property while in transit, until delivered and accepted by the County. Delivery does not constitute acceptance. The CONTRACTOR shall be responsible for any loss or damage sustained in delivery/transit.

4. **UMBRELLA LIABILITY:** With limits of not less than **\$5,000,000** per occurrence covering all work performed under this contract.
5. **HAZARDOUS MATERIALS INSURANCE:** For the purpose of this section, the term "hazardous materials" includes all materials and substances which are now designated or defined as hazardous by Florida or Federal law or by the rules or regulations of Florida or any Federal Agency. If work being performed involves hazardous materials, the need to procure and maintain any or all of the following coverage will be specifically addressed upon review of exposure. However, if hazardous materials are identified while carrying out this contract, no further work is to be performed in the area of the hazardous material until Sarasota County Risk Management has been consulted as to the potential need to procure and maintain any or all of the following coverage through an addendum to the contract:
 - a. **CONTRACTORS POLLUTION LIABILITY** – For sudden and gradual occurrences and in an amount no less than **\$1,000,000** per claim and **\$1,000,000** in the aggregate arising out of work performed under this contract, including, but not limited to, all hazardous materials identified under the contract.
 - b. **ASBESTOS LIABILITY** – For sudden and gradual occurrences and in an amount no less than **\$1,000,000** per claim and **\$1,000,000** in the aggregate arising out of work performed under this contract.
 - c. **DISPOSAL** – When applicable, the CONTRACTOR shall designate the disposal site and furnish a Certificate of Insurance from the disposal facility for Environmental Impairment Liability Insurance, covering liability for sudden and accidental occurrences in an amount not less than **\$3,000,000** per claim and **\$3,000,000** in the aggregate and shall include liability for non-sudden occurrences in an amount not less than **\$6,000,000** per claim and **\$6,000,000** in the aggregate.
 - d. **HAZARDOUS WASTE TRANSPORTATION** – When applicable, the CONTRACTOR shall designate the hauler and furnish a Certificate of Insurance from the hauler for Automobile Liability Insurance with Endorsement MCS90 for liability arising out of the transportation of hazardous materials with an

amount not less than \$1,000,000 annual aggregate and provide a valid EPA identification number.

- e. CERTIFICATES OF INSURANCE – Shall clearly state the hazardous material exposure work being performed under the contract.

- 6. Builders' Risk INSTALLATION COVERAGE: CONTRACTOR must provide Builders' Risk installation coverage to include coverage for materials stored at the project site, property while in transit, and property stored at a temporary location for the amount of materials involved in this contract.

POLICY FORM

- 1. All policies required by this contract, with the exception of Professional Liability and Workers' Compensation, or unless specific approval is given by County Risk Management, are to be written on an occurrence basis, shall name the County of Sarasota, its Commissioners, Officers, Agents, Employees and Volunteers as additional insured as their interest may appear under this Contract. Insurer(s), with the exception of Professional Liability and Workers' Compensation, shall agree to waive all rights of subrogation against the County of Sarasota, its Commissioners, Officers, Agents, Employees or Volunteers.
- 2. Insurance requirements itemized in this contract, and required of the CONTRACTOR, shall be provided on behalf of all sub-contractors to cover their operations performed under this contract. The CONTRACTOR shall be held responsible for any modifications, deviations, or omissions in these insurance requirements as they apply to sub-contractors.
- 3. Each insurance policy required by this contract shall:
 - a. Apply separately to each insured against whom claim is made and suit is brought, except with respect to limits of the insurer's liability.
 - d. Be endorsed to state that coverage shall not be suspended, voided or canceled by either party except after thirty (30) calendar days prior written notice by certified mail, return receipt requested, has been given to County Risk Management.
- 4. The County of Sarasota shall retain the right to review, at any time, coverage, form, and amount of insurance.
- 5. The procuring of required policies of insurance shall not be construed to limit CONTRACTOR's liability nor to fulfill the indemnification provisions and requirements of this contract.
- 6. The CONTRACTOR shall be solely responsible for payment of all premiums for insurance contributing to the satisfaction of this contract and shall be solely responsible for the payment of all deductibles and retentions to which such policies are subject, whether or not Sarasota County is an insured under the policy.
- 7. Claims Made Policies will be accepted for professional and hazardous materials and such other risks as are authorized by County Risk Management. All Claims Made Policies contributing to the satisfaction of the insurance requirements herein shall have

an extended reporting period option or automatic coverage of not less than two years. If provided as an option, the CONTRACTOR agrees to purchase the extended reporting period on cancellation or termination unless a new policy is affected with a retroactive date, including at least the last policy year.

8. Certificates of Insurance evidencing Claims Made or Occurrence Form Coverage and conditions to this Contract, as well as the County's contract number and description of work, are to be furnished to Sarasota County Risk Management. (1660 Ringling Boulevard, 3rd Floor, Sarasota, FL 34236) prior to commencement of work AND a minimum of thirty (30) calendar days prior to expiration of the insurance contract, when applicable. All insurance certificates shall be received by County Risk Management before the CONTRACTOR will be allowed to commence or continue work.
9. Notices of Accidents (occurrences) and Notices of Claims associated with work being performed under this Contract, shall be provided to the CONTRACTOR's/sub-contractor's/Consultant's insurance company and County Risk Management as soon as practicable after notice to the insured.

VI. **Contractor's Affidavit:** When all work contemplated by the Contract has been completed, inspected and approved by the County or its duly authorized agent, the Contractor shall furnish to the County the Contractor's affidavit as required by the Construction Lien Law, Florida Statutes Ch. 713. Signed Release of Lien may also be required by the County at its option.

VII. **Payment:** Upon certification and approval by the County or its duly authorized agent, monthly payments may be made to the Contractor upon his application for all services or work completed or materials furnished in accordance with the Contract. All pay requests must be submitted on diskette, with a hard copy attached, and in a form satisfactory to the Clerk of Court who initiates disbursements. Prior to substantial completion, monthly payments shall be made on the value of materials furnished or services and work completed up to the time of said application, less an amount retained as shown on the "Retainage Table" of the General Conditions 13.2.3.1. Retainage may be reduced upon issuance of the Certificate of Substantial Completion by the County if, in the sole opinion of the County, sufficient progress on the schedule has been accomplished, all Notices of Lien have been resolved, and the County has retained adequate retainage for the final completion of the Project and all estimated liquidated damages. The County shall inform the Contractor's Surety of any reduction in retainage. Contractors must update each new pay request in accordance with any changes made to the previous submittal. Final payment shall be made after approval by the County or its duly authorized agent of all work, materials or services required under this Contract.

- a. Monthly pay requests shall be submitted each month on the anniversary date of the Notice to Proceed.
- b. Monthly pay requests for less than \$200 are not acceptable and will not be processed, except for a final pay request.

VIII. **Time for Performance:** Time is of the essence in the performance of this Contract. The Contractor specifically agrees that contract time will begin on the date that the contract is awarded by the Board of County Commissioners. All work to be performed under the provisions of this Contract shall be completed to **Substantial Completion** in not more than **one hundred eighty (180) calendar days**, and an additional 30 days to **Final Acceptance**, subject only to delays caused through no fault of the Contractor or acts of God.

IX. **Liability of the Contractor:** The Contractor shall indemnify and hold harmless the County, its officers, and employees, from liabilities, damages, losses and costs including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful conduct of the Contractor and persons employed, or utilized by the Contractor in the performance of the contract.

This section of the Contract will survive the completion or termination of the Contract.

X. **Changes:** No changes to this Contract or the performance contemplated hereunder shall be made unless the same are in writing and signed by the Parties hereto. In the event of any disagreement as to the provisions of this Contract with the plans and specifications that are made a part hereof by reference, the Contract shall control.

XI. **Liquidated Damages:** The Parties to this Contract agree that time is of the essence in the work provided for herein and that a precise determination of actual damages which would be incurred by the County for delay in the completion of the work provided for herein, aside from the additional cost of inspection and supervision, would be difficult to ascertain. Accordingly, the Parties to the Contract agree that the liquidated damages for those items of damage not otherwise provided for by this Contract, for each and every day that the time consumed in completing the work provided for in these construction documents exceeds the time(s) allowed therefore, shall be the amount(s) stated below per day, including Saturdays, Sundays, and legal holidays. The Parties specifically agree that the liquidated damages provided for herein do not constitute a penalty. Furthermore, since the additional cost of inspection and supervision arising from a delay is not difficult to ascertain, it is agreed that the Contractor shall pay, in addition to the liquidated damages provided for herein, all expenses for inspection and supervision occasioned by the failure of the Contractor to complete the work within the time(s) fixed for completion herein. The amount(s) of liquidated damages together with the additional costs for inspection and supervision occasioned by the Contractor's delay will be deducted and retained out of the monies payable to the Contractor. If not so deducted, the Contractor and sureties for the Contractor shall be liable therefore. The amount of liquidated damages to be assessed for each calendar day that Substantial Completion is delayed beyond the required date of Substantial Completion shall be **one thousand (\$1,000.00) Dollars per day**. The amount of liquidated damages to be assessed for each calendar day that Final Acceptance is delayed beyond the required date of Final Acceptance shall be **two hundred fifty (\$250.00) Dollars per day**.

XII. **Contractor's Representations:** Contractor makes the following representations:

1. CONTRACTOR has familiarized himself with the nature and extent of the Contract Documents, work, locality, and with all local conditions and federal, state and local laws, ordinances, rules and regulations that in any manner may affect cost, progress or performance of the work.

2. CONTRACTOR has studied carefully all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the work which were relied upon by the Engineer in the preparation of the Drawings and Specifications and which have been identified in the General Conditions.

3. CONTRACTOR has made or caused to be made examinations, investigations, tests and studies of such reports, and related data, in addition to those referred to in Number 2 of this Section of the Contract and Paragraph 8.2 of General Conditions as he deems necessary for the performance of the work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, tests, reports or similar data are or will be required by CONTRACTOR for such purposes.

4. CONTRACTOR has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.

5. CONTRACTOR has given Engineer written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents and the written resolution thereof by Engineer is acceptable to CONTRACTOR.

6. CONTRACTOR declares that submission of a bid for the work constitutes an incontrovertible representation that the Contractor has complied with every requirement of this Section and that Contract documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of work.

7. Equal Opportunity: The Contractor assures that no person shall be discriminated against on the grounds of race, color, creed, national origin, handicap, age or sex, in any activity under this Contract.

8. Public Entity Crimes: In accordance with Section 287.133, Florida Statutes, a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases or real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017 for Category Two for a period of 36 months from the date of being placed on the convicted vendor list.

XIII. Entire Contract: These Contract documents constitutes the entire understanding and Contract between the Parties and supersedes any and all written or oral representations, statements, negotiations, or Contracts previously existing between the parties with respect to the subject matters of this Contract. The Contractor recognizes that any representations, statements, or negotiations made by County staff do not suffice to legally bind the County in a contractual relationship unless they have been reduced to writing and signed by an authorized County representative. This Contract shall inure to the benefit of and be binding upon the Parties, their respective assigns, and successors in interest.

- XIV. Notice Provision:** Any notice or other communications concerning material changes to the Contract, shall be sent via certified U.S. Mail, return receipt requested, postage prepaid to the relevant address listed below.

Contract clarifications or questions regarding the interpretation of plans and/or specifications not involving: (a) any Contract claim and/or dispute, (b) questions of time not involving extension, delay, or reduction of time, (c) monetary or compensatory issues, (d) fully executed IFCA's (Interim Field Change Agreement) and/or (e) material changes to the contract, shall be sufficiently given if delivered personally or sent via U.S. Mail, postage prepaid, addressed as follows.

Contractor Representative:
print or type information

County's Project Administrator:

Name _____
Title _____
Address _____

Telephone _____
Fax _____
e-mail _____

Name Greg Rouse, P.E.
Title Acting Engineering Manager
Address 1001 Sarasota Center Blvd.
Sarasota, FL 34240
Telephone 941/861-0548
Fax 941/861-0589
e-mail grouse@scgov.net

- XV. Waivers:** Failures or waivers to insist on strict performance of any covenant, condition, or provision of this Contract by the Parties, their successors or assigns shall not be deemed a waiver of any of its rights or remedies, nor shall it relieve the other party from performing any subsequent obligations strictly in accordance with the terms of this Contract.
- XVI. Modifications:** This Contract may be modified only by instrument in writing and signed by the Parties hereto as aforesaid.
- XVII. Counterparts.** This Contract may be executed in any number of counterparts, any one of which may be taken as an original.
- XVIII. No Third Party Rights.** The parties hereto do not intend nor shall this Contract be construed to grant any rights, privileges or interest to any third party.
- XIX. Remedies.** The parties hereto agree that remedies for damages or any other remedies provided for herein shall be construed to be cumulative and not exclusive of any other remedy otherwise available under law.

XX. Access To Records. CONTRACTOR, its employees and agents including all subcontractors, shall allow access to its records during normal business hours to the COUNTY, its employees and agents.

XXI. Severability. If any provision of this Contract is found by a court of competent jurisdiction to be in conflict with an applicable statute or ordinance, or is otherwise unenforceable, then such provision shall be deemed null and void to the extent of such conflict, but shall not invalidate any other provision of this Contract.

XXII. Jurisdiction and Venue: Jurisdiction and Venue for purposes of any legal action founded upon this Contract shall be in Sarasota County, Florida. This Contract shall be governed by the laws of the State of Florida.

There will be no arbitration on claims allegedly arising under this Contract between the COUNTY and the CONTRACTOR.

In the event of a dispute or claim arising out of this Contract, the parties agree first to try in good faith to settle the dispute by mediation in Sarasota County, Florida under the Commercial Mediation Rules of the American Arbitration Association, before resorting to litigation. In the event such mediation does not result in a suitable resolution, then litigation will be used.

[The remainder of this page is intentionally blank.]

IN WITNESS WHEREOF, the parties have hereto set their hands and seal the day and year first above mentioned.

WITNESS:

Print

Name: _____

Signed By: _____

Date: _____

CONTRACTOR:

Print Name: _____

Signed By: _____

Title: _____

Date: _____

(SEAL)

SARASOTA COUNTY

**BOARD OF COUNTY COMMISSIONERS
OF SARASOTA COUNTY FLORIDA**

By: _____

Chairman

Date: _____

(SEAL)

ATTEST:

Karen E. Rushing, Clerk of Circuit
Court and Ex-Officio Clerk of the Board
of County Commissioners

By: _____

Deputy Clerk

APPROVED AS TO FORM AND CORRECTNESS:

By: _____

County Attorney

SARASOTA COUNTY GOVERNMENT

PERFORMANCE AND PAYMENT BOND

In compliance with F.S. Chapter 255.05(1)(a)

BOND NO.:

CONTRACTOR NAME:

CONTRACTOR ADDRESS:

CONTRACTOR PHONE NO.:

SURETY COMPANY:

SURETY AGENT:

OWNER NAME:

OWNER ADDRESS

OWNER PHONE NO.:

BOND AMOUNT:

CONTRACT NO.: (if applicable)

DESCRIPTION OF WORK:

Sarasota County Board of County Commissioners

1660 Ringling Boulevard

Sarasota, Florida 34236

(941) 861-5000

Propose to construct a pump station and a 5.2 mile 4" diameter force main to pump leachate from the Central County Landfill to Lift Station 376-0527 on Knights Trail Road just north of Laurel Road.

PROJECT ADDRESS:

4000 Knights Trail Road @ The Central County Landfill to Lift Station 376-0527 on Knights Trail Road just north of Laurel Road.

LEGAL DESCRIPTION:

TH W 100 FT OF SEC 26-37-19

PORTION OF SEC 27-37-19 AS DESC IN ORI 2004170254, SUBJ TO 64,460 C-SF ESMT AS DESC IN OR 527/45, CONTAINING 178 C-AC M/L

THAT PORTION OF SE 1/4 OF SEC 28 LYING ELY OF C/L OF COWPEN SLOUGH CONTAINING 1.2 C-AC M/L

THAT PORTION OF SEC 33 LYING ELY OF C/L OF COWPEN SLOUGH ALSO A 0.45 AC M/L TRACT LYING IN N 1/2 OF SEC 4-38-19 DESC IN OR 2419/ 1075 CONTAINING 160.45 C-AC M/L

SEC 34-37-19 LESS SE 1/4

SE 1/4 OF SEC 34-37-19

TH W 100 FT OF SEC 35-37-19

COUNTY LANDFILL SEC 1-38-19 LESS NW 1/4 THEREOF

COUNTY LANDFILL SEC 2-38-19 LESS THE NE 1/4 THEREOF IN

SARASOTA COUNTY GOVERNMENT

PERFORMANCE AND PAYMENT BOND

In compliance with F.S. Chapter 255.05(1)(a)

BY THIS BOND, We _____ as Principal and _____ a corporation,
as Surety, are bound to _____, herein called Owner, in the sum of \$
_____, for payment of which we bind ourselves, our heirs, personal
representatives, successors, and assigns, jointly and severally.

THE CONDITIONS OF THIS BOND is that if Principal:

1. Performs the contract dated _____, 20____, between Principal and Owner for construction of _____ the contract being made a part of this bond by reference, at the times and in the manner prescribed in the contract; and
2. Promptly makes payments to all claimants, as defined in Section 255.05 (1) Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the work provided for in the contract; and
3. Pays Owner all losses, damages, expenses, costs, and attorney's fees, including appellate proceedings, that Owner sustains because of a default by Principal under the contract; and
4. Performs the guarantee of all work and materials furnished under the contract for the time specified in the contract, then this bond is void; other wise it remains in full force.
Any changes in or under the contract documents and compliance or noncompliance with any formalities connected with the contract or the changes does not affect Surety's obligation under this bond.

IN WITNESS WHEREOF, the said PRINCIPAL and SURETY have signed and sealed this instrument this _____ day
of _____, 20____.

Principal

By: _____
As President

(SEAL)

Surety

By _____

APPROVED as to form and execution:

By: _____
Attorney to Board of
County Commissioners of
Sarasota County, Florida

Any Claims under this bond may be addressed to
(name and address of Surety): _____

SARASOTA COUNTY GOVERNMENT

PERFORMANCE AND PAYMENT BOND

In compliance with F.S. Chapter 255.05(1)(a)

Telephone No:
Name and address of agent or
Representative in Florida if
Different from above:

Telephone No:

This page left intentionally blank

**STANDARD FORM FOR CONTRACTOR'S FINAL AFFIDAVIT &
RELEASE OF LIEN**

Project Name: CENTRAL COUNTY LANDFILL LEACHATE FORCE MAIN AND PUMP STATION, **Bid Number:** 6125JW **CIP Number:** 95209

STATE OF FLORIDA, COUNTY OF SARASOTA

Before me, the undersigned authority, personally appeared _____

_____, who, after being by me first duly sworn, deposes and says that:

1. He/She is _____ of _____,
(Title of Officer) (Name of Company)
doing business in the State of Florida, hereinafter called "Contractor".
2. Contractor pursuant to a contract dated _____, hereinafter referred to as
3. "Contract", with Sarasota County, Florida, hereinafter referred to as "County", has heretofore furnished or caused to be furnished labor, material and services for the construction of certain improvements as more particularly set forth in said contract.
3. Contractor represents that all work to be performed under the aforesaid contract has been fully completed and that all persons and firms who furnished material, labor and/or services incident to the completion of said work have been paid in full except to the following:

NAME	ADDRESS	AMOUNT DUE
(Write in "None" if all persons and firms have been paid in full)		

4. The undersigned affiant for and in consideration of final payment to him in the amount of \$ _____, and all other previous payments paid by County to contractor, does hereby for and in behalf of the contractor, waive, release, remise and relinquish the contractor's rights to claim, demand or impose a lien or liens for work done or materials and/or services furnished or any other class of lien whatsoever, on any of the premises owned by County on which improvements have been completed in connection with the aforementioned contract.
5. The affiant herein does hereby represent that he has authority to execute a full and final Release of Lien for and in behalf of the contractor as set forth above.
6. The affiant herein makes this Affidavit and Release of Lien for the express purpose of

02/05/03

Dept. of Environmental
Protection
APR 27 2006
Southwest District

inducing the County to make final disbursement and payment to the contractor in the amount
of \$_____.

7. This Affidavit and Release of Lien is made by affiant with full knowledge of the applicable laws of the State of Florida. In addition to such rights as may be afforded to County under said applicable laws, affiant expressly agrees to indemnify and save County harmless from any and all actual costs and expenses, including reasonable attorney's fees, arising out of claims by laborers, subcontractors or materialmen who might claim that they have not been paid for services or material furnished by or through the contractor in connection with the work performed under the aforementioned contract.

Name of Corporation

By: _____
President

(CORPORATE SEAL)

WITNESS:

Name of Corporation

Sworn to and subscribed before me this ____ day of _____, A.D. 20 ____.

Notary Public

(NOTARY SEAL)

My Commission Expires: _____

02/05/03

SECTION 00500

GENERAL

PART 1 – GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The Contractor performing the utility work covered by this contract shall be qualified by the County to perform utility work. The work covered by these specifications includes the furnishing of all labor, equipment, materials and performing all operations in connection with the installation of utility mains, lift stations, pump stations, and all appurtenant work, in compliance with the drawings, specifications and Contract Documents. The Contractor shall perform all operations and incidentals necessary to complete the work in a turnkey condition. The Prime Contractor may sublet a portion of the work, but shall perform with his own organization work amounting to not less than 50% of the total Contract amount.

1.02 SUMMARY OF WORK

- A. Construct a pump station and a 5.2 mile 4" diameter force main to pump leachate from the Central County Landfill to Lift Station 376-0527 on Knights Trail Road just north of Laurel Road as shown and detailed in the construction plans and specifications.

1.03 UTILITY

- A. The Contractor shall recognize that the primary function of this project is to convey leachate from the Sarasota County Central County Landfill to the lift station near Laurel road on knight's trail road.

1.04 MATERIALS

- A. It is the Contractor's responsibility to inspect materials for damage or abnormalities. All materials shall be new. No used, remanufactured, damaged or rebuilt materials shall be used.

1.05 LOCATION

- A. Work covered under this project is located within Sarasota County.

07/05/04

GENERAL

00500-1

1.06 SEQUENCE OF WORK

A. The Contractor shall:

1. Schedule his work as set forth in the General Conditions and as described in Section 01310;
2. Construct work in stages to accommodate the County's use of the premises during the construction period; coordinate the construction schedule and operations with the County's Representative;
3. And construct the work in stages to provide for public convenience.
 - a. Not close off public use of facilities until completion of one stage of construction will provide alternative usage.
 - b. Construct the stages of the project as indicated on the drawings.

1.07 SALVAGED EQUIPMENT AND MATERIALS

- A. Salvaged materials, equipment or supplies are the property of the Sarasota County Environmental Services, Utilities and shall be delivered to Field Operations. Should the County choose to not accept these materials they shall be removed from the project site as soon as practical. Surplus excavated materials shall be disposed of in accordance with state and local laws by the Contractor in a legal manner at no additional cost to the County. Contact Field Operations to coordinate delivery of salvage material (861-6050).

1.08 RECORD DATA

- A. The Contractor shall maintain, during the progress of the project, accurate records of the location, length and shall include elevation of all new and existing pipe lines and appurtenances. A set of drawings will be provided for the Contractor to be kept at the job site for this purpose. Promptly after completion of any portion of the work provided, as paid for in this Contract, the Contractor shall deliver to the Engineer the drawings with accurate notations recorded thereon as necessary to revise the drawings for record purposes. Record drawing data shall be submitted with each pay application, said pay application shall not be accepted until record drawing is deemed up to date by the Engineer of Record and the County Project Manager. Information to be shown for utility mains shall include the location of all crosses, tees, wyes, bends, valves, curb stops, meter boxes, hydrants, stub-outs, blow-offs, air release valves, etc., by using a two (2) point swing measurement from permanent physical features that can readily be found on the drawing and in the field, in a table format. The Contractor shall furnish "as-built" top of pipe elevations and finish grade for top of trench for all

07/05/04

GENERAL

00500-2

utility mains at maximum intervals of one hundred feet (100') and at all utility crossings, at all fittings and valves and all changes in grade and pipe type. For directional drilled utility mains, the "as-built" top of pipe elevations shall be recorded every rod length change and plotted on the plan and profile drawings sheets. In addition, the Contractor shall reference all new utility mains by the distance to the right-of-way or property markers. The Contractor shall be held responsible for the accuracy of such data and shall bear any costs incurred in finding utilities as a result of incorrect data furnished by the Contractor.

All visible utility features shall be surveyed using conventional and/or GPS equipment at survey grade level and in accordance with Sarasota County Survey/GPS Standards. The recorded/bluebooked GPS control monument, recorded benchmark elevation, and the vertical datum used shall be noted on the record drawings. Coordinates shall be based on the State Plane, Florida West 1983.

1.09 LINE, VALVE AND FIRE HYDRANT PLACEMENT

- A. The Contractor and the County's representative shall inspect the location of all lines, valves and fire hydrants in the field at the time of construction, and adjustments shall be made as directed by the County's representative. It is the intent to have valves and hydrants located out of the ditch and curb lines.

1.10 CONNECTIONS TO EXISTING MAINS

- A. Where connections are required between new work and existing utility mains, the connection shall be made in a thorough and first class manner, using proper fittings to suit the actual conditions. Ductile iron mechanical joint sleeve shall be used for connection to existing utility mains. When a connection is made to an existing fitting in the line, the Contractor shall schedule his work so that excavation and locating the existing fittings can be completed prior to starting trench work on the line. Cut-ins into lines shall be done at a time approved by the Engineer. The Contractor shall not make any connections or service taps into existing utility mains until their work has been tested and accepted by the Engineer.

1.11 UTILITY SERVICE INTERRUPTIONS

- A. Interruptions to any utility service or operation shall be **minimized**. The Contractor shall submit plans and schedules to the Engineer for approval by the proper authority before any shutdown or any interruption in service takes place. The Contractor shall provide a minimum five (5) business day notice to the Utility to locate and exercise valves prior to the shut down. The Inspector will complete a Water Shut Down Request to the utility Operations and shall include a utility map with all valves identified within the shutdown service area. After

07/05/04

GENERAL

00500-3

the plans and schedule for the utility service interruption shut-downs have been approved, the Contractor shall be responsible for posting shut-off notices to customers five (5) business days prior to shut down. The County Project Manager shall be present at the time of the shutdown and assure the shut down requirements are coordinated during the tie-in. All work to be done in accordance with Department of Health rules and policies. If commercial properties are affected, then the Contractor shall provide bottled water to the consumers/businesses that cannot boil water onsite. Cost shall be included in the cost of "Furnish and Install Pipe".

- B. During all phases of the utility main construction and removal, interruptions to existing services shall be kept to a **minimum**. No interruptions shall take place without the approval of the Engineer.

1.12 EXISTING UTILITY MAINS

- A. Elevations of existing utilities as shown on the drawings are approximate. The Contractor shall be responsible for verifying the location (horizontal and vertical) of any utilities that have been identified by Sunshine One locating service or shown on the construction drawings within the work area limits and the areas that may pose a potential conflict with any work. Soft digs/potholes or other exploratory methods to determine specific locations and elevations of existing utilities shall be performed by the Contractor where needed at no additional cost to the County. The Contractor shall field verify the line and grade of existing utilities. Based on the identified grade and alignment of the existing utilities, changes in the construction plans may be required. Discrepancies in alignment or grade shall be brought to the immediate attention of the Engineer. In addition to verifying the grade when making tie-ins, the Contractor shall accurately verify the pipe outside diameter and material type of the existing pipe. The Contractor shall not proceed with tie-in until all information has been confirmed with the Engineer. The Contractor shall verify all location information well in advance to avoid work delays.

1.13 UTILITY SYSTEM CODES

- A. All construction shall meet or exceed the requirements of the Sarasota County "Uniform Water, Wastewater and Reuse System Code", the latest revision, and these Specifications. In case there is a conflict between the Code and Specification, the most stringent requirement shall be met.

1.14 CONFLICT MANHOLE

- A. Conflict manholes are not permitted for water or sanitary sewer mains.

1.15 SERVICES

- A. Existing service locations as shown on the drawings are approximate. Upon completion of service relocation or replacement as called for on the drawings, the Contractor shall relocate or install the meter and/or reconnect the building service line as directed by the Engineer and Environmental Services, Utilities. All plumbing work on the discharge side of the meter shall be completed by a Florida Licensed Plumber.

1.16 MAINTENANCE OF TRAFFIC (MOT)

- A. Contractor shall be responsible to design and submit all maintenance of traffic (MOT) plans to the proper reviewing agencies. It will be the Contractor's responsibility to set up and maintain the MOT according to the state and/or local transportation agency regulations.
- B. All cost for setting up and maintaining the (MOT) will be included in the Contract per pipe installed. No special line item will be allowed for this task.

1.17 BY-PASS PIPING/PUMPING:

- A. The Contractor shall submit a by-pass plan to both Utilities Operations and Engineering for approval. After approval by the County, by-pass plans can be implemented with a one (1) week notice to the County. The cost for all by-pass piping/pumping shall be incidental to the project, the Contractor shall bear all costs associated with this task.

1.18 WORK WITHIN SARASOTA COUNTY RIGHTS-OF-WAY:

- A. The Contractor shall refer to the latest revised editions of Sarasota County Public Works and/or Florida Department of Transportation specifications and regulations for all work within private and public rights-of-way.
- B. The Contractor shall notify the County Project Manager five (5) days prior to starting construction to prepare a "Notice of Construction" letter. The Contractor shall deliver the letter to all residents and/or commercial businesses affected by the construction and along the pipe route 5 days after receiving the letter from the County.
- C. Any public or private property, which is used or affected by a project, will be maintained and preserved from damage during the operation and restored to its original condition upon completion or cessation of work.

- D. The County (Sarasota County Environmental Services, Utilities) shall not be responsible to reimburse the Contractor for work around unpermitted structures as described herein.
- E. Upon completion, the Contractor shall deliver a "Notification of Completion" letter to all residents along the project route. The letter shall be prepared by the County Project Manager and given to the Contractor for his use.

1.19 INSPECTION OF MATERIALS:

- A. The Contractor, 24 hours prior to delivery, shall notify the County and Engineer to schedule an inspection of the materials.

SECTION 00600

PREVENTION, CONTROL, & ABATEMENT OF EROSION & WATER POLLUTION

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. Prevention, control and abatement of erosion and water pollution shall conform to the requirements of Division Six-Environmental Controls, Section 12000 (Attached Storm Water Management for Construction Activities), and shall produce end results as required by the rules of the Department of Environmental Protection and other regulatory agencies having jurisdiction.
- B. The Contractor is required to present his schedules for construction of the project at the preconstruction conference as required. This schedule shall include a complete outline for the proposed construction of any and/or all of the pollution control and erosion abatement items detailed in Division Six-Environmental Controls, Section 12000. The Contractor is responsible for the implementation of the schedule after approval by the Engineer.
- C. The Contractor shall prepare a Stormwater Pollution Prevention Plan (SWPPP) in accordance with Chapter 62-621, F.A.C. Contractor shall complete the necessary permit forms and pay the applicable fees for Notice of Intent and Notice of Termination, and comply with weekly inspection requirements as noted in the generic permit. The SWPPP shall be presented to the Engineer at the preconstruction conference. The Environmental Protection Agency "Storm Water Management for Construction Activities - Developing Pollution Prevention Plans and Best Management Practices - Summary Guidance" is incorporated in Division Six-Environmental Controls, Section 12000 of this specification. The SWPPP shall conform to the guidelines contained in this document.

1.02 METHOD OF MEASUREMENT

- A. The quantity to be paid for under this section shall be included in the cost to furnish and install pipe and shall include all baled hay, straw, staked silt fence, floating turbidity barrier, or other material or equipment necessary for the prevention, control, and abatement of water pollution, labor; preparation of a storm water pollution prevention plan; and all monitoring, record keeping or reporting required under the SWPPP or permit conditions as provided by law or specifically identified in the Contract.

1.03 BASIS OF PAYMENT

- A. Payment shall be made under the various unit costs and lump sums found in the bid form.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

PREVENTION, CONTROL AND ABATEMENT OF EROSION AND WATER POLLUTION

This page left intentionally blank

SECTION 01026

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 EXPLANATION AND DEFINITIONS

- A. The following explanation of the Measurement and Payment for the bid form items is made for information and guidance. The omission of reference to any item in this description shall not, however, alter the intent of the bid form or relieve the Contractor of the necessity of furnishing such as a part of the Contract.

1.02 MEASUREMENT

- A. The quantities set forth in the bid form are approximate and are given to establish a uniform basis for the comparison of bids. The County reserves the right to increase or decrease the quantity of any class or portion of the work during the progress of construction in accord with the terms of the Contract.

1.03 PAYMENT

- A. Payment shall be made for the items listed on the Bid Form on the basis of the work actually performed and completed, such work including but not limited to, the furnishing of all necessary labor, materials, equipment, transportation, clean up, restoration of disturbed areas, and all other appurtenances to complete the construction and installation of the work as shown on the drawings and described in the specifications.
- B. Unit prices are used as a means of computing the final figures for bid and Contract purposes, for periodic payments for work performed, for determining value of additions or deletions and wherever else reasonable.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

Payment shall be made on the basis of work actually performed completing each item in the Contract Proposal, such work including, but not limited to, the furnishing of all necessary labor, materials, equipment, transportation, cleanup, and all other appurtenances to complete the construction and installation of the work to the configuration and extent as shown on the drawings and described in the specifications. Payment for each item includes compensation for cleanup and restorations. Cleanup and surface restorations (including pavement replacement) will be considered as ten percent (10%) of each pay item and complete payment will not be made until cleanup, restorations and as-builts are completed.

MEASUREMENT AND PAYMENT

02/05/03

01026-1

- A. Furnish and Install 4" Utility Main: Payment for furnishing and installing utility main (various types) will be made at the contract unit price per linear foot for the pipe in place and shall include all necessary fittings, labor, equipment and materials for the furnishing and laying of the pipe, mobilization, demobilization, two (2) construction signs, silt fencing and erosion control, dewatering, sheeting, construction of concrete thrust blocks and/or restrained joint piping, as required and shown on the plans and details, mylar detectable tape and locator wire, clamps, harnessing, adapters, restraining utility poles, coordinating with other utilities for locating buried cables and other utilities during construction, clearing and grubbing, excavation of all material encountered including rock, backfill, compaction, replacement of grass, sod, driveways, unpaved roadway, culverts and other surface materials disturbed but not specifically designated in the Bid Proposal, cleanup, repair of existing utilities that are disturbed during construction, protection of existing facilities, relocation of fencing as needed, flushing and/or pigging, pressure testing, record drawings, and all other work incidental to the installation of the mains complete in place. Price includes the removal and replacement of obstructions located in the path of the work including signs, fences, trees, ornamental vegetation, etc. Price also includes preparing a maintenance of traffic plan for each work site that will affect traffic safety; obtaining construction permits and approvals; construction and maintenance of any necessary detour facilities; providing of personnel and facilities to provide access to residences and businesses along the project; furnishing, installing and maintaining of traffic control barricades, railings, warning lights, and other safety devices during construction; the control of dust; and any other special requirements for safe and expeditious movements of traffic as called for in the maintenance of traffic plan developed by the Contractor and approved by the agency(s) governing traffic safety in specific work areas. Measurement of the pipe shall be to the nearest foot along the centerline of the pipe including the lengths of valves and fittings. Linear footage measurement shall be horizontal.

Note: Work includes flushing, testing and materials as specified within limits shown on plans for a complete system and all other work incidental to the installation.

- B. Furnish and Install Directional Bore: Payment for furnishing and installing directional bores will be made at the contract unit price per linear foot for the pipe in place and shall include all necessary materials, labor, equipment, dewatering, signs, traffic control, sheeting, harnessing, adjacent pipe adapters, transition fittings, restraining power poles, coordination with other utilities for relocating, locating existing facilities during construction, project staging, excavation, removal of drillers bentonite mud, cleanup and restoration, flushing, testing, record drawing preparation, and all other work incidental to the installation of the pipe complete in place. Measurement of the pipe shall be to the nearest foot along the centerline in the horizontal plane between the limits shown on the plans. If minimum radius or installation require the beginning and end of directional bores to be extended, the extension will be paid for at the unit price of utility main.

MEASUREMENT AND PAYMENT

- C. Furnish and Install Buried Valves and Valve Boxes: Payment for furnishing and installing valves will be made at the contract unit price for each size and type of valve in place. Payment shall include compensation for the valve, valve box and cover, concrete pad around valve box, and all necessary labor, materials and equipment for installation, including valve stem and valve box extensions. Payment shall also include the installation of base material below the valve per the detail. Work includes testing and all materials for a complete assembly as shown in the details and other work incidental to the acceptable installation.
- D. Furnish and Install Air Release Valve Assembly: Payment for furnishing and installing the air release valve (ARV) assembly shall be made at the contract unit price for each ARV assembly acceptably installed. Unit price shall include dewatering, excavation, backfill, compaction and all necessary labor, materials and equipment as required to install the ARV assembly per the plan detail and shall not be limited to only the piping, valve, stainless steel box or manhole.
- E. Tie into Existing Manhole Including Drop Connection: Payment for tying into the existing manhole shown on plans shall be made at the contract unit price. Unit price shall include dewatering, excavation, backfill, compaction and all necessary labor, materials and equipment per the plan detail.
- F. Furnish and Install Pump Station: Payment for furnishing and installing materials and equipment at the lift station site as shown on plans shall be made at the contract lump sum price based on percent completion and an agreed to schedule of values for the work. The work shall include dewatering, excavation, sheeting, backfill, compaction, erosion control, piping, fittings, joint restraints, valves, pumps, pump pads, control panels, flow meter and control valve assembly, electrical wiring and conduits, tie-ins, testing and start-up, and all necessary labor, materials and equipment per plans to make a complete operational system.
- G. Approved Contract Interim Field Change Agreement (IFCA): Payment for all work included under this bid item is a contingent amount and only the amount properly authorized by the County's Engineering Manager and documented will be paid to the Contractor.

END OF SECTION

MEASUREMENT AND PAYMENT

02/05/03

01026-3

This page left intentionally blank

SECTION 01050

FIELD ENGINEERING

PART 1 – GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The work of all crafts and trades shall be laid out to lines and elevations as established by the Contractor from the Drawings, or from instructions by the Engineer.
- B. Unless otherwise shown, all work shall be plumb and level, in straight lines and true planes, parallel or square to the established lines and levels. The work shall be accurately measured and fitted to tolerances as established by the best practices of the crafts and trades involved, and shall be as required to fit all parts of the work carefully and neatly together.

1.02 SURVEY REFERENCE POINTS

- A. The Contractor shall hire a Florida Professional Land Surveyor (PLS) to identify the existing control points indicated on the Drawings as required.
- B. Existing major horizontal and vertical control points for the Project are those designated on Drawings. Additional control points may be established as approved by the Engineer.
- C. The Contractor shall:
 - 1. protect control points prior to starting work;
 - 2. preserve all permanent reference points during construction;
 - 3. make no changes or relocations unless directed by the Engineer.
 - 4. report to Engineer when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations;
 - 5. re-establish any control or reference points and/or property pins destroyed at his expense.

1.03 LINES AND GRADES

- A. The Contractor's PLS shall lay out the axes of all structures and set permanent hubs marking these lines. The Contractor's PLS shall also set a bench mark or marks near the site of all structures to furnish the Contractor with the elevation. The Contractor

FIELD ENGINEERING

shall be responsible for establishing all other lines and grades required for the construction for the project.

- B. When waterlines, sewer force mains and other such pressure pipelines are involved, the Contractor's PLS will stake the location of these lines on the site. Bench marks are required for reference, these shall be established by the Contractor's PLS.
- C. The Contractor shall furnish a Florida Professional Licensed Land Surveyor with all materials, stakes and grade boards that are required for all utility construction layout. In addition, the Contractor shall furnish any aides required by the Engineer in marking the location of the various facilities on the ground, establishing bench levels and determining as-built conditions after the work is completed. The Contractor's personnel engaged in the layout work described herein and the aides furnished to the Engineer shall be fully capable of performing the duties set out herein and shall be fully qualified chiefs and/or chairmen, as required.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

FIELD ENGINEERING

02/05/03

01050-2

SECTION 01200

PROJECT MEETINGS

PART 1 – GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The Engineer shall schedule and administer a preconstruction meeting, periodic progress meetings and specially called meetings throughout the progress of the work and shall be responsible for the following:
 - 1. Prepare agenda for meeting.
 - 2. Distribute written notice of each meeting.
 - 3. Make physical arrangements for meeting. Designate who is to bring the plans and specifications.
 - 4. Preside at meetings.
 - 5. Record the minutes; include all significant proceedings and decisions.
 - 6. Reproduce and distribute copies of minutes:
 - a. To all participants in the meeting.
 - b. To all parties affected by decisions made at the meeting.
- B. Representatives of the Design and Construction Engineer, other utility companies, Department of Transportation, Public Works, Development Services, Contractors, subcontractors and suppliers attending the meetings shall be qualified and authorized to act on behalf of the entity each represents.

1.02 PRE-CONSTRUCTION MEETING

- A. Schedule promptly after the date of execution of the Contract.
- B. Location: A central site located within Sarasota County, convenient for all parties.
- C. Attendance:
 - 1. Representative from Sarasota County Environmental Services, Utilities.
 - 2. Inspector(s).

PROJECT MEETINGS

3. Engineer.
4. Contractor's Superintendent.
5. Contractor's Project Manager
6. Major Subcontractors.
7. Major Suppliers.
8. Applicable Utility Companies.
9. Safety Officer(s).
10. Others as Appropriate.

D. Suggested Agenda:

1. Distribution and discussion of:
 - a. List of major subcontractors and suppliers.
 - b. Projected construction schedules.
 - c. Schedule of values.
 - d. Pipe laying schedule.
 - e. Schedule of submittals.
2. Critical Work Sequencing.
3. Major equipment deliveries and priorities.
4. Project Coordination.
 - a. Designation of responsible personnel.
5. Procedures and processing of:
 - a. Field decisions.
 - b. Proposal requests.

PROJECT MEETINGS

- c. Submittals.
 - d. Change Orders/Interim Field Change Agreement (IFCA).
 - e. Request for Information (RFI).
 - f. Applications for Payment.
- 6. Adequacy of distribution of Contract Documents.
- 7. Procedures for maintaining record documents.
- 8. Use of premises:
 - a. Office, work and storage areas.
 - b. County's requirements.
- 9. Construction facilities, controls and construction aids.
- 10. Temporary utilities.
- 11. Safety and first-aid procedures.
- 12. Security procedures.
- 13. Housekeeping procedures.

1.03 PROGRESS MEETINGS

- A. Schedule regular periodic meetings, as required.
- B. Hold called meetings as required by progress of the work.
- C. Attendance:
 - 1. Sarasota County Environmental Services, Utilities Representative.
 - 2. Inspector(s).
 - 3. Contractor and subcontractor as appropriate to the agenda.
 - 4. Suppliers as appropriate to the agenda.
 - 5. Other utility companies.
- D. Suggested Agenda:

PROJECT MEETINGS

1. Review, approval of minutes of previous meeting.
2. Review of work progress since previous meeting.
3. Field observation, problems, and conflicts.
4. Issues which impede construction schedule.
5. Review of delivery schedules.
6. Corrective measures and procedures to regain projected schedule.
7. Revisions to construction schedule.
8. Safety.
9. Coordination of schedules.
10. Review submittal schedules; expedite as required.
11. Maintenance of quality standards.
12. Review proposed changes for:
 - a. Effect on construction schedule and on completion date.
 - b. Effect on other contracts of the Project.
13. Other business.

1.04 FIELD MEETINGS

The Contractor may call for meetings in the field to review requirements, conflict, or to coordinate the progress of work. At any such meetings between the Contractor and any regulatory agency, utility, or other Contractor that may affect the design or progress of the project, the Contractor shall give 24 hour written notice of the meeting to all parties.

END OF SECTION

PROJECT MEETINGS

01200-4

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The types of submittals controlled by these general requirements include shop drawings, product data, samples, construction schedule and miscellaneous work-related submittals. The individual submittal requirements are specified in applicable sections for each unit of work.

1. Unless otherwise noted, each item of submittal shall be submitted to the Engineer for review prior to construction or installation.
2. Engineer's review is for general conformance with the design concept and Contract Documents.

- B. The submittal will not be accepted for review unless it is clear, legible, and contains complete information and complies with the specifications. Submittals that are not accepted will be returned with attached notations of requirements necessary for acceptance. Resubmit after the material has been amended to comply with the comments.

If submittals show deviations from Contract requirements because of standard shop practice or for other reasons, the Contractor shall clearly describe such deviations in his letter of transmittal. If the Contractor fails to describe such deviations, he shall not be relieved of the responsibility of executing the work in accordance with the Contract, even though such submittals have been reviewed.

- C. "Or equal" submittals for review, shall be in accordance with General Conditions, Substitution of Equipment and/or Material.

1.02 DEFINITIONS

- A. The work-related submittals of this section, in addition to the definitions of the General Conditions and elsewhere in the Contract Documents, are defined as follows:

1. Shop drawings include custom-prepared data of all forms including drawings, diagrams, pipe laying schedule, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form

SUBMITTALS

02/05/03

01300-1

applicable to other projects.

2. Product data includes standard printed information on materials, products and systems not custom-prepared for this project, other than the designation of selections from available choices.
 3. Samples include both fabricated and unfabricated physical examples of materials, products and work; both as complete units and as smaller portions of units of work; either for limited visual inspection or (where indicated) for detailed testing and analysis.
 4. Mock-ups are a special form of samples, which are, because of size, usually constructed on the project site.
 5. Construction schedule includes custom-prepared data for the construction of said project. All stages of work shall be included. Contractor shall revise during the course of construction as needed, and submit to the Engineer with monthly application for payment.
- B. Miscellaneous submittals related directly to the work (nonadministrative) include extended warranties or guarantees, maintenance agreements, project photographs, videotapes (VHS Format), survey data and reports, physical work records, statements of applicability, quality testing, calculation, and certifying reports, copies of industry standards, record drawings, operating and maintenance materials, overrun stock, and similar information, devices and materials applicable to the work.

1.03 GENERAL SUBMITTAL REQUIREMENTS

A. Coordination and Sequencing:

1. Coordinate the preparation and processing of submittals with the performance of the work and in accordance with the schedules prepared and referred to in the paragraph on Schedules and Progress Reports in the Contract, so that work will not be delayed by submittals. Coordinate and sequence different categories of submittals for the same work, and for interfacing units of work, so that one will not be delayed for coordination with another. Do not proceed with purchasing, fabrication and delivery of work related to a submittal until submittal procedure has been successfully completed.
 - a. No extension of time will be allowed because of failure to properly coordinate and sequence submittals or for delays caused by failure to make complete submittals.

SUBMITTALS

02/05/03

01300-2

B. Preparation of Submittals:

1. Provide permanent marking on each submittal to identify it by project, date, Contractor, subcontractor, submittal name, project specification reference section and sequential number of each submittal to distinguish it from other submittals. If a bound booklet format is to be used then provide a table of contents and tab by title or specification number. Contractor's approval marking shall be on each submittal. Package each submittal appropriately for transmittal and handling. Submittals, which are received directly from sources other than through the Contractor's office, will be returned without review.
2. Where manufacturer's data sheets, catalog pages or drawings have several items shown or a selection of characteristics shown in chart and graphs, clearly mark the information to indicate exactly what will be supplied.

C. Number of Submittals Required:

1. Submit six (6) prints of shop drawings and/or copies of manufacturer's product data.

1.04 SPECIFIC CATEGORY SUBMITTAL REQUIREMENTS

A. General: Except as otherwise indicated in individual work sections, comply with the general requirements specified for each indicated category of submittal. Provide and process intermediate submittals (where required between initial and final) similar to initial submittals.

B. Shop Drawings:

1. Provide newly-prepared information, show dimensions and note which are based on field measure, identify materials and products in the work shown, indicate compliance with standards, and special coordination requirements.

a. Only shop drawing copies with the appropriate markings by the Engineer are to be used in connection with the work.

C. Product Data:

1. Collect the required data into one submittal for each materials, product or system; and mark each copy to show which choices and options are applicable to the project. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements, which have been checked, and special coordination requirements. Maintain one set of product data (for each submittal) at the project site, available for reference by

SUBMITTALS

02/05/03

01300-3

the Engineer or others.

- a. Installer's Copy: Do not proceed with the installation of materials, products or systems until a copy of the applicable product data, approved by the Engineer, is in the possession of the Installer.

D. Samples:

1. Provide units identical with the final condition of the proposed materials or products for the work. Include "range" samples (not less than three units) where variations occur, and identify each unit of each set. Provide full set of optional samples where Engineer's selection is required. Prepare samples to match the Engineer's sample where so indicated. Include information with each sample to show generic description, source or product name and manufacturer, limitations, and compliances with standards.
2. Samples are submitted for review and confirmation of color, pattern, texture and "kind" by the Engineer, who will not "test" them (except as otherwise indicated) for other requirements, which are therefore the exclusive responsibility of the Contractor.
 - a. Submittal: At his option, the Contractor may provide a preliminary submittal of a single set of samples for the Engineer's review and "Action". Otherwise, the initial submittal is the final submittal unless it is returned with "Action" which requires resubmittal.
 - 1) Submit three sets of samples in the final submittal; two sets will be returned.
 - 2) Quality Control Set: Maintain one of the returned final sets of samples at the project site, in suitable condition and available for quality control comparisons by the Engineer, and by others.
 - b. Reusable Samples: Samples which are intended or permitted to be returned and actually incorporated in the work are so indicated in the individual work sections, but must be in undamaged condition at the time of use.

E. Inspection and Test Reports:

1. Submittal is classified either as "shop drawings" or "product data", depending upon whether the report is uniquely prepared for the project or a standard publication of regular product or workmanship control testing at the point of production (respectively).

SUBMITTALS

02/05/03

01300-4

F. Warranties:

1. Refer to individual sections for specific general requirements on the submittal of warranties, guaranties, product/workmanship bonds, and maintenance agreements, which are uniquely prepared and executed for the site specific scope of the project. Furnish two executed copies and when applicable furnish additional (conformed) copies for inclusion in the maintenance manuals.

1.05 ENGINEER'S ACTION

- A. The Engineer will review each submittal and return it with the action required marked on it.
- B. The mark will be a self-explanatory action stamp, marked and executed to indicate whether submittal is accepted or returned for resubmittal.
- C. When marked RESUBMIT, do not proceed with work covered by submittal (purchasing, fabrication, delivery or other activity); revise submittal or prepare a new submittal and resubmit without delay, in accordance with Engineer's notations stating reasons for returning submittal; repeat if necessary to obtain a different action marking.
- D. Submit the required number of prints of shop drawings or copies of manufacturer's product data; two will be retained and the remainder will be returned, one of which is to be marked-up and maintained by the Contractor as the Record Document.

1.06 CLOSEOUT SUBMITTALS

- A. Refer to Section 01700 for specific general requirements on the submittal of closeout information, materials, tools and similar items.
 1. Record Document Copies: Furnish two sets
 2. Maintenance/Operating Manuals: Furnish two bound copies.
 3. Materials and Tools: Refer to individual work sections for required quantities of spare parts, extra and overrun stock, maintenance tools and devices, keys, and similar physical units to be submitted.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SUBMITTALS

02/05/03

01300-5

SECTION 01310

CONSTRUCTION SCHEDULES

PART I - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. Within ten days after receipt of the NTP or at the preconstruction meeting, whichever occurs first, the Contractor shall have prepared and submitted to the Engineer the estimated construction progress schedules for the work, based on calendar days, with subschedules of related activities, which are essential to its progress.
- B. Contractor shall submit revised progress schedules on a monthly basis. No partial payments shall be approved by the Engineer until there is an updated construction progress schedule on hand.
- C. The Contractor shall designate an authorized representative of his firm who shall be responsible for development and maintenance of the schedule and of progress and payment reports. This representative of the Contractor shall have direct project control and complete authority to act on behalf of the Contractor in fulfilling the commitments of the Contractor's schedules.
- D. The project scheduling software shall be Primavera P3e/c, or as approved by the Engineer.
- E. The progress schedule shall demonstrate complete fulfillment of all Contract Document requirements utilizing a Critical Path Method (CPM) precedence method schedule to coordinate, plan, schedule, and perform the work (including the activities of subcontractors and suppliers).

1.02 FORM OF SCHEDULES

- A. Prepare schedules in the form of a horizontal bar chart.
 - 1. Provide a separate horizontal bar for each activity within each structure or item.
 - 2. Horizontal time scale: In weeks from start of construction and identify the first work day of each month. The schedule shall identify the day, month, and year of starting and finishing each activity.
 - 3. Scale and spacing: To allow space for notations and future revisions.
 - 4. Minimum sheet size: 8 1/2 inches X 11 inches.
 - 5. Maximum sheet size: 11 inches X 17 inches.

CONSTRUCTION SCHEDULES

02/05/03

- B. Format of listings: The chronological order of the start of each item of work for each structure, item or activity.

1.03 CONTENT OF SCHEDULES

A. Construction Progress Schedule

1. Show the complete sequence of construction by activity including:
 - a. Activity beginning and ending date
 - b. Duration
 - c. Early start date
 - d. Early finish date
 - e. Total float
 - f. Predecessor
 - g. Successor
2. Show the dates for the beginning of and completion of each major element of construction in no more than a one-week increment scale. Specifically list, but not limit to:
 - a. Site clearing
 - b. Site utilities
 - c. Foundation work
 - d. Subcontractor work
 - e. Equipment installations
 - f. Instrumentation
 - g. Painting
 - h. Testing
 - i. Startup
 - j. Pipe installation
 - k. Boring and jacking
 - l. Restoration
 - m. Pipeline tie-ins and shutdowns
 - n. Roadway and lane closures
 - o. FPL service
3. Show projected percentage of completion for each item, as of the first day of each month.
4. Show projected dollar cash flow requirements for each month of construction.
5. The schedule shall clearly identify the project's critical path.

- B. Submittal's schedule for shop drawings and samples in accordance with Section 01300. Show:

CONSTRUCTION SCHEDULES

02/05/03

01310-2

1. The dates for Contractor's submittals.
 2. The dates submittals will be required for County-furnished products, if applicable.
 3. The dates that the Engineer's review will be completed.
- C. A typewritten list of all long lead items (equipment, materials, etc.) with the anticipated delivery date.

1.04 PROGRESS REVISIONS

- A. Indicate progress of each activity as of the date of revision.
- B. Show changes occurring since previous revision of schedule:
1. Major changes in scope.
 2. Activities modified since previous revision.
 4. Other identifiable changes.
- C. Provide a narrative report as needed to define:
1. Problem areas, anticipated delays, and the impact on the schedule.
 2. Corrective action recommended and its effect.
 3. The effect of changes on schedules of other prime contractor(s) and/or others.

1.05 SUBMISSIONS

- A. Submit initial schedules to the Engineer within ten days after receipt of the NTP or at the preconstruction meeting, whichever occurs first.
1. The Engineer will review schedules and return review copy.
 2. The Contractor shall resubmit a revised schedule within 7 days after return of review copy, if required.
- B. Submit revised monthly progress schedules with that month's application for payment.

1.06 DISTRIBUTION

- A. Distribute copies of the reviewed schedules to:
1. The Engineer (two hard copies)
 2. Subcontractors (as needed)
 2. County (two hard copies)
- B. Instruct recipients to report promptly to the Contractor, in writing, any problems anticipated by the projections shown in the schedules.

END OF SECTION

CONSTRUCTION SCHEDULES

02/05/03

01310-3

This page left intentionally blank

SECTION 01400

GENERAL QUALITY CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

A. Definitions:

1. Specific quality control requirements for the work are indicated throughout the Contract Documents. In particular, quality control provisions for manufactured products are specified in individual work sections and in other related sections of Division 1; and are not repeated in this section. The requirements of this section are primarily related to the performance of the work beyond the furnishing of manufactured products. The term "Quality Control" includes, but is not necessarily limited to, inspection and testing and associated requirements. This section does not specify or modify the Engineer's duties relating to Contract quality review and observation.

1.02 QUALITY ASSURANCE

A. General Workmanship Standards:

1. Except as more definitively specified in other sections of Division 1, comply with the recognized workmanship quality standards within the industry as applicable to each unit of work, including ANSI standards where applicable. It is a requirement that each category of tradesman or installer performing the work be pre-qualified, to the extent of being familiar with the applicable and recognized quality standards for his category of work, and being capable of workmanship complying with those standards.

1.03 SUBMITTALS

- A. Refer to Section 01300 for the general submittal requirements applicable to inspection and test reports, project photographs, damage surveys, quality control samples, maintenance agreements, guaranties, warranties, and similar documentation of quality compliances as required. Refer to the applicable individual work sections of Division 2 through 16 where applicable for specific certification and submittal requirements.
 1. Copies and Distribution: Where inspection and test reports and certifications are required by governing authorities, provide additional copies as required, and, where required, send copies directly from inspection or testing agency to governing authority.

GENERAL QUALITY CONTROL

01400-1

02/05/03

1.04 PRODUCT DELIVERY-STORAGE-HANDLING

- A. Materials, supplies, and equipment delivered to the site shall be inspected for damage, unloaded, and stored with a minimum of handling. Delivered items shall not be stored directly on the ground. Handle, store and protect materials and products, including fabricated components, by methods and means recommended by the manufacturer which will prevent damage, deterioration and losses (and resulting delays), thereby ensuring highest quality results as the performance of the work progresses. Control delivery schedules so as to minimize unnecessary long-term storage at the project site prior to installation. Periodically exercise equipment stored in accordance with the manufacturer's recommendations.
- B. The Engineer will refuse to accept, or sample for testing, materials, supplies, or equipment that have been improperly or unsuitably stored.
- C. Materials, supplies or equipment found defective or unfit for use shall not be incorporated in the work and shall immediately be removed from the construction or storage sites and replaced with new materials, supplies or equipment by the Contractor at no additional cost to the County.

1.05 RESPONSIBILITY FOR INSPECTIONS AND TESTS

- A. Contractor's Responsibility:
 - 1. It will be the Contractor's responsibility to employ and pay for the services of certified independent testing laboratories. In addition, the Contractor shall pay for all retests required due to failure to meet specifications.
 - a. The certified independent testing laboratories qualifications, test procedures, forms and quality control program description shall be submitted to the Engineer for review and approval.
 - 2. No failure of test agencies, whether engaged by the County or Contractor, to perform adequate inspections or tests or to properly analyze or report results, shall relieve the Contractor of responsibility for the fulfillment of the requirements of the Contract Documents. It is recognized that the required inspection and testing program is intended to assist the Contractor, County, Engineer and governing authorities in the nominal determination of probable compliances with requirements for certain crucial elements of work. The program is not intended to limit the Contractor in his regular quality control program, as needed for general assurance of compliances.
- B. Coordination with County's Agencies:
 - 1. Afford access and reasonable time in the construction sequence for County's

GENERAL QUALITY CONTROL

inspections and tests to be performed. Cooperate with agencies and provide incidental labor and services needed for the removal and delivery of test samples, and for inspections and taking measurements. Provide patching and restoration services where test samples have been removed.

C. Test Agency Responsibilities:

1. Test agencies, regardless of whether engaged by the County or Contractor, are not authorized to change or negate the requirements of the Contract Documents. Each agency shall coordinate its assigned work with the construction schedule as maintained by the Contractor, and shall perform its work promptly so as not to delay the work avoidably. Observations (by agencies) having a bearing on the work shall be reported to the Engineer, in the most expeditious way possible, and shall be recorded in writing by the agency. Agency personnel shall not interfere with or assume the duties of the Contractor.

PART 2 - PRODUCTS

2.01 EQUIPMENT AND MATERIALS

- A. All equipment and materials furnished under these specifications shall be new and unused.

2.02 PROJECT PHOTOGRAPHS

- A. The Contractor shall provide dated color VHS Video Tapes or dated photographs before, during and after construction begins, and will furnish the County with copies before, during and after construction. The videotapes and/or photographs must be submitted to and approved by the Engineer prior to starting construction work and after all survey stakeout is complete. If VHS videotapes are used, the Contractor shall submit data sheets, which indicate problem areas by, index number and brief description of condition.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Pre-Installation Conferences:

1. Well in advance of the installation of every major unit of work which requires coordination with other work, the Contractor shall meet at the project site with installers and representatives of manufacturers and fabricators who are involved in or affected by the unit of work, and in its coordination or integration with other work which has preceded or will

GENERAL QUALITY CONTROL

follow. The Contractor shall advise Engineer of scheduled meeting dates. At each meeting, review the progress of other work and preparations for the particular work under consideration including, but not limited to, the requirements of the Contract Documents, options, related change orders, purchases, deliveries, shop drawings, product data, quality control samples, possible conflicts, compatibility problems, time schedules, weather limitations, temporary facilities, space and access limitations, structural limitations, governing regulations, safety, inspection and testing requirements, required performance results, recording requirements, and protection. The Engineer will record the significant discussions of each conference, and the agreements and disagreements, along with the final plan of action. The Engineer will distribute record of meeting promptly to everyone concerned.

2. The Contractor shall not proceed with the work if the associated pre-installation conference cannot be concluded successfully. The Contractor shall instigate actions to resolve impediments to the performance of the work, and reconvene the conference at the earliest date feasible, but no longer than five (5) calendar days.

B. Installer's Inspection of Conditions:

1. The Contractor shall require the installer of each major unit of work to inspect the substrate to receive the work, and the conditions under which the work will be performed, and to report (in writing to the Contractor) unsatisfactory conditions. The Contractor shall not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

3.02 INSTALLATION QUALITY CONTROL

A. Manufacturer's Instructions:

1. Where installations include manufactured products, the Contractor shall comply with the manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in the Contract Documents.

- B. The Contractor shall inspect each item of materials or equipment immediately prior to installation, and reject damaged and defective items.

1. The Contractor shall provide attachment and connection devices and methods for securing work properly as it is installed; true to line and level, and within recognized industry tolerances if not otherwise indicated. Allow for expansions and building movements. Provide uniform joint widths in exposed work, organized for best possible visual effect. Refer questionable visual effect choices to Engineer for final decision.
2. The Contractor shall recheck measurements and dimensions of the work, as an integral step of starting each installation.
3. The Contractor shall install work during conditions of temperature, humidity, exposure, forecasted weather, and status of project completion, which will ensure the best possible results for each unit of work, in coordination with the entire work. Isolate each unit of work from noncompatible work, as required to prevent deterioration.
4. The Contractor shall coordinate enclosure (closing-in) of work with required inspections and tests, so as to avoid the necessity of uncovering work for that purpose.

C. Mounting Heights:

1. Except as otherwise indicated, the Contractor shall mount individual units of work at the industry-recognized standard mounting heights, for the applications indicated. Refer questionable mounting height choices to the Engineer for final decision.

- D. Adjust, clean, lubricate, restore marred finishes, and protect newly installed work, to ensure that it will remain without damage or deterioration during the remainder of the construction period.

END OF SECTION

This page left intentionally blank

SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. This section specifies the minimum requirements for temporary facilities, utilities to be brought to the site, and control required to enable the construction of the project to progress adequately. Providing adequate facilities at every stage of performing the work is the Contractor's sole responsibility and is not limited by these requirements.
- B. Except as otherwise indicated, the Contractor may, at his option, provide stand alone utility plants to provide needed services, in lieu of connected services from available public utilities, provided such stand-alone plant facilities comply with governing regulations. Prior to availability of temporary utility services, provide trucked-in/trucked-out containerized or unitized services for startup of construction operations at the site.
 - 1. Except as otherwise indicated, the costs of providing and using temporary utility service are included in the Contract Sum.
- C. The types of utility services required for general temporary use at the project site include the following (other specific services may be required for specific construction methods or operations):
 - 1. Water service (potable for certain uses).
 - 2. Portable sanitary facilities.
 - 3. Open drainage/run-off control facilities.
 - 4. Compressed air service.
 - 5. Electric power service.

1.02 QUALITY ASSURANCE

- A. Regulations:
 - 1. Comply with governing regulations and utility company regulations and
TEMPORARY FACILITIES AND CONTROLS

recommendations for the construction of temporary utility services; including (but not necessarily limited to) code compliances, permits, inspections, testing, and health and safety compliances.

2. Comply with pollution and environmental protection regulations for the use of water and other services, and for the discharge of wastes and storm water drainage from the project site.
3. Comply with "Environmental Impact" commitments made by the County in securing approval to proceed with the construction of the project.

B. Standards:

1. Comply with the "Manual of Accident Prevention in Construction" by AGC. Comply with NFPA Code 241 "Building Construction and Demolition Operations". The Contractor shall follow all applicable codes and ordinances that may govern.

1.03 STORAGE FACILITIES

A. Storage:

1. All materials, supplies and equipment intended for use in the work shall be suitably stored by the Contractor to prevent damage from exposure, admixture with foreign substances, or vandalism or other cause. The Engineer will refuse to accept, or sample for testing, materials, supplies or equipment that have been improperly stored, as determined by the Engineer. Materials found unfit for use shall not be incorporated in the work and shall immediately be removed from the construction or storage site. Delivered materials shall be stored in a manner as recommended by the manufacturer and acceptable to the Engineer before any payment will be made.

1.04 OPERATIONS AND TERMINATIONS

A. Inspections:

1. Prior to placing temporary utility services into use, inspect and test each service and arrange for governing authorities' required inspection and tests, and obtain required certifications and permits for use thereof.

B. Supervision:

TEMPORARY FACILITIES AND CONTROLS

1. Enforce strict discipline in the use of utility services. Limit availability to essential uses, so as to minimize wastes. Do not allow the installations to be abused or endangered.

C. Protection:

1. Prevent water-filled piping from freezing, by ground cover or insulation or by keeping drained, or by temporary heating. Maintain distinct markers for underground lines, and protect from damage during excavating operations.
2. The Contractor shall provide adequate signs, fences, barricades, flashing lights, flagmen and watchmen and take all necessary precautions for the protection of the work and the safety of the public. Traffic control warning signs and barricades shall be in strict accordance with the provisions of the State of Florida, Manual on Traffic Controls and Safe Practices for Street and Highway Construction, Maintenance and Utility Operations, as supplemented. All barricades and obstructions shall be protected at night by flashing signal lights, which shall be kept illuminated. Barricades shall be of substantial construction and suitable for night visibility. Suitable warning signs shall be so placed and illuminated at night as to show in advance where construction, barricades, or detours exist.
3. The Contractor shall at all times so conduct his work as to insure the least possible obstruction to traffic and inconvenience to the general public and the residents in the vicinity of the work, and to insure the protection of persons and property, in a manner satisfactory to the Engineer. No road or street shall be closed to the public, except with the permission of the Engineer and proper governmental authority. Fire hydrants on or adjacent to the work shall be kept accessible to fire-fighting equipment at all times, unless approved by the Engineer, the appropriate fire protection agency is notified. Temporary provisions shall be made by the Contractor to insure the use of sidewalks and the proper functioning of all gutters, sewer inlets, drainage ditches, and irrigation ditches.

D. Preservation:

1. Preserve from damage all property along the line of the work, or which is in the vicinity of or is in any way affected by the work, the removal or destruction of which is not called for by the plans. Wherever such property is damaged due to the activities of the Contractor, the Contractor at no cost to the County shall immediately restore it to its original condition.

TEMPORARY FACILITIES AND CONTROLS

- a. In case of failure on the part of the Contractor to restore such property, or make good such damage or injury, the County may, after 48-hours notice to the Contractor, proceed to repair, rebuild or otherwise restore such property as may be deemed necessary. The cost thereof will be deducted from any monies due or which may become due the Contractor under this Contract.
 - b. The Contractor shall be responsible for the protection of property in the vicinity of the project; and for the protection of his equipment, supplies, materials and work against any damage resulting from the elements such as flooding, rainstorm, wind damage, or other natural cause. The Contractor shall take all precautions against any such damage occurrence, and shall be responsible for damage resulting from it. The Contractor shall provide adequate drainage facilities, tie-downs, or other protection, throughout the Contract period, for the protection of his, the County's and other properties from such damage.
2. The Contractor will be responsible to contact FPL to secure their facilities during construction, if such facilities interfere with the progress of the overall project. The Contractor shall include such services in the price of the installation of pipe and facilities throughout the project.

E. Termination and Removal:

1. At the time the need for a temporary utility service or a substantial portion thereof has ended, or when its service has been replaced by use of permanent services, or not later than the time of substantial completion, promptly remove the installation unless requested by the Engineer to retain it for a longer period. Complete and restore work, which may have been delayed or affected by the installation and use of the temporary utility, including repairs to construction and grades and restoration and cleaning of exposed surfaces. Replace work damaged beyond acceptable restoration.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

TEMPORARY FACILITIES AND CONTROLS

02/05/03

01500-4

SECTION 01666

TESTING PIPING SYSTEM

PART 1 - GENERAL

1.01 GENERAL TESTING REQUIREMENTS

Prior to the final inspection, the Inspector will inspect each individual line and its appurtenances, either by use of lights or other means at his disposal to determine whether the completed lines are true to line and grade as laid out or as shown on the Drawings. The Inspector will notify the Engineer of any deviations from the approved drawings.

All pipelines or sections of pipelines that are found to be installed improperly with respect to the following: line or grade, joint deflection, broken or leaking sections of pipe, or are constructed in such a manner that they cannot be satisfactorily corrected otherwise, shall be removed and replaced at the Contractor's expense. All pipelines shall meet or exceed recommendations in the latest revision of the Sarasota County Uniform Water, Wastewater and Reuse System Code.

The Contractor shall provide all testing equipment needed to complete all necessary tests listed in this section and per all applicable state and local regulations.

1.02 TYPES OF TESTING

A. Hydrostatic

1. Water mains, including fire hydrants, reuse mains, force mains, and appurtenances shall be hydrostatically tested according to the latest revision of the Sarasota County Uniform Water, Wastewater and Reuse System Code.
2. Force mains and reuse mains shall be hydrostatically tested according to the latest revision of the Sarasota County Uniform Water, Wastewater and Reuse System Code.
3. Pump stations shall be given a running test of all equipment. During the test, all piping and seals shall be checked to insure no leaks occur. Controls shall be carefully checked and balanced for proper operation.

TESTING PIPING SYSTEM

02/05/03

01666-1

- B. Low-pressure Air: Gravity sewers and service laterals shall be low-pressure air tested according to the latest revision of Sarasota County Code.

1.03 DEFLECTION

For gravity sewers, deflection test shall be performed in accordance with the Code.

1.04 T.V. INSPECTION

T.V. inspection shall be performed in accordance with the Code.

1.05 LAMPING

Lamping shall be performed in accordance with the Code.

PART 2 - PRODUCTS

2.01 WATER, REUSE, AND FORCE MAIN

The Contractor shall furnish a new calibrated Type A oil filled gauge for measuring pressure used during hydrostatic test and shall remain the property of the County at conclusion of tests. The Engineer shall approve the gauge to be used with increments not more than 2 psi. The Contractor will supply water, pumps, backflow preventors, and all appurtenances required for pressurizing the line.

2.02 SEWER

- A. Air Test: Sewer plugs, air compressor, and air test controls shall be supplied by the Contractor and approved by Engineer.
- B. Deflection: Deflection tests shall be conducted with a ninety-five percent (95%) go/no go mandrel, supplied by an approved testing company.
- C. TV Testing: The Contractor shall supply all equipment to complete test or hire an approved testing company and will supply the County with one complete copy of all video tapes of testing.
- D. Lamping: The Contractor shall supply all ladders, lamps and personnel to complete test as directed by Engineer.
- E.. Contractor shall abide by OSHA requirement for Confined Space Entry.

TESTING PIPING SYSTEM

02/05/03

01666-2

The Contractor shall provide all equipment, personnel, approved permit forms, monitoring equipment to, but not to be limited to, perform manhole or vault entry for inspections.

PART 3 - EXECUTION

3.01 WATER, REUSE, AND FORCE MAINS

- A. Where practicable, pipelines shall be tested between line valves or plugs in lengths of not more than 1000 feet.
- B. Duration of test shall be not less than two (2) hours.
- C. Where leaks are evident on the surface where joints are covered, the joints shall be recaulked, repoured bolts tightened or relaid, and leakage minimized regardless of total leakage as shown by test.
- D. All pipe, fittings and other materials found to be defective under test shall be removed and replaced.
- E. Lines, which fail to meet test, shall be repaired and retested as necessary until test requirements are complied with.

3.02 SEWER

- A. It shall be the Contractor's responsibility to have the pipe cleaned. Prior to testing the pipe will be checked by the Resident County Inspector to see that it is clean, clear, and free of all debris and dirt.
- B. The completed sewer lines, including manholes, shall be inspected and tested for leakage. The tests shall be conducted by the Contractor under the direction of the Engineer. The Contractor shall furnish all work, materials, equipment and water required for making the tests as specified.
- C. Before testing, the Contractor shall rod out the section to be tested with whatever tools are required to remove from the line any and all dirt, debris and trash.
- D. The Resident County Inspector will then inspect the line from manhole to manhole by use of lights and TV testing (supplied by Contractor) to determine whether the completed line is true to line and grade as laid out or as shown on the drawings.

TESTING PIPING SYSTEM

02/05/03

01666-3

- E. All lines or sections of lines that are found to be laid improperly with respect to line and grade, that are found to contain broken or leaking sections of pipe, shall be removed and replaced at the Contractor's expense.
- F. Tests: The Engineer will determine which test or tests will be required for each section of sewer line.
1. The ex-filtration test will be made on each section of pipe between manholes after it has been laid and preferably prior to backfilling of joints and tests shall be conducted by plugging the lower end of the section of the sewer to be tested and filling the sewer to a point approximately five feet above the invert at the upper end, observing for leakage at all joints and measuring the amount of leakage for the required interval of time.
 2. The test for infiltration, will be made by plugging the open ends of all lines at the manhole so that measurements may be made at each section of the sewer line. This infiltration test will not be made until the sewer line is completed, and the Contractor will be required to correct all conditions that are conducive to excessive infiltration and may be required to relay such sections of the line that may not be corrected otherwise. All observed leaks shall be corrected even though infiltration is within allowable limits.
 3. The air test will be made after all house connections have been installed to property lines, plugged and backfilling has been completed and compacted.
 4. All tees and ends of sewer services shall be plugged with flexible joint plugs or caps securely fastened to withstand the internal tests pressures. Such plugs or caps shall be readily removable, and their removal shall provide a socket suitable for making a flexible jointed lateral connection or extension.
 5. Air shall be slowly supplied to the plugged pipe installation until the internal air pressure reaches 4.0 pounds per square inch greater than the average back pressure of any ground water that may submerge the pipe. At least two minutes shall be allowed for temperature stabilization.
- G. Deflection: Deflection tests to be conducted with a go/no go mandrel following the manufacturer's instructions and accomplished on a manhole-to-manhole basis, following complete flushing of the line. Deflection test failures will be cause for replacement or relaying of failed sections.

END OF SECTION

TESTING PIPING SYSTEM

02/05/03

01666-4

SECTION 01700
PROJECT CLOSEOUT

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. Closeout is defined to include the general requirements near the end of the Contract Time, in preparation for final acceptance, final payment, normal termination of the Contract, occupancy by the County and similar actions evidencing completion of the work.
- B. Specific requirements for individual units of work are specified in applicable sections of Division 2 through 16.

1.02 PREREQUISITES FOR SUBSTANTIAL COMPLETION

- A. Prior to requesting Engineer's inspection for certification of substantial completion, as required by the General Conditions (for either the entire work or portions thereof), Contractor shall complete the following and list known exceptions in request to the Engineer:
 - 1. Submit statement showing final accounting to the Contract Sum.
 - 2. Submit special guarantees, warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
 - 3. Obtain and submit occupancy permits, operating certificates, final inspection/test certificates, and similar releases enabling County's full and unrestricted use of the work and access to services and utilities.
 - 4. Submit final record drawings, maintenance manuals, final project photographs, damage or settlement survey, property survey, and similar final record information.
 - 5. Deliver tools, spare parts, extra stocks of materials, and similar physical items to County.
 - 6. Make final change-over of locks and transmit keys to County, and advise County's personnel of change-over in security provisions.
 - 7. Complete start-up testing of systems, and instruction of County's operating/maintenance personnel.

02/05/03

PROJECT CLOSEOUT

01700-1

8. Discontinue (or change over) and remove from the project site temporary facilities and services, along with construction tools and facilities, mock-ups, and similar elements.
9. Complete the final cleaning.
10. Touch-up and otherwise repair and restore marred exposed finishes.
11. Submit an executed Certificate of Substantial Completion.

1.03 PREREQUISITES FOR FINAL ACCEPTANCE

- A. Prior to requesting Engineer's final inspection for certification of final acceptance and final payment, as required by the General Conditions, Contractor shall complete the following and list known exceptions (if any) in request to the Engineer:
 1. Submit final payment request with final releases and supports not previously submitted and accepted, as requested by the Contract Documents.
 2. Submit updated final statement, accounting for additional changes to the Contract Sum.
 3. Submit certified copy of Engineer's final punch-list of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, endorsed and dated by the Engineer.
 4. Submit final meter readings for utilities, measured record of stored fuel, and similar data as of the time of substantial completion or when County took possession of and responsibility for corresponding elements of the work.
 5. Submit and Execute the "Final Certification" form to the Engineer.

1.04 RECORD DOCUMENT SUBMITTALS

- A. Specific requirements for record documents are indicated in individual sections of these specifications. The general requirements are indicated in General Conditions. The general submittal requirements are indicated in Section 01300. Do not use record documents for construction purposes; protect from deterioration and loss in a secure fire-resistive location; provide access to record documents for the Engineer's inspection during normal working hours.
- B. Record Drawings:
 1. The Contractor shall maintain a white-print set (blue-line or black-line) of

Contract Drawings and Shop Drawings in clean, undamaged condition, with mark-up of actual installations which vary substantially from the work as originally shown. The Contractor shall mark whichever drawings is most capable of showing the as-built condition fully and accurately; however, where shop drawings are used for mark-up, record a cross-reference at the corresponding location on the Contract Drawings. The Contractor shall mark with red erasable pencil and, where feasible, use other colors to distinguish between variations of separate categories of work. The Contractor shall mark-up new information which is recognized to be of importance to the County, but was for some reason not shown on either the Contract Drawings or Shop Drawings. The Contractor shall give particular attention to concealed work, which would be difficult to measure and record at a later date. The Contractor shall note related IFCA and change order numbers where applicable. The Contractor shall organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.

- a. Information to be shown for construction project shall be in accordance with Section 00500 Part 1.08 "Record Data".
2. The Contractor shall be held responsible for the accuracy of such data and shall bear any costs incurred in finding utilities as a result of incorrect data furnished by the Contractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 CLOSEOUT PROCEDURE

A. General Operating/Maintenance Instructions:

1. The Contractor shall arrange for each installer of work requiring continuing maintenance (by the County) or operation, to meet with the County's personnel, at the project site, for a time period required provide basic instruction needed for proper operation and maintenance of the entire work. The Contractor shall include instruction by manufacturer's representatives where installers are not expert in the required procedures. The Contractor shall review maintenance manuals, record documentation, tools, spare parts and materials, lubricants, fuels, identification system, control sequences, hazards, cleaning and similar procedures and facilities. For operational equipment, demonstrate start-up, shut-down emergency operations, noise and vibration adjustments, safety, economy/efficiency adjustments, and similar operations. The Contractor shall review maintenance and operations in relation to applicable guaranties, warranties, agreements to maintain, bonds,

PROJECT CLOSEOUT

02/05/03

and similar continuing commitments.

3.02 FINAL CLEANING

A. The Contractor shall provide final cleaning of the work, at the time indicated, consisting of cleaning each surface or unit of work to the normal "clean" condition expected for a first-class cleaning and maintenance program. Comply with manufacturers' instructions for cleaning operations. The following are examples, but not by way of limitation, of the cleaning levels required:

1. Remove labels which are not required as permanent labels.
2. Clean transparent materials, including mirrors and window/door glass, to a polished condition, removing substances which are noticeable as vision-obscuring materials.
3. Clean exposed exterior and interior hard-surfaced finishes, including metals, masonry, stone, concrete, painted surfaces, plastics, tile, wood, special coating, and similar surfaces, to a dirt-free condition, free of dust, stains, films and similar noticeable distracting substances. Except as otherwise indicated; avoid the disturbance of natural weathering of exterior surfaces. Restore reflective surfaces to original reflective condition.
4. Wipe surfaces of mechanical and electrical equipment clean, including elevator equipment and similar equipment, and remove excess lubrication and other substances.
5. Remove dirt and surface dust from limited-access spaces including roofs, plenums, shafts, trenches, equipment vaults, manholes and similar spaces.
6. Broom clean concrete floors in nonoccupied spaces.
7. Vacuum clean carpeted surfaces and similar soft surfaces.
8. Clean plumbing fixtures to a sanitary condition, free of stains including those resulting from water exposure.
9. Clean food service equipment to a condition of sanitation ready and acceptable for the intended food service use.
10. Clean light fixtures and lamps so as to function with full efficiency.
11. Clean project site, yard and grounds, including landscape and development areas, of litter and foreign substances. Sweep paved areas to a broom-clean condition; remove stains, petrochemical spills and other foreign deposits.

PROJECT CLOSEOUT

02/05/03

Rake grounds, which are neither planted nor paved, to a smooth, even-textured surface.

B. Time of Final Cleaning:

1. Following the Contractor's certification of "Substantial Completion", and immediately before the Engineer's "Final Acceptance" inspection.

C. Removal of Protection:

1. Except as otherwise indicated or requested by the Engineer, the Contractor shall remove temporary protection devices and facilities which were installed during the course of the work to protect previously completed work during the remainder of the construction period.

D. Compliances:

1. The Contractor shall comply with safety standards and governing regulations for cleaning operations. The Contractor shall not burn waste materials at the site, or bury debris or excess materials on the County's property, or discharge volatile or other harmful or dangerous materials into drainage systems; remove waste materials from the site and dispose of in a lawful manner.
2. Where extra materials of value remaining after completion of the associated work have become the County's property, the Contractor shall legally dispose or store at the site as directed by the County or Engineer.

END OF SECTION

This page left intentionally blank

SECTION 02110

SITE CLEARING

PART 1 -- GENERAL

1.01 DESCRIPTION OF WORK

- A. The extent of site clearing shall be limited to clearing those trees and brush necessary to provide access to the construction site. All trees which will not interfere with construction shall be protected from damage. Cost to protect trees, shrubs and etc. is incidental to the project cost. All Protection and Removal of trees shall be in accordance with County ordinances.
- B. Site clearing work includes, but is not limited to, the following:
 - 1. Protection of existing trees.
 - 2. Removal of trees and other vegetation.
 - 3. Muck.
 - 4. Asphalt.
 - 5. Curb and Gutter.
 - 6. Culvert Pipes.
 - 7. General Pipes.
 - 7. Other types of obstructions (direct or indirect) with the construction of the project. This does not limit to only conflicts shown on the plans.

1.02 JOB CONDITIONS

The Contractor shall:

- A. Protection of Existing Improvements:
 - 1. Provide protection necessary to prevent damage to existing improvements indicated to remain in place.
 - 2. Protect improvements on adjoining properties and on the County's property.
 - 3. Restore damaged improvements to their original condition, as acceptable to parties having jurisdiction.

02/05/03

SITE CLEARING

02110-1

B. Protection of Existing Trees and Vegetation:

1. Protect existing trees and other vegetation indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning and bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip lines, excess foot or vehicular traffic, or parking of vehicles within drip line.
2. Provide temporary guards to protect trees and vegetation to be left standing.
3. Water trees and other vegetation to remain within the limits of the Contract work as required to maintain their health during the course of construction operations.
4. Provide protection for roots over 2-inch diameter cut during construction operations. Coat the cut faces with an emulsified asphalt, or other acceptable coating, formulated for use on damaged plant tissues. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 SITE CLEARING

A. General:

1. The Contractor shall remove vegetation, improvements, or obstructions interfering with installation of new construction.
2. The Contractor shall carefully and cleanly cut roots and branches of trees indicated to be left standing, where such roots and branches obstruct new construction.

B. Removal of Improvements:

1. The Contractor shall remove above-grade and below-grade improvements necessary to permit construction, and other work as indicated.

3.02 DISPOSAL OF WASTE MATERIALS

A. Burning on County's Property:

1. Burning is not permitted on the County's property.

B. Removal from County's Property:

SITE CLEARING

02/05/03

02110-2

1. The Contractor shall remove waste materials and unsuitable and excess topsoil from the County's property and dispose of legally.

END OF SECTION

SITE CLEARING

02110-3

This page left intentionally blank

SECTION 02222

TRENCHING, BACKFILLING AND COMPACTING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The extent of excavation, backfilling and compacting as shown on the drawings.
- B. This section includes furnishing equipment, labor and materials, and performing all operations necessary and incidental to perform the required work.
- C. All work shall be in accordance with all local, state, and federal ordinances and regulations.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 EXCAVATION

- A. General: The Contractor shall perform excavation described of substance encountered to the dimensions and depths specified or shown on the drawings. Undercutting shall not be permitted, except when ordered by the Engineer in writing. Material suitable for backfill shall be stockpiled near the site. Rock or other material undesirable for backfill shall be spoiled outside the area in a neat manner, as directed by the Engineer. Where it is necessary to cut roots projecting into an excavation or where it is necessary to trim branches for equipment clearance, all severed root ends or cuts to branches over 2" diameter shall be treated with an asphalt base pruning paint. Backfill with earth over exposed roots as soon as possible.
- B. Rock: Where encountered in the trench bed, rock shall be excavated to a depth of 3 of the pipe diameter below the bottom of the pipe bell but in no case less than 6". All undercut trench excavation shall be backfilled with earth and tamped with materials as specified in the following paragraphs under unstable subgrade. All cost for rock removal is incidental to the project.
- C. Unstable Subgrade:
 - 1. In the event that unsuitable material is encountered at or below the excavation depth specified or shown on the drawings, the Engineer shall be notified in writing. Such material shall be removed and replaced with suitable material. Methods and materials used for replacement shall be one of the following as directed by the Engineer in writing.

- a. Suitable earth or sand, compacted in the trench and paid for under the
- TRENCHING, BACKFILLING AND COMPACTING

02/05/03

bid item noted "special pipe bedding" as approved by the Engineer in writing.

- b. Gravel or crushed limerock, compacted in the trench and paid for under the bid item noted "special pipe bedding" as approved by the Engineer in writing.
- c. Existing materials, stabilized after removal and then replaced and compacted in the trench at no additional cost to the County.

- 2. The Engineer shall determine the methods and materials to be used, based upon the condition of the excavation, the pipe structure to be supported, and the availability and character of stabilizing materials.

D. Trenches:

- 1. The Contractor shall keep pipe laying operation as close to the excavation operation as possible during the prosecution of the work. The Engineer reserves the right to stop the excavation at any time when, in his opinion, the excavation is opened too far in advance of the pipe laying.
- 2. Pipe trenches shall be excavated to a depth that will insure a minimum of 36", or as shown on the plans, of cover for all types of pipe, except service laterals. Trenches shall be only of sufficient width to provide a free working space on each side of the pipe. To prevent excess pressure on the pipe, the maximum width of trench at the top of the pipe and at the bottom of the trench shall not be greater than 2' more than the greatest exterior diameter of the pipe. If this maximum width is exceeded, it shall be the Contractor's responsibility to provide, at no additional cost to the County, such additional bedding or select backfill materials as the Engineer may require. The excavation below the spring line shall be made to conform as near as possible to the shape of the lower third of the pipe. To protect the pipelines from unusual stresses, all work shall be done in open trenches. Excavation shall be made for bells of all pipes and of sufficient depth to permit access to the joint for construction and inspections. In no case will the bells be used to support the body of the pipe.
- 3. In order to avoid existing utilities, at times it may be necessary for the pipe to be laid deeper than the minimum cover specified in the preceding paragraph. At such time the Contractor will not be allowed extra compensation for additional excavation involved.
- 4. In case excavation has been made deeper than necessary, a layer of concrete, fine gravel or other material satisfactory to the Engineer shall be placed, at no extra cost, to secure a firm foundation for the lower third of each pipe. Where possible, excavated material shall be placed so as not to interfere with public travel. Bridging shall be provided to afford necessary access to public

TRENCHING, BACKFILLING AND COMPACTING

02/05/03

or private premises. Bridging shall be considered as part of the excavation operation and shall be supplied at no additional cost to the County.

E. Structural: (For inlets, manholes, valve pits and similar structures)

1. Remove sufficient material to allow proper space for erecting and removing forms. The elevations of the bottoms of footings, if shown on the drawings, shall be considered as approximate only, and the Engineer may order, in writing, such changes in dimensions or elevations of footings as may be deemed necessary to secure a satisfactory foundation. Excavation for structures shall be sufficient to leave at least 12" in the clear between their outer surfaces and the embankment or timber that may be used to protect them. Backfill of earth under structures shall be filled with thoroughly compacted sand, gravel, or concrete at the expense of the Contractor.
2. After excavation for a structure is completed, the Contractor shall notify the Engineer to that effect. No concrete or reinforcing steel shall be placed until the Engineer has approved the depth of the excavation and the character of the foundation material.

F. Sheeting and Shoring:

1. The Contractor shall provide all trench and structural bracing, sheeting or shoring as necessary to construct and protect the excavation, existing utilities, structures and private property of all types and as required for the safety of the employees. Sheeting shall be removed or cut off by the Contractor during backfilling operations as directed by the Engineer. Removal of shoring for structures shall be done in such a manner as not to disturb or mar finished masonry or concrete surfaces. Sheeting and shoring plans shall be provided as required by local, state, and federal regulations and ordinances. Sheeting and shoring plans shall be signed and sealed by the Contractors Engineer who designed system.

3.02 DRAINAGE

- A. Grading shall be controlled in the vicinity of excavations so that the surface of the ground will be properly sloped to prevent water from running into trenches or other excavated areas. Any water, which accumulates in the excavations, shall be removed promptly by well point or by other means satisfactory to the Engineer in such a manner as to not create a nuisance to adjacent property or public thoroughfare. Trenches shall be kept dry while pipe is being laid. Bridging of dewatering pipe shall be provided where necessary. Pumps and engines for well point systems shall be operated with mufflers, and at a minimum noise level as described by the most current noise ordinance. The Contractor will not be allowed to discharge water into the County's storm drainage system without the written approval of the Engineer. Such approval will be subject to the condition that the storm sewer be returned to its original condition, and all environmental requirements

TRENCHING, BACKFILLING AND COMPACTING

02/05/03

02222-3

are met. The Contractor will not be allowed to discharge water into private property without consent to the Contractor from the property owner(s) or owner(s) association.

- B. The Contractor is responsible for following all environmental requirements. The Contractor shall be financially responsible for any nuisance created due to discharge of water from his drainage system.

3.03 DEWATERING

- A. All installations shall be within a dry area, unless otherwise approved by the Engineer. Dewatering system shall be utilized in accordance with good standard practice and must be efficient enough to lower the ground water level in advance of the excavation and maintain it continuously to keep the trench bottom and sides firm and dry. Sewer systems shall not be used as a drainage system for ground water.
- B. The Contractor shall have on site or available for immediate use at all times, dewatering equipment adequate to handle the ground water present. When well points are used, sufficient header pipe and points shall be provided to maintain a dry and workable excavation. All well points shall be installed with a shell or sand filter around the head of the point. If ground water is present, well points shall be installed prior to any installation, at no additional cost to the County.
- C. Water pumped or drained from the site shall be handled in accordance with local, state, and federal rules and regulations.
- D. Upon removal of well points, holes shall be filled with clean suitable material and compacted. No additional compensation shall be given for this task.

3.04 BACKFILL

- A. Trenches:
 - 1. Trenches shall be backfilled immediately after the pipe is laid unless other protection for the pipeline is provided. Clean earth, sand, crushed limerock or other material approved by the Engineer shall be used for backfill. Backfill material shall be selected, deposited and compacted (simultaneously on both sides of the pipe) so as to eliminate the possibility of lateral displacement of the pipe. Backfill material shall be solidly tamped around the pipes in layers to a level at least 1-foot above the top of the pipe. Each layer shall be compacted to a maximum thickness of 6-inches.
 - 2. In paved areas, the remainder of the backfill shall be deposited and then compacted by mechanical tampers. Mechanical tamping of lifts in unpaved areas shall be to a maximum thickness of 12-inches. In areas to be paved or repaved, the entire depth of backfill shall be deposited in lifts and compacted

TRENCHING, BACKFILLING AND COMPACTING

02/05/03

by hand or mechanical tampers to a maximum thickness of 6-inches. Compaction shall be carried out to achieve a density of at least 98% of the maximum density as determined by AASHTO, Method T-180. Density test shall be done every lift and shall include a test at the spring line of the pipeline.

3. In areas to be paved and unpaved areas, density tests for determination of the specified compaction shall be made by a testing laboratory and spaced a minimum of one in every 300 feet of trench cut per lift and shall include a test at the spring line of the pipe. It is the intent of this specification to secure a condition where no further settlement of trenches will occur. When backfilling and compaction is completed, the roadway base for pavement replacement may be placed immediately. It will be the responsibility of the Contractor to restore the surface to the original grade wherever settlement occurs.

B. Wet Trenches:

1. Backfill for the pipe bed in wet trenches shall be crushed, graded limerock, compacted in the trench. After the pipe is laid, a graded limerock backfill shall be placed and worked in around the haunches to a point 6-inches above the pipe. The width of the limerock material around the pipe shall not be less than the outside diameter of the pipe plus 6-inches on each side of the pipe. Material shall be carefully distributed along the pipe so as to provide full and uniform support under and around the pipe. Six inches above the top of the pipe and up to the water level, material from the excavation with no rock or earth exceeding 4-inches in any one dimension shall then be lifted to the trench and released at the water level. Material shall be uniformly distributed for the full width of the trench. Backfill and compaction above the water level in the trench shall be as specified above. All cost for graded limerock placed in wet trenches shall be included in the cost of excavation and backfill for the various sizes of pipe.

C. Structural:

1. To include, but not limited, manholes, vaults, wetwells, etc. After completion of foundation footings and walls and other construction below the elevation of the final grades, and prior to backfilling, forms shall be removed and the excavation shall be cleared of all trash and debris. Material for backfilling shall consist of the excavation, borrow sand or other approved materials, and shall be free of trash, lumber or other debris. Backfill shall be placed in horizontal layers not in excess of 9-inches in thickness, and have a moisture content such that a density may be obtained to prevent excessive settlement or shrinkage. Each layer shall be compacted by hand or approved machine tampers with extreme care being exerted not to damage pipe or structures. Backfill shall be placed and compacted evenly against the exposed surface to prevent undue stress on any surface. Density tests shall

TRENCHING, BACKFILLING AND COMPACTING

be taken as follows; within three (3) feet of centerline of the structure, every lift not to exceed twelve (12) inches and shall achieve at least 98% of the maximum density as determined by AASHTO, Method T-180.

3.05 RESTORATION OF SURFACE IMPROVEMENTS

- A. Roadways, including shoulders, alleys and driveways of shell, limerock, stabilized soil or gravel, grass plots, sod, shrubbery, ornamental trees, signs, fences, or other surface improvements on public or private property which have been damaged or removed in excavating, shall be restored to conditions equal to or better than conditions existing prior to beginning work. Restoration of shoulders shall consist of two (2) feet of sodding adjacent to roadway, remainder seeding and mulch or stabilizing with limerock as selected by the Engineer and as shown on the construction drawings. The cost of doing this work shall be included in the cost of the various applicable items.
- B. Materials for unpaved roadways, road shoulders, alleys, or driveways, shall be compacted to a minimum of 95% of the maximum density as determined by AASHTO, Method T-180. The cost of this work and furnishing new materials shall be included in the cost of the applicable items of work as no separate payment will be made, unless a separate bid item is provided. Density test shall be completed every lift (12") to finish grade. Also a test shall be done at the spring line of the pipe.

3.06 FINE GRADING

- A. Finished areas around structures shall be graded smooth and hand raked and shall meet the elevations and contours shown on the drawings. Lumber, earth clods, rocks and other undesirable materials shall be removed from the site.

3.07 DISPOSAL OF MATERIALS

- A. Such portions of the excavated materials as needed and as suitable, shall be used for backfilling and grading above the completed work to the elevations as shown on the drawings or as directed. Excavated material in excess of the quantity required for this purpose shall be disposed of by the Contractor in accordance with local, state, and federal laws by the Contractor in a legal manner at no additional cost to the County. The Contractor shall leave the earth over the trenches or other excavations in a neat and uniform condition acceptable to the County.

3.08 ROADWAY REPLACEMENT

- A. Asphalt pavement shall be removed by saw cutting on a straight line with edges as vertical as possible. Concrete pavement or asphalt surfaced concrete shall be

TRENCHING, BACKFILLING AND COMPACTING

02/05/03

removed by cutting with a concrete saw in as straight a line and vertically as possible. Materials to replace State Highway paving shall conform to the specifications required by the Florida Department of Transportation. Other asphalt pavement replacement shall conform to the requirements of the construction drawings and any other applicable Sarasota County Public Works standards for the replacement of pavement.

- B. The Contractor shall have tests made by a certified independent testing laboratory, approved by the County, to verify roadway compaction results. Tests will be made, spaced a minimum of one in every 300 feet of trench cut. A minimum of one (1) test shall be taken per lift in situations less than 300' of pipe run. All density tests shall be taken at each twelve-inch (12") lift to finish grade and will include a test at the spring line of the pipe.
- C. Where asphalt or built-up asphalt pavement is replaced by concrete, the concrete shall have a minimum of 6-inches in thickness and be reinforced with 6 by 6 No. 10 gage welded wire fabric. Concrete for paving shall be 3,000 psi design strength. Where the pavement replacement is of like material, it shall be replaced in thickness equal to or better than that existing at the time of removal. (The same shall apply for concrete driveway replacement).
- D. Unless the base is sealed or other temporary paving is applied over areas to be repaved, pavement shall be replaced not later than 3-weeks after completion of backfill.

3.09 TESTS

- A. The Contractor shall furnish facilities for making all density tests and make such restorations as may be necessary due to test operations. All density tests on backfill or base replacement shall be made by a certified commercial testing laboratory employed by the Contractor and at such locations as may be recommended by the Engineer. If the densities as determined by the specified tests fall below the required minimums, the Contractor shall pay for all retests.
 - 1. Density shall be at least 98% of the maximum density as determined by AASHTO, method T-180 for road crossing and shoulders.
 - 2. Density shall be at least 95% of the maximum density as determined by AASHTO, method T-180, for all unpaved areas. Tests shall be taken every 300' of trench cut per lift.
 - 3. Two (2) sets of density tests shall be taken per road crossing.
 - 4. The Contractor shall submit two (2) copies of certified test results to the

TRENCHING, BACKFILLING AND COMPACTING

02/05/03

02222-7

County on a weekly basis.

5. Density test shall be taken within seven (7) days after the installation.

3.10 SIDEWALK, CURB AND GUTTER REMOVAL AND REPLACEMENT

- A. Sidewalk, curb and gutter removal and replacement required in the construction of this work shall be done by the Contractor. Reasonable care shall be exercised in removing sidewalk and curb and gutter, and the Contractor shall legally dispose of this material as directed by the Engineer on a weekly basis. Brick, concrete or built-up asphalt sidewalk replacement and curb and gutter replacement shall be replaced with like material in a manner and condition equal to or better than that existing at the time of removal.

Materials and methods of replacing State Highway sidewalks or curbs shall conform to the Florida Department of Transportation specifications.

END OF SECTION

EXCAVATION, BACKFILLING AND COMPACTING

02222-8

MAY 30 2006

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The Contractor shall provide all necessary tools, materials and equipment to successfully complete the installation of directionally drilled piping as specified herein and shown on the drawings. The Contractor shall be responsible for the final constructed product, and for furnishing the qualified labor and superintendence necessary for this method of construction.
- B. The Contractor shall furnish all items necessary to perform the horizontal directional drilling operation and construct the pipe to the lines and grade shown on the drawings.
- C. Boring must use techniques of creating or directing a borehole along a predetermined path to a specified target location. This must involve use of mechanical and hydraulic deviation equipment to change the boring course and must use instrumentation to monitor the location and orientation of the boring head assembly along a predetermined course.
- D. Drilling must be accomplished with fluid-assist mechanical cutting. Boring fluids shall be a mixture of bentonite and water or polymers and additives. Bentonite sealants and water will be used to lubricate and seal the mini-tunnel. It is mandatory that minimum pressures and flow rates be used during drilling operation as not to fracture the sub-grade material around and or above the bore.
- E. The mobile drilling system shall utilize small diameter fluid jets to fracture and mechanical cutters to cut and excavate the soil as the head advances forward.
- F. Steering shall be accomplished by the installation of an offset section of drill stem that causes the cutterhead to turn eccentrically about its centerline when it is rotating. When steering adjustments are required, the cutterhead offset section is rotated toward the desired direction of travel and the drill stem is advanced forward without rotation.
- G. The mobile drilling system must be capable of being launched from the surface at an inclined angle and drilling a 2" to 3" diameter pilot hole. The pilot hole will then be enlarged with reamers as required.
- H. **The Contractor shall properly contain all drilling fluids/mud to prevent any impacts to adjacent wetlands and the environment. All excess drilling fluids/mud shall be properly disposed offsite.**

SECTION 02300

DIRECTIONAL DRILLING

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The Contractor shall provide all necessary tools, materials and equipment to successfully complete the installation of directionally drilled piping as specified herein and shown on the drawings. The Contractor shall be responsible for the final constructed product, and for furnishing the qualified labor and supervision necessary for this method of construction.
- B. The Contractor shall furnish all items necessary to perform the horizontal directional drilling operation and construct the pipe to the lines and grade shown on the drawings.
- C. Boring must use techniques of creating or directing a borehole along a predetermined path to a specified target location. This must involve use of mechanical and hydraulic deviation equipment to change the boring course and must use instrumentation to monitor the location and orientation of the boring head assembly along a predetermined course.
- D. Drilling must be accomplished with fluid-assisted mechanical cutting. Boring fluids shall be a mixture of bentonite and water or polymers and additives. Bentonite sealants and water will be used to lubricate and seal the mini-tunnel. It is mandatory that minimum pressures and flow rates be used during drilling operation as not to fracture the sub-grade material around and or above the bore.
- E. The mobile drilling system shall utilize small diameter fluid jets to fracture and mechanical cutters to cut and excavate the soil as the head advances forward.
- F. Steering shall be accomplished by the installation of an offset section of drill stem that causes the cutterhead to turn eccentrically about its centerline when it is rotating. When steering adjustments are required, the cutterhead offset section is rotated toward the desired direction of travel and the drill stem is advanced forward without rotation.
- G. The mobile drilling system must be capable of being launched from the surface at an inclined angle and drilling a 2" to 3" diameter pilot hole. The pilot hole will then be enlarged with reamers as required.

1.02 REFERENCE STANDARDS

- A. American Association of State Highway and Transportation Officials (AASHTO).

DIRECTIONAL DRILLING

02300-1

02/05/03

- B. Occupational Safety and Health Administration (OSHA).

1.03 DEFINITIONS

- A. Contractor's Construction Drawings. Shall be defined as drawings by which the Contractor proposes to construct, operate, build, etc., the referenced item. The submission of these drawings shall be required for the sole purpose of providing the sufficient details to verify that the Contractor's work in progress is in accordance with the intent of the design.

1.04 SUBMITTALS

- A. The Engineer will base the review of submitted details and data on the requirements of the completed work, safety of the work in regards to the public, potential for damage to public or private utilities and other existing structures and facilities, and the potential for unnecessary delay in the execution of the work. Such review shall not be construed to relieve the Contractor in any way of his responsibilities under the contract. Contractor shall not commence work on any items requiring Contractor's construction drawings or other submittals until the drawings and submittals are reviewed and accepted by the Engineer.
- B. The Contractor shall:
1. Submit for review complete construction drawings and/or complete written description identifying details of the proposed method of construction and the sequence of operations to be performed during construction, as required by the method of tunnel excavation approved. The drawings and descriptions shall be sufficiently detailed to demonstrate to the Engineer whether the proposed materials and procedures will meet the requirements of this specification. Contractor shall submit arrangement drawings and technical specifications of the machine and trailing equipment (including any modifications), three-year experience record with this type of machine and a copy of the manufacturer's operation manual for the machine.
 2. Contractor's construction drawings shall be submitted on the following items.
 - a. Complete details of the equipment, methods and procedures to be used, including but not limited to primary lining installation, timing of installation in relation to the excavation plan and sequence, bulkheads, etc.
 - b. Grouting techniques, including equipment, pumping procedures, pressure grout types, mixtures and plug systems.
 - c. Method of controlling line and grade of excavation.

DIRECTIONAL DRILLING

02300-2

02/05/03

- d. Details of muck removal, including equipment type, number, and disposal location.
- e. Proposed contingency plans for critical phases and areas of directional drilling.
- C. Quality Control Methods. At least 10 days prior to the start of directional drilling, Contractor shall submit a description of his quality control methods he proposes to use in his operations to the Engineer. The submittal shall describe:
 - 1. Procedures for controlling and checking line and grade.
 - 2. Field forms for establishing and checking line and grade.
- D. Safety. Procedures including, but not limited to, monitoring for gases encountered shall be submitted.
- E. Hazardous chemical list as well as all MSDS and technical data sheets.

1.05 DESIGN CRITERIA

- A. Compatibility of Methods.
 - 1. The methods of excavation, lining, and groundwater control shall be compatible.

1.06 JOB CONDITIONS

- A. Safety Requirements
 - 1. Perform work in a manner to maximize safety and reduce exposure of men and equipment to hazardous and potentially hazardous conditions, in accordance with applicable safety standards.
 - 2. Whenever there is an emergency or stoppage of work which is likely to endanger the excavation or adjacent structures, operate a full work force for 24 hours a day, including weekends and holidays, without intermission until the emergency or hazardous conditions no longer jeopardize the stability and safety of the work.
- B. Air Quality.
 - 1. Conduct directional drilling operations by methods and with equipment, which will positively control dust, fumes, vapors, gases or other atmospheric impurities in accordance with applicable safety requirements.

DIRECTIONAL DRILLING

02/05/03

02300-3

1.07 PERMITS

- A. Obtain any and all other permits required for prosecution of the work.

PART 2 – PRODUCTS

2.01 GENERAL

- A. Refer to Section 02618 for HDPE pipe material.
- B. Contractor shall install #8 copper wire with directional drilled HDPE pipe for location purposes. Detection wire shall be securely attached to each end of the directionally drilled pipe and intermittently as needed.

PART 3 - EXECUTION

3.01 GENERAL

- A. The Contractor shall be responsible for his means and methods of directional drilling construction and shall ensure the safety of the work, the Contractor=s employees, the public, and adjacent property, whether public or private.
- B. Contractor should anticipate that portions of the drilled excavation will be below the groundwater table.
- C. Comply with all local, state and federal laws, rules and regulations at all times to prevent pollution of the air, ground and water.

3.02 EQUIPMENT

- A. Diesel, electrical, or air-powered equipment will be acceptable, subject to applicable federal and state regulations.
- B. Any method or equipment that the Contractor can demonstrate will produce the specified results will be considered.
- C. Contractor shall employ equipment that will be capable of handling the various anticipated ground conditions. In addition, the equipment shall:
 - 1. Be capable of minimizing loss of ground ahead of and around the machine and providing satisfactory support of the excavated face at all times.
 - 2. Provide a system to indicate whether the amount of earth material removed is equivalent to that displaced by the advance of the machine such that the advance rate may be controlled accordingly.

DIRECTIONAL DRILLING

02/05/03

02300-4

- D. Provide adequate secondary containment for any and all portable storage tanks.

3.03 DIRECTIONAL DRILLING DATA

- A. Daily logs of construction events and observations shall be submitted on at least the following:
 - 1. Location and elevation of significant soil strata boundaries and brief soil descriptions.
 - 2. Jacking pressures and torsional forces, if applicable.

3.04 CONTROL OF THE DRILL LINE AND GRADE

- A. Construction Control.
 - 1. The Contractor shall establish and be fully responsible for the accuracy of his own control for the construction of the entire project, including structures, drill line and grade.
 - 2. The Contractor's control points shall be established sufficiently far from the drilling operation not to be affected by construction operations.
 - 3. The Contractor shall maintain daily records of alignment and grade and shall submit three copies of these records to the Engineer. However, the Contractor remains fully responsible for the accuracy of his work and the correction of it, as required.
 - 4. The Contractor shall check his control for the bore alignment against an above ground undisturbed reference at least once for each rod length of bore constructed, or more often as needed or directed by the Engineer. Contractor shall furnish a "Directional Bore Log" for each bore completed.

3.05 DISPOSAL OF EXCESS MATERIAL

- A. Where such effort is necessary, cost for groundwater control during the course of the drilling work shall be included in the unit contract price for the work.
- B. Dewatering required during the course of the project to lower water table, to remove standing water, surface drainage seepage, or to protect ongoing work against rising waters or floods shall be considered incidental to the work being performed.
- C. Contractor shall remove all puddled bentonite (drillers mud) and dispose of off-site in a legal manner, at no additional cost to the County.

END OF SECTION

DIRECTIONAL DRILLING

02300-5

02/05/03

This page left intentionally blank

SECTION 02400

LAWN RESTORATION

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The work in this section consists of furnishing all labor, material and equipment to replace and maintain all areas disturbed during construction by establishing a stand of grass, within the areas called for by the furnishing and placing grass sod, or seeding, or seeding and mulching.

1.02 REFERENCE DOCUMENTS

- A. The materials used in this work shall conform to the requirements of Florida Department of Transportation Standard Specifications for Road and Bridge Construction as follows:
 - 1. Sod - Section 981-2
 - 2. Fertilizer - Section 982
 - 3. Water - Section 983

1.03 SUBMITTALS

- A. Submit certifications and identification labels for all sodding supplied as specified in Section 01300.

PART 2 - PRODUCTS

2.01 SOD

- A. Types: When replacing sod in areas that are already sodded, the sod shall be the same type as the existing sod.
- B. The sod shall be taken up in commercial-size rectangles, preferably 12-inch by 24-inch or larger, except where 6-inch strip sodding is called for.
- C. The sod shall be sufficiently thick to secure a dense stand of live grass. The sod shall be live, fresh and uninjured at the time of planting. It shall have a soil mat of sufficient thickness adhering firmly to the roots to withstand all necessary handling. It shall be reasonably free of weeds and other grasses. It shall be planted as soon as possible after being dug and shall be shaded and kept moist from the time it is dug until it is planted.

LAWN RESTORATION

02/05/03

02400-1

- D. Sod should be handled in a manner to prevent breaking or other damage. Sod shall not be handled by pitch forks or by dumping from trucks or other vehicles. Care shall be taken at all times to retain the native soil on the roots of each sod roll during stripping and handling. Sod that has been damaged by handling during delivery, storage or installation will be rejected.

2.02 FERTILIZER

- A. Chemical fertilizer shall be supplied in suitable bags with the net weight certification of the shipment. Fertilizer shall be 12-8-8 and comply with Section 982 of the FDOT Standard Specification for Road and Bridge Construction.
- B. The numerical designations for fertilizer indicate the minimum percentages (respectively) of (1) total nitrogen, (2) available phosphoric acid and (3) water soluble potash, contained in the fertilizer.
- C. The chemical designation of the fertilizer shall be 12-8-8, with at least 50 percent of the nitrogen from a nonwater-soluble organic source. The nitrogen source may be a ureaformaldehyde source provided it is not derived from a waste product of the plastic industry.

2.03 EQUIPMENT

- A. The device for spreading fertilizer shall be capable of uniformly distributing the material at the specified rate.

2.04 NETTING

- A. Netting is fabricated of material similar to Geoscope Landscape Fabric or approved equal.

PART 3 - EXECUTION

3.01 SOD BED PREPARATION

- A. Areas to be sodded and/or seeded shall be cleared of all rough grass, weeds, and debris, and brought to an even grade.
- B. The soil shall then be thoroughly tilled to a minimum 8-inch depth.
- C. The areas shall then be brought to proper grade, free of sticks, stones, or other foreign matter over 1-inch in diameter or dimension. The surface shall conform to finish grade, less the thickness of sod, free of water-retaining depressions, the soil friable and of uniformly firm texture.

3.02 INSPECTION

LAWN RESTORATION

02/05/03

02400-2

- A. Verify that soil preparation and related preceding work has been completed.
- B. Do not start work until conditions are satisfactory.

3.03 SOD HANDLING AND INSTALLATION

- A. During delivery, prior to planting, and during the planting of sod areas, the sod panels shall at all times be protected from excessive drying and unnecessary exposure of the roots to the sun. All sod shall be stacked during construction and planting so as not to be damaged by sweating or excessive heat and moisture.
- B. After completion of soil conditioning as specified above, sod panels shall be laid tightly together so as to make a solid sodded lawn area. On mounds and other slopes, the long dimension of the sod shall be laid perpendicular to the slope. Immediately following sod laying the lawn areas shall be rolled with a lawn roller customarily used for such purposes, and then thoroughly watered.
- C. Sod shall be placed at all areas where sod existed prior to construction, on slopes of 3 horizontal on 1 vertical (3:1) or greater, in areas where erosion of soils will occur, along edge of roads, driveways and structures; and as directed by the Engineer. On areas where the sod may slide, due to height and slope, the Engineer may direct that the sod be pegged, with pegs driven through the sod blocks into firm earth, at suitable intervals.

3.04 SOD MAINTENANCE

- A. The sod shall produce a dense, well established growth. The Contractor shall be responsible for the repair, mowing (8" maximum height) and re-sodding of all eroded or bare spots until project acceptance. Repair to sodding shall be accomplished as in the original work.
- B. Sufficient watering shall be done by the Contractor to maintain adequate moisture for optimum development of the seeded and sodded areas. Sodded areas shall receive no less than 1.5 inches of water per week for at least 2 weeks. Thereafter, the Contractor shall apply water for a minimum of 60 days as needed until the sod takes root and starts to grow or until final acceptance, whichever is latest.

3.05 CLEANING

- A. Remove debris and excess materials from the project site.

END OF SECTION

LAWN RESTORATION

02/05/03

02400-3

This page left intentionally blank

SECTION 02530

GROUNDWATER CONTROL FOR OPEN CUT EXCAVATION

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. This section provides for furnishing all labor, materials, equipment, power and incidentals for performing all operations necessary to dewater, depressurize, drain and maintain excavations as described herein and as necessary for installation of reuse pipeline and appurtenances. Included are installing, maintaining, operating and removing dewatering systems and other approved devices for the control of surface and groundwater during the construction of open cut excavations, directional drilling, reuse pipelines and appurtenances, and protecting work against rising waters and repair of any resulting damage.

1.02 CONTRACTOR'S RESPONSIBILITY

- A. It is the sole responsibility of the Contractor to identify groundwater conditions and to provide any and all labor, material, equipment, techniques and methods to lower, control and handle the groundwater as necessary for his construction methods and to monitor the effectiveness of this installed system and its effect on adjacent facilities.
- B. The Contractor shall operate, maintain and modify the system(s) as required to conform to these Specifications. Upon completion of the Construction, Contractor shall remove the system(s). The development, drilling and abandonment of all wells used in the dewatering system shall comply with regulations of the Florida Department of Environmental Protection and the governing Water Management District.
- C. The Contractor shall assume sole responsibility for dewatering systems and for all loss or damage resulting from partial or complete failure of protective measures and any settlement or resultant damage caused by the dewatering operation.

1.03 PLANS AND OTHER DATA TO BE SUBMITTED

- A. Prior to commencement of work, submit complete drawings, details and layouts showing the proposed dewatering plans in accordance with Section 01300. The submittals shall be sufficiently detailed (i.e., general arrangements, procedures to be used, etc.) to allow the Engineer to evaluate the proposed dewatering systems. Include the following, as required by the Contractor's proposed operation:

1. Names of equipment suppliers.

2. Names of installation subcontractors.
3. Plan for dewatering at access shafts and control of surface drainage.
4. Plan for dewatering for cut-and-cover excavations, or otherwise controlling groundwater.
5. Eductor system layout and details.
6. Deep well locations and details.
7. Well point system layout and details.
8. Installation reports for eductors, deep wells and well points.
9. Water level readings from piezometers or observation wells, and method of maintenance.
10. As part of his request for approval of a dewatering system, the Contractor shall demonstrate the adequacy of the proposed system and well point filler sand by means of a test installation.

PART 2 - PRODUCTS

- A. Select equipment including but not limited to pumps, eductors, well points and piping and other material desired.

PART 3 - EXECUTION

3.01 DEWATERING EXCAVATIONS

- A. Furnish, install, operate and maintain all necessary equipment for dewatering the various parts of the Work and for maintaining free of water the excavations and such other parts of the Work as required for Construction operations. Dewatering system should provide for continuous operation including nights, weekends, holidays, etc. Appropriate backup shall be provided if electrical power is primary energy source for dewatering system. Well point pumps that run 24 hours shall be baffled and muffled to reduce noise.
- B. Continue dewatering in all required areas, until the involved work is completed, including the placing and compaction of backfill materials in dry conditions.
- C. Provide a uniform diameter for each pipe drain run constructed for dewatering. Remove the pipe drain when it has served its purpose. If removal of the pipe is

GROUNDWATER CONTROL FOR OPEN CUT EXCAVATION

02/05/03

02530-2

APR 27 2006

Southwest District

impractical, provide grout connections at 50-foot intervals, and fill the pipe with clay grout or cement and sand grout when the pipe has served its purpose.

3.02 DEWATERING TRENCH

- A. No pipeline shall be laid in a trench in the presence of water. All water shall be removed from the trench sufficiently ahead of the pipeline placing operation. The Engineer shall have full and final authority to require dewatering of the trench to ensure a dry, firm bed on which to place the pipeline. As a minimum, water levels shall be maintained at least 6" below the bottom of the trench. Trench shall continue to be dewatered until trench backfilling operations have been completed.
- B. Removal of water may be accomplished by pumping or pumping in connection with well point installation as the particular situation may warrant.
- C. If the soils encountered at the trench grade are suitable for the passage of water, without destroying the sides or utility foundation of the trench, sumps may be provided at intervals at the side of the main trench excavation. Pumps shall be used to lower the water level by taking their suction from said sumps.

3.03 REQUIREMENTS FOR EDUCTOR, WELL POINTS OR DEEP WELLS

- A. Eductor, well points or deep wells, where used, must be furnished, installed and operated by a reputable contractor regularly engaged in this business, and approved.
- B. Submit the design criteria of the dewatering system and a certification that the system was designed according to that criteria.
- C. Install sufficient piezometers or observation wells to show that all trench excavation in sandy material is predrained prior to excavation. Install piezometers or observation wells not less than 1 week in advance of beginning of nearest excavation.
- D. Dewatering may be omitted for portions of underdrains or other trenches, only where auger borings and piezometers or observation wells show that the soil is predrained by an exterior system.
- E. Contractor shall backfill, with proper compaction, or grout all well point penetrations inside or outside the excavation area.

3.04 MAINTENANCE AND OBSERVATION

- A. Maintenance and observation of piezometers or observation wells is the responsibility of the Contractor and shall consist of keeping them in good

GROUNDWATER CONTROL FOR OPEN CUT EXCAVATION

02/05/03

condition and observing and recording the elevation of the water level daily, as long as the dewatering system is in operation, and weekly thereafter until the work is completed or the piezometers or wells are removed.

- B. Submit a record of the water level to the Engineer each day.
- C. Replace damaged and destroyed piezometers or observation wells, unless otherwise accepted by the Engineer, with new piezometers or wells within 48 hours, at no additional cost to the County.
- D. Cut off piezometers or observation wells in excavation areas, where exposed, as excavation proceeds, and continue to maintain and make observations as specified.
- E. Remove, backfill or grout piezometers or observation wells inside or outside the excavation area, as approved by the Engineer.

3.05 DURATION OF DRAINAGE

- A. In areas where concrete is to be placed, carry out the foundation drainage so that the required lowering of the water table will be effected prior to placing reinforcing steel. Keep foundation beds free from water to the same levels for 3 days after placing concrete.

3.06 PROTECTION OF STRUCTURES

- A. Provide adequate protection for all structures to avoid damage to concrete.
- B. Operate construction equipment over completed concrete slabs or structures only with approval. Rubber tire equipment heavier than 5 tons and crawlers heavier than 7 tons will require adequate load spreading by sand fill or other means.

3.07 DISCHARGE OF WATER

- A. Do not discharge pumped drainage water into the sanitary sewer system or inhibit pedestrian or vehicular traffic with the groundwater control system.
- B. Discharge pumped drainage water into the storm sewer system or drainage ditch by direct means (i.e., discharge hose to inlet, burying header, etc.). Contractor shall monitor the discharged water to determine that soil particles are not being removed.
- C. All discharge shall be in conformance with regulatory permits and if discharged into receiving waters, shall not exceed 29 N.T.U.'s above background.

3.08 REPAIR OF DAMAGE

GROUNDWATER CONTROL FOR OPEN CUT EXCAVATION

02/05/03

02530-4

- A. The Contractor shall assume full responsibility for all loss and damage due to flooding, rising water or seepage resulting from dewatering operations in any part of the work. Repair any damage to partially completed work from these or other causes, including the removal of slides, repair of foundation beds and performance of any other work necessitated by lack of adequate dewatering or drainage facilities.

END OF SECTION

This page left intentionally blank

SECTION 02610

FITTINGS

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The Contractor shall furnish and install fittings as shown on the Drawings or as Directed by the Engineer.

1.02 QUALITY ASSURANCE

- A. The Contractor shall install fittings to meet the latest revision of the Sarasota County Utilities Uniform Water, Wastewater and Reuse Systems Code.

1.03 SUBMITTALS

- A. Submit manufacturer's certificate of conformance.
- B. Shop Drawings: Submit manufacturer's drawings and data sheets for material to be supplied under this Section. Indicate sizes and types to be installed.
- C. Submit a pipe laying schedule.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Upon delivery and before unloading, the Contractor must inspect the fittings for any damage occurred in transit and note such damage on the delivery ticket.
- B. The means by which the fittings are unloaded is the decision and responsibility of the Contractor. The Contractor shall follow recommendations of the manufacturer.
- C. The Contractor shall follow manufacturer's recommendations for storage of fittings in order to minimize damage prior to installation.
- D. The Contractor shall adhere to the standard procedures given by the manufacturer for handling the fittings.

PART 2 - PRODUCTS

2.01 BENDS, REDUCERS AND TEES

- A. Non-Pressure Pipe: All bends, reducers and tees required shall conform to the same standards as the pipe.

FITTINGS

02/05/03

02610-1

B. Pressure Pipe: All bends, reducers and tees required shall conform to the following requirement:

1. Ductile Iron Fittings: Shall be used for all pressure pipe. They shall conform to the latest revision of AWWA C110 "Gray-Iron and Ductile-Iron Fittings, Three Inches Through Forty Eight Inches for Water and Other Liquids". They shall be mechanical joint ends with a pressure rating of 250 psi. Compact fittings, three inches through sixty-four inches (3"-64") will be acceptable. The compact fitting shall conform to the latest revision of AWWA C153 "Ductile Iron Compact Fitting, Three Inches Through Sixty-four Inches for Water and Other Liquids". All joints materials, including rubber gaskets, glands, tee-head bolts, and hex-head nuts, shall conform to the latest revisions of AWWA C111, "Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings".
2. Solid sleeves and adapter fittings shall be long body pattern and conform with the latest revision of AWWA C110 Gray-Iron and Ductile-Iron fittings, three inches (3") through forty-eight inches (48") for water and other liquids.

2.02 JOINT RESTRAINT SYSTEM

Restraint system for fittings shall be "MEGA LUG 1100 Series" Joint Restraint System as manufactured by EBAA Iron, Inc. or approved equal. The Engineer shall determine length and location of restraining. All fittings sixteen inches (16") in diameter and larger shall be restrained as shown on the plans.

2.03 SLEEVES

- A. Connection of existing utility mains to the new mains will be accomplished with a long pattern solid sleeve, as approved by the Engineer. Repair clamps will not be allowed.

2.04 LININGS

- A. For sewer and other piping the liners shall be in accordance with Section 02615, Ductile Iron Pipe/Fitting Liners.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Installation of ductile iron (DIP) fittings shall be in accordance with the latest revision of AWWA C600, "Installation of Gray and Ductile Cast Iron Water

FITTINGS

02/05/03

02610-2

Mains and Appurtenances" for ductile iron. For PVC fittings, installations shall be in accordance with manufacturer's recommendations.

- B. Joint restraint system shall be installed in accordance with manufacturer's instructions so as to prevent joint separation under operating conditions on all fittings sixteen inches
- C. Reverse thrust blocks (RTB) shall be installed as directed by the Engineer and shall be installed as indicated on the drawings and details. The Contractor shall install $\frac{3}{4}$ " stainless steel all-thread from the fitting to the thrust block.

END OF SECTION

FITTINGS

02610-3

This page left intentionally blank

SECTION 02615

DUCTILE IRON PIPE/FITTING LINERS

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The extent of the ductile iron pipe (DIP) and/or fittings, to be lined, are shown on the drawings.
- B. Reference to standard specifications shall be construed to mean the latest edition or revision.

1.02 SUBMITTALS

- A. One original certified test report and two copies of the tests made by the manufacturer or by a reliable commercial laboratory shall be submitted to the Engineer with each shipment of pipe. The certification shall include all tests results required by AWWA and ASTM.

PART 2 - PRODUCTS

2.01 AMERICAN POLYBOND*PLUS* LINING

- A. General:
 - 1. The lining shall be a composite lining utilizing a primer coating containing fusion bonded epoxy (FBE) and a surface coating containing fusion bonded polyethylene (FBP). All Polybond*Plus* lining application must be performed by the pipe manufacturer at the pipe manufacturer's facility.
- B. Lining Materials:
 - 1. Primer: The primer shall contain fusion bonded epoxy (FBE), which is applied in sufficient quantity to achieve a nominal thickness of 5 mils for the pipe or fitting. The FBE material used in the primer formulation should be capable of meeting the following requirements:

TEST PARAMETER	ASTM TEST METHOD	TYPICAL VALUE
Tensile Strength	D-2370	9,300 psi
Compressive Strength	D-695	11,600 psi
Ultimate Elongation	D-2370	6.9%
Impact (1/8"x3"x3" panel) 5/8" dia. Tup	G-14	160 in-lbs

DUCTILE IRON PIPE/FITTING LINERS

02/05/03

02615-1

2. **Surface Layer:** The surface layer shall be comprised of medium density modified fusion bonded polyethylene (FBP) meeting the requirements of ANSI/ASTM D1248 and compounded with an inert filler. The FBP shall be formulated to be ultra-violet (UV) resistant for a minimum of three (3) years exposure. The color of the FBP shall have a light reflectance value (LRV) of at least 40% to aid in the in-situ inspection of the pipeline with video equipment.

The fusion bonded polyethylene used in the surface coating material shall be capable of meeting the following requirements:

TEST PARAMETER	ASTM TEST METHOD	TYPICAL VALUE
Tensile Strength	D-638	1,650 psi
Ultimate Elongation	D-638	300 %
Taber Abrasion Resistance	D-4060	25.0 mg wt. Loss/1,000 cycles @ 1,000 gram load
Notched Izod Impact @ 23° C @ 60° C	D-256	8.0 ft.-lbs./in. (no break) 6.1 ft.-lbs./in. (no break)
Brittleness Temperature	D-746	-76° C

C. **Application:**

1. **Pre-Application Inspection:** Prior to blast cleaning, all interior surfaces of the pipe and fitting shall be inspected to verify that all interior surfaces are free of hydraulic fluid, grease, or other foreign substances.
2. **Surface Preparation:** Surface preparation shall consist of grit/shot blasting or sandblasting the ductile iron surface to a near-gray blast finish. This degree of cleanliness is comparable to a SSPC-SP10, "Near White Blast Cleaning" for steel with the exception that ductile iron attains a gray color when blast cleaned. (The color difference is due to the higher carbon content of ductile iron versus steel.) The blast cleaning operation shall remove 95% of all surface contaminants, including tightly adhered annealing scale. The anchor tooth pattern, resulting from the blasting operation, shall have a minimum height of 3.0 mils. All interior surfaces to be lined shall be blast cleaned to this standard.
3. **Application Requirements:** The pipe or fitting shall be heated in a regulated oven to produce a temperature that will insure proper adhesion between the primer and the pipe substrate. The lining shall be applied in one operation with the primer coat applied immediately prior to the application of the surface coat. The resultant composite lining shall be tightly bonded.
4. **Thickness Requirements:** Total thickness for the fusion bonded epoxy/fusion bonded polyethylene lining shall be 60 mils nominal with a 50 mil minimum in the barrel of the pipe.

DUCTILE IRON PIPE/FITTING LINERS

02/05/03

02615-2

5. Lining Coverage: The fusion bonded epoxy/fusion bonded polyethylene lining shall cover the interior surfaces of the pipe and fitting from the interior of the spigot end to a point sufficiently forward in the bell socket such that the Fastite ® gasket, in the assembled joint, seals over the end of the lining.
6. Joint Surface Coating: The joint surface coatings shall be comprised of a two component epoxy. The use of joint surface coatings containing coal tar is prohibited. Total thickness for the joint coating shall be 8 mils nominal.
 - a. The joint surface coating shall cover the spigot end across the end of the spigot bevel and extending over the outer surface of the spigot including the gasket sealing area. The joint surface coating shall also cover the socket from the face of the bell, through the gasket sealing area overlapping onto the edge of the FBE/FBP lining.

D. Testing:

1. Lining Holiday Test: At the manufacturer's facility, the lining shall be tested over 100% of the pipe barrel surface with a high voltage spark tester as recommended by ASTM Designation G-62 Method B of the latest revision. The minimum test voltage shall be as determined by Method B, as described in the ASTM Designation Section 11.2.3, which is the recommended voltage for all linings with possible areas thicker than 41 mils:

$$V = 1250 * T^{1/2} \quad \text{where } V = \text{voltage and,} \\ T = \text{thickness of lining in mils.}$$

Example: $V = 1250 * 60^{1/2}$ Minimum Voltage = 9,683 volts.

- a. If holidays are found in the lining by the above test at the manufacturer's plant, the holiday shall be repaired per the lining manufacturer's recommendation.
- b. The holiday detector shall be a commercially available detector available from holiday detection equipment manufacturers such as SPY, TINKER, AND RASOR, and ZORELCO.
2. Voltage Confirmation Test: To confirm that the voltage is sufficient to detect holidays, the following voltage confirmation test should be performed for each shift or change in detector operator. The holiday detector should be set to the calculated minimum voltage as calculated (V). A known holiday should be made in the lining of randomly selected pipe using a small sharp pin. The operator should demonstrate that the holiday can be consistently and satisfactorily located at this voltage setting and detector wand speed. If the holiday is not detected at the calculated voltage, then the voltage should be

DUCTILE IRON PIPE/FITTING LINERS

slowly increased until the known holiday is consistently detected by the operator. This voltage should then become the minimum voltage at which all pipe linings shall be tested.

- a. The detector's voltage (and voltage meter) shall be tested once each day by a separate voltmeter and the results certified by the pipe manufacturer, to confirm the accuracy of the detector's voltage meter.

E. Field Cutting:

Where pipes are cut in the field, it will be necessary to repair the cut end as per the manufacturer's written procedure. The repair shall be inspected by the Engineer's Representative for compliance to the manufacturer's recommendation.

F. Site Delivery:

The Engineer's Representative shall be notified prior to delivery to the site of any and all pipe and/or fittings. During the delivery inspection, the representative shall inspect the liner for damage to include shipment, loading and unloading damage. Any pipe that is noted as damaged shall be removed from the site and replaced by the manufacturer. The delay caused by such action shall be borne by the Contractor.

2.02 PROTECTO 401 CERAMIC EPOXY LINING

A. General:

1. All ductile pipe and/or fittings shall be delivered to the application facility without asphalt, cement lining, or any other lining on the interior surface.

B. Lining Materials:

1. The standard of quality is Protecto 401 Ceramic Epoxy. The material shall be an amine cured novalac epoxy containing at least 20% by volume of ceramic quartz pigment.

C. Application:

1. Applicator: The lining shall be applied by a competent firm with a successful history of applying linings to the interior of ductile iron pipe and/or fittings. The applicator shall submit a certification from the pipe manufacturer certifying that they in fact qualified to apply the Protecto 401.
2. Surface Preparation: Prior to abrasive blasting, the entire area to receive the protective compound shall be inspected for oil, grease, etc. Any area where oil, grease, or any substance which can be removed by solvent is present shall

DUCTILE IRON PIPE/FITTING LINERS

be solvent cleaned using guidelines outlined in DIPRA-1 Solvent Cleaning. After the surface has been made free of grease, oil or other substances, all areas to receive the protective compounds shall be abrasive blasted using compressed air nozzles with sand or grit abrasive media. The entire surface to be lined shall be struck with the blast media so that all rust, loose oxides, etc., are removed from the surface. Only slight stains and tightly adhering oxide may be left on the surface. Any area where rust reappears before lining must be reblasted.

3. Linings: After the surface preparation and within eight (8) hours of surface preparation, the interior of the pipe shall receive 40 mils nominal dry film thickness of Protecto 401. No lining shall take place when the substrate or ambient temperature is below 40 degrees Fahrenheit. The surface also must be dry and dust free. If flange pipe or fittings are included in the project the lining shall not be used on the face of the flange.
4. Coating of Bell Sockets and Spigot Ends: Due to the tolerances involved, the gasket area and spigot end up to six-inches (6") back from the end of the spigot end must be coated with 6 mils nominal, 10 mils maximum Protecto Joint Compound. The Joint Compound shall be applied by brush to ensure coverage. Care should be taken that the Joint Compound is smooth without excess buildup in the gasket seat or on the spigot ends. Coating of the gasket seat and spigot ends shall be done after the application of the lining.
5. Number of Coats: The number of coats of lining material applied shall be as recommended by the lining manufacturer. However, in no case shall this material be applied above the dry thickness per coat recommended by the lining manufacturer in printed literature. The maximum or minimum time between coats shall be that time recommended by the lining material manufacturer. No material shall be used for lining, which is not indefinitely recoatable with itself without roughening of the surface.
6. Touch-Up and Repair: Protecto Joint Compound shall be used for touch-up or repair in accordance with manufacturer's recommendation. The repair shall be inspected by the Engineer's Representative for compliance to the manufacturer's recommendation.

D. Inspection and Certification:

1. Inspection:
 - a. All ductile iron pipe and fitting liners shall be checked for thickness using a magnetic film thickness gauge. The thickness testing shall be done using the method outlined in SSPC-PA-2 Film Thickness Rating.

DUCTILE IRON PIPE/FITTING LINERS

02/05/03

02615-5

- b. The interior lining of all pipe and fittings shall be tested for pinholes with a nondestructive 2,500 volt test. Any defects found shall be repaired prior to shipment in accordance to the manufacture's recommendation.
 - c. Each pipe joint and fitting shall be marked with the date of application of the lining system along with its numerical sequence of application on that date and records maintained by the applicator of his work.
 - d. All fittings with Protecto 401 shall be shrink wrapped prior to shipment from the applicator's facility. This should prevent shipment damage.
2. Certification: The pipe or fitting manufacturer must supply a certification attesting to the fact that the applicator met the requirements of this specification, and that the material used was as specified.

E. Handling:

1. Protecto 401 lined pipe and fittings must be handled only from the outside of the pipe and fittings. No forks, chains, straps, hooks, etc. shall be placed inside the pipe and fittings for lifting, positioning, or laying.

F. Site Delivery:

1. The Engineer's Representative shall be notified prior to delivery to the site of any and all pipe and/or fittings. During the delivery inspection, the representative shall inspect the liner for damage to include shipment, loading and unloading damage. Any pipe that is noted as damaged shall be removed from the site and replaced by the manufacturer. The delay caused by such action shall be borne by the Contractor.

PART 3 - EXECUTION (NOT USED)

END OF SECTION

DUCTILE IRON PIPE/FITTING LINERS

02/05/03

02615-6

SECTION 02616

POLYVINYL CHLORIDE (PVC) PIPE

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The extent of PVC pipe is shown on the drawings.
- B. Reference to standard specifications herein shall be construed as to be in reference to the latest revision or edition.

1.02 SUBMITTALS

- A. One original certified test report and two copies of all required test reports should be submitted to the Engineer with each shipment of pipe. Certification shall include all test results required by AWWA. Also the Contractor shall include the following data:
 - 1. Quick Burst Test, ASTM D1599.
 - 2. Drop Impact Test, ASTM D2444.

1.03 DELIVERY AND STORAGE

- A. Upon delivery and before unloading, the Contractor must inspect the pipe for any damage occurred in transit and note such damage on the delivery ticket.
- B. In storing pipe, units shall be protected by dunnage in the same way they were protected while loaded on the truck. Pipe shall be stored flat to protect against bending. If pipe is to be stored outside longer than 7-days the pipe shall be covered with canvas or other opaque material to protect it from prolonged exposure to the sun.

PART 2 - PRODUCTS

2.01 PVC PIPE (4-INCHES AND LARGER)

- A. USES OF PIPE
 - 1. WATER: Unless otherwise shown on the plans, PVC water pipe four inches (4") through twelve inches (12") shall be DR-18, Class 150 and meet the requirements of AWWA C900 for PVC pipe in ductile

POLYVINYL CHLORIDE (PVC) PIPE

iron pipe equivalent O.D., having elastomeric gasket bell ends and elastomeric seals. Blue in color for water. PVC water pipe fourteen inches (14") and greater for utility mains shall conform to the requirements of AWWA standard C905, DR-18, with working pressure rating of 235 psig.

2. SEWER: Force main pipe from four inches (4") up to twelve inches (12") shall be DR-25, Class 100 and meet the requirements of AWWA C900 for PVC pipe in ductile iron pipe equivalent O.D. Pipe shall be furnished in standard 20' lengths. Gravity sewer pipe shall be SDR-26, D-3034 ASTM. Green in color for sewer pipe. PVC sewer force main pipe fourteen inches (14") and greater shall conform to the requirements of AWWA standard C905, DR-18, with a working pressure rating of 235 psig.
3. REUSE: Unless otherwise shown on the plans, PVC reuse pipe four inches (4") through twelve inches (12") shall be DR-18, Class 150 and meet the requirements of AWWA C900 for PVC pipe in ductile iron pipe equivalent O.D., having elastomeric gasket bell ends and elastomeric seals. Purple in color for reuse water. PVC pipe fourteen inches (14") and greater shall conform to the requirements of AWWA standard C905, DR-18, with a working pressure rating of 235 psig.
4. GENERAL: PVC pipe diameters of four inches (4") to twelve inches (12") shall conform to the requirements of AWWA standard C900, DR-14, with a working pressure rating of 200 psig as shown on the drawings and shall be color coded to meet County's standards.

B. The joints for PVC pipe shall be rubber ring type consisting of integral, thickened, solid wall bells which maintain the same standard dimension ratio as the pipe barrel. Joint lubrication shall be as furnished by the manufacturer of the pipe and joints made in accordance with the manufacturer's instructions and recommendations.

C. Solid long pattern sleeves or adapter fittings shall be furnished and installed where plastic pipe is connected to pipes or fittings of other materials. When pipe material changes from one type to another, long pattern solid repair sleeves shall be used to transition.

2.02 PVC PIPE (SMALLER THAN 4-INCHES)

- A. Unless otherwise specified, all PVC pipes smaller than four-inch (4") nominal diameter shall be Schedule 80 PVC in accordance with ASTM D1785. Schedule 80 pipe shall have either solvent welded or threaded joints. PVC pressure pipe shall bear the approved seal of the National Sanitary

POLYVINYL CHLORIDE (PVC) PIPE

Foundation (NSF). PVC pipe that is exposed to sunlight shall be manufactured with additives to provide resistance to ultraviolet deterioration.

- B. **FITTINGS;** Socket type, solvent welded fittings for schedule 80 PVC pipe shall be in conformance with ASTM D2467. Threaded type fittings for Schedule 80 PVC pipe shall be in conformance with ASTM D2464. All solvent welded or threaded joints shall be watertight.
- C. **FLANGES;** Flanges for Schedule 80 PVC pipe shall be rated for a 150 psi working pressure with ANSI B16.1 dimensions and bolting pattern. Flanges shall be connected to PVC piping with either solvent welded or threaded joints in accordance with ASTM D2467 or ASTM 2464, respectively. Gasket shall be neoprene; full faced type with a minimum thickness of 1/8-inch. Nuts and bolts shall be hexagonal with machine threads, manufactured of Type 316 stainless steel in accordance with ASTM A320, Class 2. Type 316 stainless steel flat washer shall be used against PVC flanges.
- D. **SOLVENT CEMENT:** PVC solvent cement shall be in compliance with ASTM D2564 and in accordance with the pipe manufacturer's recommendations.
- E. **THREAD LUBRICANT:** Lubricant for Schedule 80 threaded joints shall be Teflon tape only.

2.03 POLYETHYLENE PIPE

A. Service Pipe and Fittings:

- 1. Plastic pipe for service pipe shall conform to AWWA C-901 and ASTM D-2737 and shall be 200 psi pipe, SDR PR 9 for copper tube size.
- 2. Polyethylene extrusion compound from which the polyethylene pipe is extruded shall comply with applicable requirements for PE-3408 ultra-high molecular weight polyethylene plastic material. Material shall be as described in ASTM D-1248 and shall comply with the following:
 - a. Be of virgin quality approved for potable water service by the National Sanitation Foundation.
 - b. Pipe resin shall have a minimum inherent viscosity of 2.5 when tested according to ASTM D-1601.
 - c. Exceed 1,000 hours on ESC as determined by ASTM D-1693.

POLYVINYL CHLORIDE (PVC) PIPE

- d. Have a specific gravity of between 0.950 and 0.955.
 - e. Contain a minimum of two percent (2%) and a maximum of three percent (3%) of carbon black and shall produce a finished product that is uniformly black.
3. The polyethylene pipe shall be rated for use with water at 73.4 degrees Fahrenheit at a hydrostatic design stress of 630 psi and a maximum working pressure of 160 psi.
 4. The Standard Dimension Ratio (SDR) shall be nine (9) for copper tube size. The average inside diameters, minimum wall thickness for respective tolerances for any cross section shall be as hereinafter specified when measured in accordance with ASTM D-2122. Copper Tube Size: SDR 9 dimensions and tolerances shall be as shown in AWWA C-901, as follows:

<u>Nom. Pipe Size In.</u>	<u>Ave. Outside Diameter In.</u>	<u>Minimum Wall In.</u>	<u>Wall Tolerance In.</u>
1	1.125 +/- .005	0.125	+ 0.012
1-1/2	1.625 +/- .006	0.181	+ 0.018
2	2.125 +/- .006	0.236	+ 0.024

5. The minimum burst pressure at 73.4 degrees Fahrenheit determined in accordance with ASTM D-1599, latest revision, shall be 630 psi. The time of testing of each specimen shall be between 60 and 70 seconds.
6. The pipe shall not fail, balloon, burst or weep as defined in ASTM D-1598 when tested in accordance with the sustained pressure test method of ASTM D-2239 and ASTM D-2737 but under the test conditions hereinafter tabulated.

<u>Temperature</u>	<u>Time</u>	<u>Pressure</u>
73.4 Degrees F	1000 hrs	350 psi
150 Degrees F	1000 hrs	200 psi
190 Degrees F	300 hrs	125 psi

7. The polyethylene pipe shall not show any loss of pressure in the six (6) specimen tested for three (3) hours in accordance with the requirements of ASTM D-2239 and ASTM D-2737 using the test pressure of 330 psi at 73.4 degrees Fahrenheit. The polyethylene pipe or tubing shall be homogenous throughout and free of visible cracks, holes, foreign inclusions or other injurious defects. It shall be uniform in color, opacity, density and other physical properties.

POLYVINYL CHLORIDE (PVC) PIPE

8. Marking on the pipe or tubing shall include at intervals of not more than five feet (5') the nominal pipe or tubing size, the type of plastic material; i.e., PE 3408, the standard thermoplastic pipe dimension ratio or the pressure rating in psi for water at 73.4 degrees Fahrenheit (200 psi), the ASTM designation with which the pipe complies, and manufacturer's name or trade mark and code. It shall also include the seal of approval (NSF mark) of the National Sanitation Foundation.
 - a. All coils of polyethylene pipe or tubing shall be spirally wrapped in heavy water resistant kraft paper or packaged in cardboard boxes.
 - b. Each coil shall be labeled clearly to show the size, coil length and pressure rating of the pipe.
9. All polyethylene pipe or tubing shall be rejected for failure to comply with any requirements of these specifications or additional tests that are specified in ASTM D-2239, ASTM D-2737 and ASTM D-1248.

PART 3 – EXECUTION (NOT USED)

END OF SECTION

POLYVINYL CHLORIDE (PVC) PIPE

02/05/03

02616-5

This page left intentionally blank

SECTION 02618

HIGH DENSITY POLYETHYLENE (HDPE) PIPE

PART I - GENERAL

1.01 DESCRIPTION OF WORK

- A. The extent of the HDPE pipe is shown on the drawings.
- B. Reference to standard specifications herein shall be constructed as to be in reference to the latest revision or edition.

1.02 SUBMITTALS

- A. One original certified test report and two copies of all required test reports shall be submitted to the Engineer with each shipment of pipe. Certification shall also include all test results required by AWWA.

1.03 DELIVERY AND STORAGE

- A. In storing pipe, units shall be protected by dunnage in the same way they were protected while loaded on the truck, pipe shall be stored flat to protect against bending.
- B. In storing pipe, units shall be protected by dunnage in the same way they were protected while loaded on the truck. If pipe is to be outside longer than 15 days the pipe shall be covered with canvas or other opaque material to protect it from prolonged exposure to the sun.

PART 2 - PRODUCTS

2.01 HIGH DENSITY POLYETHYLENE (HDPE) PIPE

- A. HDPE pipe and fittings shall be a PE3408 high density, extra-high molecular weight polyethylene manufactured from first-quality high density polyethylene resin containing no additives, fillers, or extenders. The HDPE pipe shall have an ASTM D3350 cell classification of PE 345434C, and shall meet or exceed the properties listed in Table 02618-1 of this specification. The HDPE pipe shall meet the requirements of AWWA C906 and shall match ductile iron OD pipe sizing. The HDPE pipe and fittings shall be SDR-11 Phillips Driscopipe Series 1000, Chevron Plexco, or approved equal, and shall bear the approval seal of the National Sanitation Foundation (NSF).
- B. Joints: A continuous pipe shall be formed by butt fusing sections of pipe using manufacturer-approved equipment. The fused joints shall have equal or greater tensile and hydrostatic strength than the pipe.

HIGH DENSITY POLYETHYLENE (HDPE) PIPE

02/05/03

02618-1

- C. Fittings shall be MJ DIP meeting the requirements of Section 02610. The pipe shall have fusion welded restrainer ring, follower gland, and a 12" stainless steel insert for the MJ connection.

PART 3 - EXECUTION

3.01 TESTING HDPE PIPE

- A. Refer to section 1666 for testing of the pipe system and section 2300 for directional drilling.

Table 02618-1

Property	Specification	Unit	Nominal Value
Material Designation	PPI/ASTM		PE 3408
Material Classification	ASTM D-1248		III C 5 P34
Cell Classification	ASTM D-3350		345434C
Density	ASTM D-1505	gm/cm ³	0.955
Melt Index	ASTM D-1238	gm/10 min.	0.11
Flex Modulus	ASTM D-790	Psi	135,000
Tensile Strength	ASTM D-638	Psi	3,200
HDB @ 73NF	ASTM D-2837	Psi	1,600
U-V Stabilizer	ASTM D-1603	% C (Carbon Black)	2.5
Hardness	ASTM D-2240	Shore "D"	65
Compressive Strength (yield)	ASTM D-695	Psi	1,600
Tensile Strength @ Yield (Type VI Spec.)	ASTM D-638 (2"/min.)	Psi	3,200
Elongation @ Yield	ASTM D-638	%, minimum	8
Tensile Strength @ Break (Type VI Spec.)	ASTM D-638	Psi	5,000
Elongation @ Break	ASTM D-638	%, minimum	750
Modulus of Elasticity	ASTM D-638	Psi	130,000
Linear Thermal Expansion Coefficient	ASTM D-696	In./in./NF	1.2×10^{-4}
Brittleness Temperature	ASTM D-746	NF	<-180
Vicat Softening Temperature	ASTM D-1525	NF	257

END OF SECTION

HIGH DENSITY POLYETHYLENE (HDPE) PIPE

02/05/03

02618-2

**SECTION 02640
VALVES AND ACCESSORIES**

PART 1 – GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The Contractor shall furnish and install all gate valves, butterfly valves, plug valves, check valves, and other special valves and piping accessories as shown on the drawings and as specified herein.
- B. Valve input shaft shall be furnished with a two (2) inch square AWWA operating nut with an arrow cast on to show the direction of turning to close the valve.
- C. Extension shaft as manufactured by the valve manufacturer shall be provided to place the operating nut between six (6) inches and eighteen (18) inches below proposed grade along with stainless steel centering plate.
- D. Contractor shall install a brass disk within the valve pad according to standard detail.

1.02 SUBMITTALS

- A. The Contractor shall submit:
 - 1. Shop drawings or manufacturer's product data on all items in PART 2.
 - 2. One (1) original certified test report and two (2) copies of the test reports. Certification shall include all test results required by AWWA. The test shall include but not be limited to the following: Hydrostatic and leakage tests conducted in accordance with AWWA C504, Section 12.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. All valve operators shall be designed as not to require over 80 pounds pull to meet the required torque to operate the valves.
- B. All manually operated, shut-off or isolation valves, above grade, shall be furnished with handwheel or lever operators.
- C. All manually operated, shut-off or isolation valves that are mounted over six (6) feet above finish floor elevations shall be furnished with chain wheel operators. Chain for chain wheel operators shall be galvanized or stainless steel.

VALVES AND ACCESSORIES

10/15/04

02640-1

- D. All manually operated, shut-off or isolation valves, below grade, shall be furnished with AWWA 2" square actuating nuts and valve boxes. Valve boxes shall consist of cast iron base and adjustable top section with cover which shall be marked for the appropriate service, i.e. "WATER", "SEWER", "REUSE", ETC.
- E. Where called for on the drawings, electric valve actuators shall be provided. The electric actuators shall be powered by a high torque, reversible motor with integral thermal overload protection. The gear train shall be heat treated high alloy steel and shall be sized to withstand all imposed valve torque loads. The gear train shall be permanently lubricated. The actuator shall be furnished with a manual override capable of preventing electrical operation of the actuator when the override is engaged. The actuator, complete with integral positioner, shall be housed in a NEMA 4 enclosure and shall operate on 120 VAC, 1-phase, 60 Hz power supply.
- F. All valves shall open by turning to the left or counter-clockwise when viewed from the stem. The operating nut shall have an arrow cast in the metal indicating the direction of opening. Each valve shall have the manufacturer's distinctive marking, pressure rating and year of manufacture cast on the body. All valves shall be tested in accordance with applicable AWWA pressure testing procedures.

2.02 GATE VALVES

- A. Resilient seat gate valves shall be ductile iron bodied, bronze mounted, resilient rubber seated with wedge type disk. Valves shall be manufactured in accordance with AWWA C515. Valves shall be suitable for buried service, be designed for 200 psi working pressure, shall be of O-ring type, and shall have a permanently lubricated thrust collar sealed with an O-ring above and below. Valves shall have mechanical joint ends, except above ground valves shall be flanged. Valves shall be coated in accordance with AWWA C550, as manufactured by American Flow Control, Mueller, McWane, or U.S. Pipe and Foundry. No substitutions allowed.

2.03 BUTTERFLY VALVES

- A. Butterfly Valves (for liquid service):
 - 1. Butterfly valves shall conform to AWWA C504. Laying length of all classes shall be Table 1 (AWWA C504), short body. Valves shall be rated at 150 psi working pressure. Valves shall be bubble tight at rated pressures and shall be satisfactory for applications involving valve operation after long periods of inactivity. Valves shall have mechanical joint ends for buried service and flanged joints in the vaults and above grade. Butterfly valves shall be as manufactured by Pratt, Mueller, U.S. Pipe and Foundry, or McWane. No substitutions allowed.

VALVES AND ACCESSORIES

2. Valve body shall be ductile iron per AWWA C-504 with integrally cast hubs for shaft bearing housing. All exterior bolts, nuts, studs, and washers, including mechanical joint bolting accessories, shall be stainless steel.
3. The valve disc shall be of heat treated ductile iron, cast iron or alloy cast iron per ASTM A126, Class B, with a 316 SST edge. All materials shall meet AWWA C-504. The disc shall rotate 90 degrees from full open to tight shut position. The contractor shall verify clearance dimensions required for the valve disc to be compatible with the pipe.
4. Valve shaft shall be of a solid one-piece design or stub shaft. Shaft, taper pins, lockwashers and nuts shall be Type 304 or 316 stainless steel. A shaft seal and bronze gland follower, studs and nuts shall be provided in the valve body. Shaft seals shall be in accordance with Section AWWA C-504 for Class 150B, of the O-ring or split "V" type, suitable for buried service.
5. Valve seat shall be of molded natural or synthetic rubber, recess mounted, bonded to the valve body. All mechanical securing devices shall be stainless steel. Seats shall not be located on the disc.
6. Valves shall be fitted with sleeve type bearings of self-lubricating corrosion resistant material.
7. Valve operators shall be in accordance with AWWA C504 and for buried service shall be permanently lubricated with totally enclosed gearing and designed to operate indefinitely either buried or fully submerged. All operator components between the input and stop limit shall be designed to withstand, without damage, a pull of 200 pounds for handwheel or chain wheel operators and an input torque of 300 foot pounds for operating nuts. Operators shall be designed to require not over 150 foot pounds to meet the required operating torque. Operators shall be designed to hold the valve disc in any intermediate position between fully closed and fully open without creeping or fluttering.
8. All valves shall receive a protective inside lining. The lining shall be a two-part thermosetting epoxy protective lining and shall function as a physical, chemical and electrical barrier between the base metal to which it is applied and the surroundings. The lining shall be approved by both AWWA and NSF61. The lining shall be nontoxic and shall not impart taste to water. The lining must be formulated from materials deemed acceptable per the FOOD AND DRUG ADMINISTRATION DOCUMENT TITLE 21 of the FEDERAL REGULATIONS ON FOOD ADDITIVES, SECTION 121.2514 entitled, RESINS AND POLYMERIC COATINGS.

VALVES AND ACCESSORIES

10/15/04

02640-3

2.04 CHECK VALVES

A. General:

1. Check valves shall be installed where shown on the drawings.

B. Swing Check Valves:

1. Check valves three (3) inches and larger shall be horizontal swing check valves of the iron body bronze mounted, full opening type. Check valves shall be in accordance with AWWA C508 and equipped with outside levers and weights. Check valves smaller than three (3) inches shall be bronze, suitable for the service required.
2. Swing check valves shall be used at all locations where a specific type of check valve is not specified or noted on the drawings. Swing check valves shall be American Flow Control, McWane, Mueller, or U.S. Pipe and Foundry. No substitutions allowed.

C. Rubber Flapper Check Valves:

1. Check valves shall be rubber flapper swing check valves of long pattern design (not wafer). Check valves shall have a heavy ductile iron body. Cover, bolts, nuts, and washers shall be 304SS; flange gaskets shall be rubber. Flapper shall be Buna-N with an O-ring seating edge, an elastic spring, molded internally, and shall be reinforced with steel. The flapper shall be easily removed from the check valve without needing to remove the valve from the line. Check valves will have full pipe size flow area. Check valves shall be APCO, Val-Matic, or Crispin rubber flapper swing check valves. No substitutions allowed.

2.05 PVC BALL VALVES

- A. Ball valves shall be the true union types, PVC (rigid, unplasticized, Type 1, polyvinyl chloride). PVC Ball Valves shall be of the full port area type with Teflon seat and "T" handle manufactured by Hayward Manufacturing Co., Inc., or equal, as per AWWA 507.

2.06 PLUG VALVES

- A. Plug valves shall be of the non-lubricated eccentric round port design. Valves shall be designed for a working pressure of 175 psi through twelve (12) inches and 150 psi for fourteen (14) inches and larger. Plug valves shall be Pratt or Milliken. No substitutions allowed.

VALVES AND ACCESSORIES

10/15/04

02640-4

- B. Plug valves up through twenty-four (24) inches shall have a round port. Plug valves thirty (30) inches and larger may have a rectangular port.
- C. The valve plug shall be constructed of cast iron ASTM A126, Class B, with Buna-N resilient seating surface to mate with the body seat.
- D. Plug valves shall be furnished with permanently lubricated grit excluder seals shall be provided to isolate the bearings.
- E. Plug valve shaft seals shall be the self adjusting type. All packing shall be replaceable without removing the valve bonnet.
- F. Each valve shall be given a test against the seat at the full rated working pressure and a hydrostatic shell test at twice the rated working pressure. Certified copies of individual tests shall be submitted when requested. Certified copies of proof-of-design tests shall be submitted upon request.
- G. Manual valves shall have a worm gear type actuator with handwheels, two (2) inch square nuts, chainwheels attached. Worm gear type actuators shall be furnished on all six (6) inches or larger valves where the maximum unseating pressure is 25 psig or more.
- H. All valves shall receive a protective inside lining. The lining shall be a two-part thermosetting epoxy protective coating Amerlock 400 or equal and shall function as a physical, chemical and electrical barrier between the base metal to which it is applied and the surroundings.

2.07 REDUCED PRESSURE DEVICE

- A. Reduced pressure devices shall be furnished and installed according to the latest revision to the Sarasota County Cross Connection Control Ordinance.

2.08 FLANGED COUPLING ADAPTERS

- A. Flanged coupling adapters shall be used for joining plain end pipe to flanged valves, pumps, and fittings located as shown on the drawings and/or as required. The adapters shall be equipped with anchor studs designed to withstand the end thrust of the piping. Harnessing shall be provided on sizes above twelve (12) inches.
 - 1. The flanged adapters shall be fabricated steel, Rockwell International Type 913, Baker Type 602, or Dresser Type 128. No substitutions allowed.

VALVES AND ACCESSORIES

10/15/04

02640-5

2.09 WATER AIR RELEASE VALVES

- A. Air release valves shall be two (2) inches in size, and meet NSF 61 and/or AWWA C512. Water air release valves shall be manufactured by A.R.I. Model D-040 reinforced nylon body combination air valve, or Val-Matic Single Body Model 202C.2 cast iron body combination air valve. All valves must be ISO-9000 certified and NSF 61 Compliant. No other substitutions will be allowed.
- B. Valves shall be rated at 200 psi, and factory tested at 300 psi. Test results shall be supplied to Utilities upon request.
- C. Valve Construction:
1. The combination air valve shall be designed to allow large quantities of air to escape out the orifice when the water line is being charged and close water-tight when liquid enters the valve. The air valve shall also permit large quantities of air to re-enter through the orifice to prevent a vacuum from forming in the water line. The minimum size discharge nozzle shall be one and one half (1-1/2) inch diameter. Inlet connection shall be male or female 2" NPT.
 2. The A.R.I. valve shall consist of a reinforced nylon body, seal plug assembly, float and base. The seal plug assembly shall be attached to the body of the air release valve by a reinforced nylon clamping stem that slides in preformed grooves of the body. The body/base assembly shall be capable of being unscrewed for easy maintenance.
 3. Except for the resilient seal member, all internal components of the Val-Matic valve shall be constructed of type 316 stainless steel.
 4. Materials:

	A.R.I.	Val-Matic
Body Base	Reinforced Nylon	Cast Iron ASTM A126
Float	Foamed Polypropylene	316 Stainless Steel
Seat	EPDM	EPDM
Hardware	SAE 316 Stainless Steel	SAE 316 Stainless Stl.
Coating/Color	None/Blue Outlet	Universal Alkyd (Blue)
 5. Connection to the waterline shall be constructed as indicated on the Sarasota County Standard Detail entitled "Automatic Air Release Valve", Water Dwg. No. 3, as modified herein.
Specific Drawing Modifications: 1) Eliminate concrete slab at enclosure, and 2) use 4 - 45 degree bends rather than 2 - 90 degree bends on offset pipe run.

VALVES AND ACCESSORIES

10/15/04

02640-6

All valves shall be installed in accordance with manufacturer's recommendations, and shall have a brass ball valve(s) constructed upstream of the air release valve.

6. Above Ground Enclosure:
All air release valves shall be enclosed in a 16" Wide X 13" Deep X 32" High above ground enclosure. Enclosures shall consist of high quality, UV resistant molded high impact resistant polyethylene poly-plastic construction with stainless steel hardware and galvanized steel mounting stakes. All enclosures shall be dark blue in color for potable water and shall be equipped with a Pin Allen lock and key.

The word "WATER" shall be embossed on the enclosure, visible at roadside. A Pin Allen key shall be provided with each installation. Enclosures shall be supplied by Water Plus Corporation, Model # 131632, Color: DARK BLUE.

2.10 WASTEWATER & RE-USE WATER AIR RELEASE VALVES

- A. Air release valves shall be two (2) inches in size. Wastewater & Re-use Water air release valves shall be manufactured by A.R.I. Model D-025 reinforced nylon body combination air valve. Valves must be ISO-9000 certified. No substitutions will be allowed.
- B. Valves shall be rated at 150 psi, and factory tested at 230 psi. Test results shall be supplied to Utilities upon request.
- C. Valve Construction:
 1. The combination air valve shall be specifically designed to operate with liquids carrying solid particles, and allow large quantities of air to escape out the orifice when the pipeline is being charged and close water-tight when liquid enters the valve. The combination valve shall also permit large quantities of air to re-enter through the orifice to prevent a vacuum from forming in the pipeline. The valve shall have a two (2) inch male N.P.T. inlet and a one and one-half (1-1/2) inch male Kamlok discharge. All valves shall be installed in accordance with manufacturer's recommendations, and shall have isolation valve connections for control.
 2. The A.R.I. valve shall be conical in shape, and consist of a reinforced nylon body, seal plug assembly, float and base. The valve design and operation shall not allow contact between the sewage or re-use water and the sealing mechanism by providing an air gap at the top of the valve. The seal plug assembly shall be attached to the body of the air release valve by a reinforced nylon clamping stem that slides in preformed grooves of the body. The body/base seal shall consist of a BUNA-N O-Ring Gasket and SAE 316 Stainless Steel clamp which can be disassembled for easy maintenance.

VALVES AND ACCESSORIES

10/15/04

02640-7

3. Air release valves shall also be furnished with a one half (1/2) inch outlet drain plug.
4. Materials:
- | | |
|---------------------|--|
| Body Base | Reinforced Nylon |
| Float | Foamed Polypropylene |
| Seat | EPDM |
| Interior Components | SAE 316 Stainless Steel |
| Exterior Hardware | SAE 316 Stainless Steel |
| Coating/Color | Green Flushing Connection (Sewer)
Pantone Purple Flushing Connection (Re-Use) |
5. Wherever possible, above grade air release valves for wastewater and re-use water lines shall be designed and installed. Connection to the wastewater line, or re-use water line, shall be constructed as indicated on the Sarasota County Standard Detail entitled "Automatic Air Release Valve", Water Dwg. No. 3, as modified herein.
6. Where underground installations of wastewater and re-use water air release valves are required, connection to the lines shall be constructed as indicated on the Sarasota County Standard Detail entitled "Automatic Air Release Valve", Sewer Dwg. No. 15, as modified herein.
Specific Drawing Modifications: 1) Pre-Cast Concrete Manhole shall be 5' minimum diameter, and 2) eliminate fill inside of manhole.
7. Above Ground Enclosures:
All above grade air release valves shall be enclosed in a 16" Wide X 13" Deep X 32" High above ground enclosure. Enclosures shall consist of high quality, UV resistant molded high impact resistant polyethylene poly-plastic construction with stainless steel hardware and galvanized steel mounting stakes. All enclosures shall be equipped with a Pin Allen lock and key.
- The word "SEWER" shall be embossed on the wastewater line enclosure, visible at roadside. A Pin Allen key shall be provided with each installation. Enclosures shall be supplied by Water Plus Corporation, Model # 131632, Color: STANDARD MEDIUM GREEN.
- The word "RE-USE" shall be embossed on the wastewater line enclosure, visible at roadside. A Pin Allen key shall be provided with each installation. Enclosures shall be supplied by Water Plus Corporation, Model # 131632, Color: GRAY.

VALVES AND ACCESSORIES

10/15/04

02640-8

2.11 PRESSURE SUSTAINING VALVES

- A. This valve shall maintain a constant upstream pressure regardless of fluctuations in the demand, and shall also close tight when pressure reversal occurs.
- B. The main valve shall be a hydraulically operated, diaphragm-actuated, globe or angle pattern valve. It shall contain a resilient, synthetic rubber disc, having a rectangular cross-section, contained on three and one-half sides by a disc retainer and forming a tight seal against a single removable seat insert. The diaphragm assembly containing a valve stem shall be fully guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. This diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure. The diaphragm shall consist of nylon fabric bonded with synthetic rubber and shall not be used as a seating surface. Packing glands and/or stuffing boxes are not permitted and there shall be pistons operating the valve or pilot controls. All necessary repairs shall be possible without removing valve from the line.
- C. The pilot control shall be a direct-acting, adjustable spring-loaded, diaphragm valve, designed to permit flow when controlling pressure exceeds the spring setting.
- D. When downstream pressure exceeds the inlet pressure, the valve shall close tight to prevent reverse flow.
- E. Valve shall be similar in all respects to the CLAYTON 51-01 COMBINATION PRESSURE SUSTAINING AND CHECK VALVE as manufactured by Cla-Val, Bermad, or equal.
- F. Provide pressure gauges upstream and downstream of the valve.

2.12 VALVE BOXES

- A. Valve boxes shall be the five and one quarter (5-1/4) inches standard cast iron two-piece, screw type valve box with drop cover marker "WATER." The marker shall denote type of service, i.e. WATER, SEWER, RAW, REUSE, etc. They shall be of sufficient height to allow them to be raised an additional two (2) inches above the final elevation at each location that a valve is required on this project. PVC sleeves will not be allowed. Valve boxes shall be manufactured in the United States of America.

2.13 SLEEVES

- A. Sleeves shall be cast iron, and of the size and in the location shown on the drawings. Sleeves shall comply with section 2610 of this document.

VALVES AND ACCESSORIES

10/15/04

02640-9

2.14 GAUGES

- A. Gauges shall be furnished for the discharge side of all pumps and downstream side of pressure sustaining valves. Gauges shall be bourdon tube types, with bronze movement, plexiglass covers and shall be four and one-half (4-1/2) inches in diameter. Each gauge shall have a one-quarter (1/4) inch NPT pumped liquid flushing connection with brass level handle blow-off pet cock. All surfaces exposed to the pumped liquid shall be of stainless steel. Gauges shall be calibrated in feet. All pump discharge gauges shall be equipped with electrical contacts for pump failure indication. The contacts shall be field adjustable and have a contact rating of one-quarter (1/4) A 120 VAC. Gauges for sewage shall be oil filled and be constructed with a diaphragm to prevent contact between the wastewater and the gauge. All gauges must be preapproved by the Engineer before ordering.

END OF SECTION

VALVES AND ACCESSORIES

10/15/04

02640-10

SECTION 02900

LEACHATE PUMP STATION

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The work to be performed under this section of the specification consists of the furnishing of all labor, materials, equipment and services necessary for furnishing and installing an above ground pumping station complete and in proper operating condition. The location, size and details of the station shall be as shown on the drawings. The work for the station shall include site fill, placing the concrete base slab, all piping, connection of the force main to the station and all other necessary piping, valves and fittings required and all electrical control and panels.

1.02 RELATED REQUIREMENTS SPECIFIED IN OTHER SECTIONS:

- A. Trenching, Excavation, Backfilling and Compaction: Section 02222
- B. Fittings: Section 02610
- C. Ductile Iron /Fittings Liners: Section 02615
- D. Valves: Section 02640
- E. Concrete: Section 03301
- F. Control Panels for Duplex Pump Stations: Section 16470

1.03 SUBMITTALS

- A. Submit manufacturer's certificate of conformance.
- B. Shop Drawings: Submit manufacturer's drawings and data sheets for material to be supplied under this section. Indicate sizes and types to be installed.
- C. Submit certified copies of all manufacturers' tests.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Upon delivery and before unloading, the Contractor must inspect the materials for any damage incurred in transit and note such damage on the delivery ticket.
- B. The means by which the materials are unloaded is the decision and responsibility of the Contractor. He shall follow recommendations of the manufacturer.

02/05/03

WASTEWATER PUMP STATIONS

02900-1

- C. The Contractor shall follow manufacturers' recommendations for storage of materials in order to minimize damage prior to installation.
- D. The Contractor shall adhere to the standard procedures given by the manufacturer for handling the materials.

PART 2 - PRODUCTS

2.01 GENERAL

- A. The above ground pumping station shall be furnished with all necessary equipment installed on a slab as shown on the drawings. The principal items of equipment of the station shall be horizontal, motor-driven, non-clog submersible wastewater pumps, necessary gate and check valves, required piping, central control panel with circuit breakers and motor starters, and automatic pumping level controller, and other required appurtenances and wiring.

2.02 PUMPS

- A. The pumps shall be capable of handling unscreened wastewater at a pumping rate adequate for the total dynamic head and flow rate required for proper operation of the system in which it exists.

The pumps shall be KSB Sewatec/Sewabloc F 50-250 unless otherwise approved.

2.03 PUMP MOTORS

- A. All pump motors shall be horizontal, dry-pit, and rated for continuous duty.
- B. Pump motors shall be housed in an air-filled watertight casing and shall have Class "F" insulated winding which shall be moisture resistant. The motor shall be Nema Design B rated 155NEC maximum.

2.04 LEVEL CONTROLS

- A. Liquid level controls shall include mercury switch level sensors in corrosion and shock resistant plastic casing with flexible cord and weight. The level control system shall include support brackets for suspending sensors at proper levels in the tank. Controls for automatically alternating the pumps shall also be installed.

PART 3 - EXECUTION

3.01 FACTORY TESTING

- A. The pump manufacturer shall perform inspection tests on each pump before shipment to insure proper operation of the pump and compliance to the customer's purchase order. Pump tests completed by the manufacturer shall be submitted to the Engineer for review and approval prior to shipment.

02/05/03

WASTEWATER PUMP STATIONS

02900-2

3.02 ACCEPTANCE TEST

- A. After installation, the pumping station shall be given a running test of all equipment. During the test, all piping and seals shall be checked to insure no leaks occur at all and controls shall be carefully checked and balanced for proper operation.
- B. The Contractor shall furnish all necessary tools, materials, equipment, labor, and supervision of the tests.
- C. Any defects in the equipment or failure to meet the guaranteed requirements of these specifications shall be promptly corrected by the Contractor by replacement.

3.03 SPARE PARTS AND MANUALS

- A. A complete replacement pump shaft seal assembly, complete with installation instructions and spare volute gasket shall be furnished.
- B. A complete operating and maintenance manual, in duplicate, shall be furnished. A one year's supply of lubricants shall be supplied.
- C. One complete pressure gauge shall be furnished. The gauge shall be Type A, oil filled with a range of 0 to 60 psi scale. Certificates of calibration shall be provided with the gauge.

END OF SECTION

This page left intentionally blank

SECTION 03301

CONCRETE

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. The extent of concrete work is shown on the drawings.

1.02 CODES AND STANDARDS

- A. ACI 350 "Environmental Engineering Structures"; ACI 347 "Recommended Practice for Concrete Formwork"; ACI 304 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete"; comply with applicable provisions.
- B. Reference to standard specifications herein shall be construed as to be in reference to the latest revision or edition.

1.03 STORAGE

- A. Immediately upon receipt at the site, cement that is to be site mixed shall be stored in a dry, weather tight building, properly ventilated and with provisions for prevention of moisture absorption.
- B. Reinforcing shall be protected from the weather.

PART 2 - PRODUCTS

2.01 CONCRETE MATERIALS

- A. Cement: Cement shall conform to standard specifications for "Portland Cement", ASTM C150, Type II.
- B. Aggregate: Concrete aggregate shall conform to the current specifications for "Concrete Aggregate", ASTM Designation C33.
- C. Water: Water used in mixing concrete shall be fresh, clean, and free from injurious amounts of oil, acid, alkali or organic matter, conforming to ASTM C 94.
- D. Ready-Mix Concrete: Ready-mixed concrete may be used at the option of the Contractor provided that such concrete meets the requirements of these specifications and of ASTM Designation C94 for "Ready-Mixed Concrete".

02/05/03

CONCRETE

03301-1

- E. High-Early-Strength Concrete: Concrete made with high-early-strength Portland cement shall be used only when specifically authorized by the Engineer. The 7-day compressive strength of concrete made with high-early-strength cement shall be at least equal to the minimum 28-day compressive strength specified. All provisions of these specifications shall be applicable to high-early-strength concrete except the cement shall conform to ASTM Designation C150, Type III.

2.02 RELATED MATERIALS

- A. Reinforcing: Deformed Reinforcing Bars, ASTM A615; Grade 60 unless otherwise indicated.
- B. Welded Wire Fabric: ASTM A185.
- C. Liquid Membrane-Forming Curing Compound: ASTM C309, Type I.
- D. Form Materials:
 - 1. Provide form materials with sufficient stability to withstand pressure of placed concrete without bow or deflection.
 - 2. Exposed Concrete Surfaces: Suitable material to suit project conditions.
- E. Waterstops: Waterstops to be used in joints shall be three-eighths (3/8) inch by six (6) inch wide PVC by Greenstreak, or approved equal.
- F. Chemical Floor Hardener: Colorless aqueous solution containing a blend of magnesium fluosilicate and zinc fluosilicate combined with a wetting agent, containing not less than 2 lbs. of fluosilicates per gallon.
 - 1. Apply to exposed concrete slabs not indicated or scheduled to receive subsequent finishes.

2.03 QUALITY

- A. Reinforced Concrete: The minimum 28-day compressive strength of reinforced concrete shall be 4,000 psi, unless shown otherwise on the drawings.
 - 1. Each cubic yard of 4,000 psi concrete shall contain no less than 480 lbs. of cement. The water to cement ratio shall not exceed 0.45.
- B. Reinforced Concrete: The minimum 28-day compressive strength of non-reinforced concrete shall be 2,500 psi, unless shown otherwise on the drawings.

1. Each cubic yard of 2,500 psi concrete shall contain no less than 440 lbs. of cement. The total water content per bag shall not exceed 7.5 gallons.
- C. Mix Proportions: All concrete materials shall be proportioned so as to produce a workable mixture with a slump between 2" and 4".
- D. Tests:
 1. The Contractor shall provide, for test purposes, one set of three cylinders taken from each day's pour or each 100 yards placed, whichever is least or as directed by the Engineer. The Contractor at his expense shall supply test samples and an independent testing laboratory at the Contractor's expense will perform tests. The standard age of test shall be 28 days; but, when approved by the Engineer, 7 day tests may be used provided that the relation between the 7 and 28-day strengths of the concrete is established by test for materials and proportions used. If the test strength of the cylinders falls below the minimum allowable compressive strength, the Engineer shall have the right to order the Contractor to remove and renew that day's pour of concrete or the Contractor shall accept such deductions in the final payment as the County may deem reasonable.
 2. Sampling and testing of concrete materials shall be made in accordance with ASTM Designations. The Contractor at his expense shall supply test samples, and an independent testing laboratory at the Contractor's expense shall make tests. The source from which concrete aggregates are to be obtained shall be selected by the Contractor well in advance of the time when they will be required in the work; and suitable samples, as they are to be used in the concrete, shall be furnished in advance of the time when the placing of the concrete is expected to begin.

PART 3 - EXECUTION

3.01 FORMING AND PLACING CONCRETE

- A. Formwork: Construct so that concrete members and structures are of correct size, shape, alignment, elevation and position, complying with ACI 347.
- B. Clean and adjust forms prior to concrete placement. Apply form release agents for wet forms, as required. Retighten forms during and after concrete placement if required to eliminate mortar leaks.

3.02 REINFORCEMENT

- A. Position, support and secure reinforcement against displacement. Locate and

02/05/03

CONCRETE

03301-3

support with metal chairs, runners, bolsters, spacers and hangers, as required. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

- B. Install welded wire fabric in lengths as long as possible, lapping at least one complete mesh.
- C. Installation of Embedded Items: Set and build into the work anchorage devices and other embedded items required for other work that is attached to, or supported by cast-in-place concrete. Use setting diagrams, templates and instructions provided by others for locating and setting.

3.03 CONCRETE PLACEMENT

- A. Comply with ACI 304, placing concrete in a continuous operation within planned joints or sections. Do not begin placement until work of other trades affecting concrete is completed.
- B. Consolidate placed concrete using mechanical vibrating equipment with hand rodding and tamping, so that concrete is worked around reinforcement and other embedded items and into all parts of the forms.
- C. Protect concrete from physical damage or reduced strength due to weather extremes during mixing, placement and curing. Concrete shall not be placed when the surrounding air temperature is below 40°F. and dropping.
 - 1. In cold weather comply with ACI 306.
 - 2. In hot weather comply with ACI 305.

3.04 CONCRETE FINISHES

- A. Nonslip Broom Finish: Apply nonslip broom finish to exterior concrete, sidewalks and pump station top slab.
 - 1. Immediately after trowel finishing, slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route. Coordinate required final finish with the Engineer before application.
- B. Monolithic Trowel Finish: For all slab and flatwork surfaces not otherwise indicated or specified. After surface water disappears and floated surface is sufficiently hardened, steel trowel and retrowel to smooth surface. After concrete has set enough to ring trowel, retrowel to a smooth uniform finish free of trowel marks or other blemishes. Avoid excessive trowelling that produces burnished areas.

3.05 BONDING AND GROUTING

- A. Before depositing new concrete on or against concrete that has set, existing surfaces shall be thoroughly roughened and cleaned of glaze, foreign matter, and loose particles. An epoxy coating, as approved by the Engineer, shall be applied for bonding the new concrete to the old.

3.06 CURING

- A. Concrete shall be kept continuously (not periodically) wet for a period of at least five consecutive days by covering with water or with an approved water saturated covering. Water for curing shall be clean and free from any elements, which might cause staining, or discoloration of the concrete surface.
- B. Sidewalks and floor slabs may be cured by spraying with a Membrane-Forming curing compound, applied as per manufacturer's recommendations and as approved by the Engineer. This material shall not be used on any interior slabs to which an applied finish is to be bonded.

3.07 PATCHING

- A. Any concrete which is not formed as shown on the drawings, or is out of alignment or level or shows a defective surface, shall be considered as not conforming with the intent of these specifications and shall be removed from the job by the Contractor at his expense, unless the Engineer grants permission to patch the defective area. This shall be done in accordance with the procedures above. Honeycomb consisting of 3/4" diameter holes or greater shall be considered a defective surface. Permission to patch any such area shall not be considered a waiver of the Engineer's right to require complete removal of the defective work if the patching does not, in his opinion, satisfactorily restore the quality of the concrete and appearance of the surface.
- B. As the forms are removed, fins, rough edges, and offsets shall be ground smooth. Holes to 3/4", slight honeycomb, and minor defects shall be wet and filled with a 1:2 mix of cement mortar, matching color of surrounding concrete, and then troweled to a uniform plane. As soon as they have been troweled, the patched areas shall be sprayed with a curing compound, which will not destroy future bonding properties. Three days after application of curing compound, the entire surface shall be finished by wetting and applying a 1:2 mix of cement mortar with a cement brick. Using the brick, mortar shall be rubbed into pits or indentations and excess mortar rubbed off to provide a uniformly textured surface. When the surface has dried, all loose sand and dust shall be removed and the surface then hosed down with water.

3.08 TOLERANCES

02/05/03

CONCRETE

03301-5

- A. Tolerances for concrete work shall be in accordance with ACI 347.

END OF SECTION

CONCRETE

03301-6

SECTION 09905

PAINTING AND PROTECTIVE COATINGS

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. Requirement specified in Conditions of Contract and Division 1 form a part of this section. Provide all labor, materials, apparatus, scaffolding, and all appurtenant work in connection with painting and protective coatings, complete as indicated, specified, and required.
- B. Principal items include, but are not limited to:
 - 1. All exposed piping, conduits, tanks, equipment, and other metal surfaces, interior and exterior, except as hereinafter specifically excluded.
 - 2. All structural and miscellaneous steel.
 - 3. Equipment furnished without factory finished surfaces.
 - 4. Any tanks or equipment, on which factory applied finishes have been marred, abraded, scratched, nicked, or otherwise damaged.
 - 5. The interior of concrete tanks, manholes, and similar structures, except drainage structures.
 - 6. CMU surfaces and other architectural work as specified and shown on the drawings.
- C. The following surfaces, in general, shall not be field painted:
 - 1. Concrete surfaces subject to pedestrian or vehicular traffic, except as herein specified.
 - 2. Nonferrous metals and stainless steel unless otherwise noted or indicated. Galvanized steel shall not be considered as a nonferrous metal.
 - 3. Mechanical equipment and prefabricated roof and side panels, gutters and downspouts with factory finish as specified herein.

PAINTING AND PROTECTIVE COATINGS

02/05/03

09905-1

4. Electrical and instrumentation equipment with approved factory finish or of stainless steel/nonferrous metal construction, unless otherwise specified.
5. Aluminum grating.
6. Drainage structures.

Related work not included in this section:

1. Sealants and caulking.

The Contractor shall furnish to the Engineer, at no charge for use during this project, one dry film thickness gages and one electrical flaw detection equipment systems.

1.02 REFERENCE SPECIFICATIONS AND STANDARDS

- A. Without limiting the generality of other requirements of these specifications, all cleaning, surface preparation, and coating shall conform to the applicable requirements of the referenced portions of the standards specified herein to the extent that the requirements therein specified are not in conflict with the provisions of this section.
- B. Unless otherwise specified, all work and materials for the preparation and coating of all metal surfaces shall conform to the applicable requirements specified in the Steel Structures Painting Manual, Volume 2, Systems and Specifications Revised, latest edition, published by the Steel Structures Painting Council.
- C. The following referenced surface preparation specifications of the Steel Structures Painting Council shall form a part of this section.
 1. White Metal Blast Cleaning (SSPC-SP5). Removal of all visible rust, mill scale, paint, and foreign matter by blast cleaning by wheel or nozzle (dry) using sand, grit, or shot. (For very corrosive atmosphere.)
 2. Near-White Blast Cleaning (SSPC-SP10). Blast cleaning nearly to White Metal Cleanliness, until at least 95 percent of each element of surface area is free of all visible residues. (For high humidity, chemical atmosphere, marine or other corrosive environment.)
 3. Commercial Blast (SSPC-SP6). Blast cleaning until at least 67 percent of each element of surface area is free of all visible residues.

02/05/03

PAINTING AND PROTECTIVE COATINGS

09905-2

4. Brush-Off Blast Cleaning (SSPC-SP7). Blast cleaning of all except tightly adhering residues of mill scale, rust and coatings, exposing numerous evenly distributed flecks of underlying metal.
 5. Solvent Cleaning (SSPC-SP1). Removal of oil, grease, dirt, soil, salts, and contaminants by cleaning with solvent, vapor, alkali, emulsion or steam.
- D. Quality Assurance. Evaluation of surface preparation for ferrous metals will be based upon NACE Standard TM-01-Visual Standard for Surface Preparation.

1.03 SUBMITTALS.

Submittals shall be in accordance with the General Conditions, and the following:

A. Samples.

1. Prepare and submit for Engineer's approval six (6) copies of color samples on 8-1/2" x 11" size cards for each paint and protective coating system. Each sample card shall clearly show each coat of the finish system, and shall be clearly marked with the manufacturer's name and product identification, and shall be submitted in sufficient time to allow for approval and, if necessary, resubmitted without causing any delay of the project.

B. Coating Materials List.

1. The Contractor shall provide six (6) copies of a paint and coatings materials list which indicates the manufacturer and paint number, keyed to the coating schedule herein, for approval by the Engineer prior to or at the time of submittal of samples required herein.
2. The Contractor shall include with his submittal, his protective coating schedule for shop and field coatings of items to receive protection. The schedule shall conform to the specified requirements for surface preparation, priming, and coating for items covered, and shall follow the same requirements for similar work where such work has not been specifically called-out. No bare ferrous nonworking surfaces shall be omitted from the schedule. Particular care shall be taken to cover in sufficient detail the coating of mechanical joints and other mechanical devices, which shall conform to the recommended practice of the manufacturer of the joint or other mechanical devices.
3. Submittal shall be within 60 calendar days of notice of award to permit Engineer's review and then Contractor's coordination with affected material and equipment suppliers to assure their use of approved shop

coats of same manufacture as field coats and compatibility with field applied coats for respective coating systems.

4. Coatings to be used on plastic and fiberglass materials shall be certified as acceptable by all plastic and fiberglass manufacturers whose products are to be coated. Certification copies shall be submitted to the Engineer. The Contractor shall be certified in writing by the painting and coating material manufacturers as qualified applicators of their products with copies of the certification submitted to the Engineer.
- C. Product Data Sheets. Contractor shall submit paint and coatings material manufacturers' printed technical data sheets for products intended for use in each paint and coating system. Data sheets shall fully describe material as to its intended use, makeup, recommended surface preparation and application conditions, primers, material mixing and application (including recommended dry mil thickness recoat time), precautions, safety and maintenance cleaning directions.
- D. Material Safety Data Sheets. Material Safety Data Sheets (MSDS) shall accompany all paint submittals and shall be prominently displayed at the job site during all painting activities.

1.04 PROTECTION OF WORK

- A. The Contractor shall be responsible for any and all damage to his work or the work of others caused by Contractor's painting activities during the time his work is in progress.

1.05 EXTRA STOCK

- A. The Contractor shall deliver to the County one (1) gallon can of each type and color of finish paint and coating used on the project for every ten (10) gallons applied. As a minimum, one (1) gallon of each type and color of finish paint and coating used on the project shall be provided as extra stock. Extra stock paint shall be supplied in appropriate sealed containers and be clearly labeled as to paint type, formula, and color.

1.06 RIGHT OF REJECTION

- A. The Engineer shall have the right to reject all material or work that is unsatisfactory, and require the replacement of either or both.

1.07 ONE MANUFACTURER

- A. To the maximum extent possible, all products shall be the products of one manufacturer unless a specific specialty coating system is specified. Without

PAINING AND PROTECTIVE COATINGS

02/05/03

exception, all coatings for any service condition specified herein shall be by one manufacturer. Once a paint manufacturer has been selected by the Contractor and approved by the Engineer, the Contractor shall ensure that all equipment manufacturers primer their equipment with the same or a compatible primer.

1.08 JOB CONFERENCE

- A. Prior to commencing painting work a pre-job conference shall be held for the purpose of reviewing the painting and coating requirements of the project. The County, Engineer, Contractor, and Applicator representative shall be present. A schedule of work to be accomplished will be established.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Surfaces to receive paint and protective coating materials as herein specified in this section shall be coated in conformance with the applicable coating systems specified herein. All materials specified by name and/or manufacturer or approved for use under these specifications, shall be delivered unopened at the job site in their original containers and shall not be opened until inspected by the Engineer.
- B. Whenever a manufacturer's brand name is specified, it is intended to define the general type and quality of paint or coating desired. Other coatings or paints of equal quality may be used. Coating materials shall be products of Scott Paint Company System and TNEMEC System, unless otherwise specified, or approved equal. All paint and coatings shall be produced and applied as herein called for or, if not specifically called for, it shall be applied in accordance with the manufacturer's printed recommendations as approved by Engineer. Coating materials shall meet Volatile Organic Compounds (VOC) requirements of not more than 3.5 lbs./gal. as applied after thinning.
- C. General.
 - 1. Paint and protective coating materials shall be sealed in containers that plainly show the designated name, formula or specification number, batch number, color, date of manufacture, manufacturer's directions, and name of manufacturer, all of which shall be plainly legible at the time of use. Pigmented paints shall be furnished in containers not larger than five (5) gallons. Materials shall conform to the specifications shown herein and to the requirements hereinafter specified.
 - 2. Products shall be standard of recognized manufacturer engaged in production of such materials for essentially identical or similar applications in the water and wastewater treatment industry.

PAINING AND PROTECTIVE COATINGS

02/05/03

- D. Compatibility. Only compatible materials shall be used in the work. Particular attention shall be directed to compatibility of primers and finish coats. If necessary, subject to approval of the Engineer, a compatible barrier coat shall be applied between existing prime coat and subsequent field coats to ensure compatibility.
- E. Colors. All colors and shades of colors of all coats of paints and protective-coating material shall be as identified in the color schedule, attached architectural sketches or as modified by the County. Each coat shall be of a slightly different shade, as directed by the Engineer to facilitate inspection of surface coverage of each coat.

2.02 SERVICE CONDITION A

- A. Ferrous metals, other than stainless steel, within wet wells or similar corrosive atmospheres, submerged or intermittently submerged in chemical mixtures or similar corrosive liquids shall be prepared and coated in accordance with the following requirements.
- B. Surface Preparation. All metal surfaces shall be field sandblasted in accordance with Steel Structures Painting Council Specification SSPC-SP10 (Near White Blast Cleaning). Weld surface, edges, and sharp corners shall be ground smoothly and all weld splatter removed per SSPC-SP3 "Power Tool" or SP2 "Hand Tool" Cleaning.
- C. Application. Application shall be in strict conformance with the manufacturer's painted recommendations. All sharp edges, nuts, bolts, or other items difficult to coat shall receive a brush-applied coat of the specified coating prior to application of each coat.
- D. Except as otherwise noted, the prime coat shall have a minimum total dry film thickness of 3 mils and the two finish coats shall have a minimum total dry film thickness of 13 mils. If the finish coat is not applied within the manufacturer's recommended time period, an intermediate special surface conditioner shall be applied in advance of finish coats or a light brush blast. The total system shall have a minimum dry film thickness of 16 mils.

Scott System: Not Available

TNEMEC System: Shop Primer – Series 66-1211
Field Primer – Series 104
Finish Coats – Series 104

02/05/03

PAINTING AND PROTECTIVE COATINGS

09905-6

2.03 SERVICE CONDITION B

- A. Ferrous metals, other than stainless steel, subject to chemical attack, shall be prepared and coated in accordance with the following requirements. See Paragraph 2.09 for asphaltic/bituminous coated pipe.
- B. Surface Preparation. All surfaces shall be free of dirt, dust, grease, or other foreign matter before coating. Ferrous surfaces shall be cleaned in accordance with the Steel Structures Painting Council Specification SSPC-SP7 (Brush Off Blast Cleaning). Weld surface, edges and sharp corners shall be ground smooth and all weld splatter shall be removed per SSPC-SP3 or SP2.
- C. Application. Application shall be in strict conformance with the manufacturer's printed recommendations. All sharp edges, nuts, bolts, or other items difficult to coat shall receive a brush-applied coat of the specified coating prior to application of each coat.
- D. Except as specified below, the prime coat shall have a minimum thickness of 3 mils, intermediate coat shall have minimum thickness of 4 mils, and one or more finish coats minimum total dry film thickness of 8.0 mils.

Scott System: Primer – Scott #931 Encapsulon Surface Tolerant Epoxy Mastic Primer

Intermediate Coat – Scott #931 Encapsulon Surface Tolerant Epoxy Mastic Primer

Finish Coats – Bruning Silathane II 532 Line

TNEMEC System: Primer – Series 66

Intermediate Coat – Series 66

Finish Coats – Series 73

2.04 SERVICE CONDITION C

- A. Coating aluminum and galvanized metal surfaces, including frames, and checkered plate, subject to corrosive atmosphere and condensation shall be prepared and coated with the following requirements.
- B. Surface Preparation. Clean non-ferrous surfaces in accordance with SSPC-SP1 (Solvent Cleaning).
- C. Application. Application shall be in strict conformance with manufacturer's painted recommendations.

PAINTING AND PROTECTIVE COATINGS

02/05/03

09905-7

- D. Conform with the following to provide a minimum total dry mil thickness of 5.5 mils:

Scott System: Primer – Scott #692 Aquaseal Latex Surface Conditioner White

Finish Coats – Bruning Silathane II 532 Line

TNEMEC System: Primer – Series 66

Finish Coats – Series 66

2.05 SERVICE CONDITION D

- A. Coating exposed PVC pipe shall be prepared and coated in accordance with the following requirements.
- B. Surface preparation. Clean surfaces with SSPC-SP1 solvent cleaner. Lightly sand all surfaces. Degrease prior to sanding.
- C. Application. Application shall be in strict conformance with the manufacturer's printed recommendations.
- D. Conform with the following to provide a minimum total dry mil thickness of 8 mils.

Scott System: Primer – Scott #692 Aquaseal Latex Surface Conditioner White

Intermediate Coat – Bruning Silathane II 532 Line

Finish Coat – Bruning Silathane II 532 Line

TNEMEC System: Primer – Series 66

Intermediate Coat – Series 66

Finish Coats – Series 73

2.06 SERVICE CONDITION E

- A. Concrete, which is subject to submergence and intermittent submergence in water or groundwater, shall be prepared and coated in accordance with the following requirements.

PAINTING AND PROTECTIVE COATINGS

02/05/03

09905-8

- B. Surface Preparation. All surfaces shall be cleaned of all dirt, dust, oil, curing compounds, and other deleterious compounds. In general, the concrete shall be reasonably smooth and free of pockets and cavities. Horizontal surfaces shall be etched with a 15 to 20 percent solution of muriatic acid and thoroughly rinsed with clean water. Vertical walls shall be cleaned by brush blasting (NACE #4 or SSPC-SP7). All surfaces shall be completely dry before application of the coating.
- C. Application. Application shall be in strict conformance with the manufacturer's printed recommendations. All coats shall be applied within 24 hours of the previous coat.
- D. The prime coat shall have a minimum dry film thickness of 3 mils and two finish coats shall have a minimum total dry film thickness of 8 mils. The total system shall have a minimum dry film thickness of 11 mils.

Scott System: Not Available

TNEMEC System: Primer – Series 66
Two Finish Coats – Series 66

2.07 ARCHITECTURAL PAINT FINISHES

- A. Manufacture. Unless otherwise noted, products listed below are the products of Scott coating system or TNEMEC system. Approved equivalent products will be acceptable.
- B. Concrete block walls in aggressive areas (Service Condition CBW).
 - 1. Surface Preparation. Surfaces shall be cured for 28 days, clean, dry and free from curing compounds, oil, grease, dirt, or chalk.
 - 2. Filler. Induron Polyfill Epoxy Block Filler.
 - 3. Prime Coat. One coat of Scott #931 Encapsulon Surface Tolerant Epoxy Mastic Primer applied at 6.0 mils dry film thickness.
 - 4. Finish Coats. Two coats of Bruning Silathane II 532 Line applied at 2.0 mils dry film thickness per coat.
- C. TNEMEC - Concrete block walls in aggressive areas (Service Condition CBW).
 - 1. Surface Preparation. Surfaces shall be cured for 28 days, clean, dry and free from curing compounds, oil, grease, dirt, or chalk.

PAINTING AND PROTECTIVE COATINGS

02/05/03

09905-9

2. Filler. TNEMEC Series 54-660.
 3. Prime Coat. One coat of TNEMEC Series 66 applied at 3.0 mils dry film thickness.
 4. Finish Coats. Two coats of TNEMEC Series 66 applied at 4.0 mils dry film thickness per coat.
- C. Concrete Sealed (ECB) Huls Chem-trete PB at a rate of between 50 and 100 SF/gal. Application shall be sufficient to guarantee complete water repelling for five (5) years.

2.08 PATCH COAT FOR GALVANIZED SURFACES SERVICE CONDITION

- A. All galvanized surfaces, which are scratched, marred, or otherwise damaged shall be patched with Scott #692 Aquaseal Latex Surface Conditioner White.

2.09 PRIMER OVER BITUMINOUS COATING

- A. Scott System - Two coats, Scott #931 Encapsulon Surface Tolerant Epoxy Mastic Primer, or approved equal, at 6.0 mils DFT each. Allow bituminous coating to bleed through on first coat. Apply second coat. Third coat shall be Bruning Silathane II 532 Series applied to 2.0 mils dry film thickness.
- B. TNEMEC System - Two coats, TNEMEC Series 66, or approved equal, at 4.0 mils DFT each. Allow bituminous coating to bleed through on first coat. Apply second coat. Third coat shall be TNEMEC Series 73, 5 mils.

2.10 MISCELLANEOUS BURIED FERROUS METAL SURFACES

- A. Scott System - Not Available.
- B. TNEMEC System - All buried valves and other miscellaneous buried ferrous metal surfaces if not factory coated including all-thread restraining rods, after receiving SSPC-SP10 surface preparation and cleaning as previously specified, shall receive not less than two coats of polyamide epoxy coal-tar coating, and shall be TNEMEC Series 46H-413, or approved equal. No prime coat shall be applied under epoxy coal-tar.
- C. Coating thickness shall be from 16 to 20 mils dry-film thickness for the two coat system. Coated surfaces shall be dry before backfilling.

PART 3 - EXECUTION

3.01 MANUFACTURER'S RECOMMENDATIONS

PAINTING AND PROTECTIVE COATINGS

02/05/03

09905-10

- A. Unless otherwise specified herein, the paint and coating manufacturer's printed recommendations and instructions for thinning, mixing, handling, applying, and protection of his coating materials; for preparation of surfaces for coating; and for all other procedures relative to coating shall be strictly observed. No substitutions or other deviations will be permitted without written permission of the Engineer.

3.02 DELIVERY AND STORAGE

- A. Materials shall be delivered in manufacturer's original, sealed containers, with labels and tags intact. Coating materials and equipment shall be stored in designated areas. Coating containers shall be opened only when required for use. Coatings shall be mixed only in designated areas and in the presence of the Engineer, unless otherwise directed. Coatings shall be thoroughly stirred or agitated to uniformly smooth consistency and prepared and handled in a manner to prevent deterioration and inclusion of foreign matter. Unless otherwise specified or approved, no materials shall be reduced, changed, or used except in accordance with the manufacturer's label or tag on container.

3.03 SAFETY REQUIREMENTS

- A. In accordance with the requirements of applicable OSHA Regulations for Construction, the Contractor shall provide and require the use of personal protective equipment for all persons working in or about the project site.
- B. Respirators shall be worn by all persons engaged in, and assisting in, spray painting. In addition, workers engaged in or near the work during sandblasting shall wear eye and face protection devices meeting the requirements of ANSI Z87.1 latest revisions, and approved OSHA Regulations for sand blasting operations and equipment including approved air-purifying, half-mask or mouthpiece respirator with appropriate filter.
- C. Ventilation. Where ventilation is used to control potential exposure to workers as set forth in Section 1910.94 of the OSHA Regulations for Construction, ventilation shall be adequate to reduce the concentration of the air contaminant to the degree that a hazard to the worker does not exist. Methods of ventilation shall meet the requirements set forth in ASNI-Z9.2, latest revision.
- D. Sound Levels. In accordance with Sections 1926.52 and 1926.101 of OSHA Regulations for Construction, whenever the occupational noise exposure exceeds maximum sound levels as set forth in Table D-2 ear protective devices shall be fitted and used, and a continuing, effective hearing conservation program shall be administered.
- E. Cloths and cotton waste that might constitute a fire hazard shall be placed in closed metal containers or destroyed at the end of each work day.

PAINING AND PROTECTIVE COATINGS

02/05/03

09905-11

3.04 STORAGE, MIXING AND THINNING

- A. Paint and coating materials shall be protected from exposure to cold weather, and shall be thoroughly stirred, strained, and kept at a uniform consistency during application. Materials of different manufacturers shall not be mixed together. Packaged materials shall be thinned immediately prior to application in accordance with the manufacturer's directions.

3.05 WORKMANSHIP

- A. Skilled craftsmen and experienced supervision shall be used on all work.
- B. All paint and coatings shall be applied to produce an even film of specified uniform thickness. Edges, corners, crevices, and joints shall receive special attention to ensure that they have been thoroughly cleaned and that they receive an adequate thickness of paint. The finished surfaces shall be free from runs, drops, ridges, waves, laps, brush marks, and variations in color, texture, and finish. The hiding shall be so complete that the addition of another coat of paint would not increase the hiding. All coats shall be applied so as to produce a film of uniform thickness. Special attention shall be given to ensure that edges, corners, crevices, welds, and similar areas receive a film thickness equivalent to adjacent areas, and installations shall be protected by the use of drop cloths or other approved precautionary measures.

3.06 PREPARATION FOR PAINTING AND PROTECTIVE COATING

- A. All surfaces to receive paint and protective coatings shall be cleaned as specified herein prior to application of coating materials. The Contractor shall examine all surfaces to be coated, and shall correct all surface defects before application of any coating material. Beginning the work of this Section without reporting unsuitable conditions to the Engineer constitutes acceptance of conditions by the Contractor. Any required removal, repair, or replacement of this work caused by unsuitable conditions shall be done at no additional cost to the County. All marred or abraded spots on shop-primed and factory-finished surfaces shall receive touch-up restoration prior to any other coating application.
- B. Mildew shall be removed and neutralized by scrubbing affected areas thoroughly with a solution made by adding two (2) ounces of tri-sodium phosphate and eight (8) ounces of sodium hypochlorite to one (1) gallon warm water. Use a scouring powder, if necessary, to remove mildew spores. Rinse with clean water and allow to dry thoroughly before painting.

3.07 ITEMS NOT TO BE COATED

- A. Hardware, anodized aluminum, stainless steel, switch and receptacle plates, escutcheons, hardware accessories, nameplate data tags, machined surfaces and

PAINTING AND PROTECTIVE COATINGS

02/05/03

similar items in contact with coated surfaces and not to be coated shall be removed or masked prior to surface preparation and painting operations. Following completion of coating of each piece, removed items shall be reinstalled. Workmen skilled in trades involved shall do such removal and installation.

3.08 SANDBLASTING

- A. All sandblasting shall be done in strict accordance with the referenced specifications of the Steel Structures Painting Council.
- B. When items are to be shop primed or shop primed and finish coated in the shop, surface preparation shall be as specified in this Section. The County or his representative shall have the right to witness, inspect, and reject any sandblasting done in the shop.
- C. When sandblasting is done in the field, care shall be taken to prevent damage to structures and equipment. Pumps, motors, and other equipment shall be shielded, covered, or otherwise protected to prevent the entrance of sand. No sandblasting may begin before the Engineer inspects and approves the protective measures.
- D. After sandblasting, dust and spent sand shall be removed from the surfaces by brushing or vacuum cleaning.

3.09 APPLICATION OF PROTECTIVE COATINGS

- A. Shop Coating. Fabricated metalwork and equipment, which requires coating shall be shop-primed with specified primer. Any such work delivered to the job site with any other shop coat shall either have this coating removed or shall be recoated with "universal-primer", and the specified coating applied in the field. Manufactured equipment with approved corrosion resistant factory finishes and galvanized finishes shall be exempt from this requirement.
- B. Application of Field Coatings.
 - 1. Except where in conflict with the manufacturer's printed instructions, or where otherwise specified herein, the Contractor may use brush, roller, air spray, or so-called airless spray application; however, any spray painting must first have a short nap. Brushing or other suitable means shall coat areas inaccessible to spray coating or rolling.
 - 2. The Contractor shall give special attention to the work to ensure that edges, corners, crevices, welds, bolts, and other areas, as determined by the Engineer, receive a film thickness at least equivalent to that of adjacent coated surfaces.

3. Prime coat shall be applied to all clean surfaces within a four hour period of the cleaning, and prior to deterioration or oxidation of the surface, and in accordance with the manufacturer's recommendations. Drift from sandblasting procedures shall not be allowed to settle on freshly painted surfaces.
 4. All coatings shall be applied in dry and dust-free environment. No coating or paint shall be applied when the surrounding air temperature, measured in the shade, is below 40 degrees F. No coating or paint shall be applied to wet or damp surfaces and shall not be applied in rain, fog or mist, or when the relative humidity exceeds 90 percent. No coating or paint shall be applied when it is expected that the relative humidity will exceed 90 percent or that the air temperature will drop below 40 degrees F within 8 hours after the application of the coating or paint. Dew or moisture condensation should be anticipated and if such conditions are prevalent, coating or painting shall be delayed to be certain that the surfaces are dry. The day's coating or painting shall be completed well in advance of the probable time of day when condensation will occur, in order to permit the film sufficient drying time prior to the formation of moisture.
 5. Each coat shall be applied evenly, at the proper consistency, and free of brush marks, sags, runs, and other evidence of poor workmanship. Care shall be exercised to avoid lapping paint on glass or hardware. Coatings shall be sharply cut to lines. Finished coated surfaces shall be free from defects or blemishes. Protective coverings shall be used to protect floors, fixtures, and equipment. Care shall be exercised to prevent paint from being spattered onto surfaces from which such paint cannot be removed satisfactorily. Surfaces from which paint cannot be removed satisfactorily shall be painted or repainted as required to produce a finish satisfactory to the Engineer. Whenever two (2) coats of a dark colored paint are specified, the first coat shall contain sufficient powdered aluminum to act as an indicator of proper coverage, or the two (2) coatings shall be of a contrasting color.
 6. Touch-up of all surfaces shall be performed after installation.
- C. Time of Coating.
1. Sufficient time shall be allowed to elapse between successive coats to permit satisfactory recoating, but, once commenced, the entire coating operation shall be completed without delay. No additional coating of any structure, equipment, or other items designated to be painted shall be undertaken without specified permission of the Engineer until the previous coating has been completed for the entire structure, piece of equipment, or other items.

02/05/03

PAINING AND PROTECTIVE COATINGS

09905-14

2. Piping shall not be finish coated until it has been pressure tested and approved.

3.10 TESTING AND INSPECTION

- A. Inspection Devices. The Contractor shall furnish, until final acceptance of coating and painting, inspection devices in good working condition for detection of holidays and measurement of dry-film thickness of coatings and paints. The Contractor shall also furnish U.S. Department of Commerce, National Bureau of Standards certified thickness calibration plates to test accuracy of dry-film thickness gauge and certified instrumentation to test accuracy. Dry-film thickness gauges shall be made available for the Engineer's use at all times until final acceptance of application.
- B. The Contractor shall conduct film thickness measurements and electrical inspection of the coated surfaces with equipment furnished by him and shall recoat and repair as necessary for compliance with the Specifications.
- C. After repaired and recoated ferrous metals areas have cured, final inspection tests will be conducted by the Engineer with equipment provide by the Contractor. Coating thickness specified in mils on ferrous substrates will be measured with a nondestructive magnetic type dry-film thickness gauge such as the Elecometer, manufactured by Gardner Laboratories, Inc. Discontinuities, voids, and pinholes in the coatings will be determined with a nondestructive type electrical holiday detector. Epoxy coatings and other thin film coatings will be checked for discontinuities and voids with a low voltage detector of the wet-sponge type, such as Model M1 as manufactured by Tinker and Rasor. Use a non-sudsing type wetting agent, such as Kodak Photo-Flo, which shall be added to the water prior to wetting the sponge. A high voltage, low current, spark type detector such as Model EP, manufactured by Tinker and Rasor, will be used for electrical inspection of only coal tar enamel. Tape type coatings will be inspected for holidays using a device designed for use in detecting such flaws. All pinholes shall be marked, repaired in accordance with the manufacturer's printed recommendations and retested. No pinholes or other irregularities will be permitted. Film thickness discrepancies shall be measured and verified with a micrometer or other approved measuring instrument with 5 readings taken every 100 square feet of painted surface. Coatings not in compliance with the Specifications will not be acceptable and shall be replaced, and reinspected at Contractor's expense until the Specifications are met.
- D. On nonferrous surfaces, dry film thickness readings shall be taken at random locations with a Tooke Gauge at the rate of approximately five readings per 100 square feet of surface. Grooves cut into coatings shall be repaired by application of all coats of paint or coating film being tested. The average of all readings for a given area or surface shall be within require dry film thickness range and no individual reading shall be more than 20 percent below the recommended dry film

PAINTING AND PROTECTIVE COATINGS

02/05/03

09905-15

thickness. Any areas that are found to be below standard shall be marked and recoated to obtain proper film thickness.

3.11 CLEAN-UP

- A. Upon completion of the work, staging, scaffolding, dropcloths, and containers shall be removed from the site or destroyed in an approved manner. Paint spots, oil, or stains upon adjacent surfaces shall be removed.
- B. The Contractor shall clean the site in accordance with Division 1.

TABLE I

COATING SYSTEM SCHEDULE

Item	Service Condition
All exposed ferrous and galvanized metal piping and equipment (interior and exterior)	B
All submerged, intermittently submerged or corrosive atmosphere installed ferrous metals (e.g. in tanks, wetwells).	A
Aluminum and nonferrous metals in corrosive atmosphere and exposed to condensation.	C
All exposed PVC pipe (interior and exterior).	D
Interior of manholes.	E
Guard posts (bollards) and hydrants.	B
Interior and exterior concrete block walls	CBW
All interior concrete floors, troughs and curbs.	ECB

02/05/03

PAINTING AND PROTECTIVE COATINGS

09905-16

TABLE II**COATING COLOR SCHEDULE**

TNEMEC		
<u>Mechanical Equipment</u>	<u>Colors</u>	<u>Scott</u>
Interior/exterior equipment not submerged	To match process piping	SP-101
Interior/exterior equipment submerged	Black	
Diesel Fuel Lines	Yellow SC01	SP-106
<u>Above ground piping</u>		
Water	Safety Blue SC06	SP108
Wastewater piping	Malachite Green PL19	SP-110
Reuse piping	Pantone Purple BEHR 522-L	SP-112
Fire hydrant Assembly	New Lime Yellow	SP-115
Electrical Equipment Conduit	Gray IN05	SP-118
<u>Miscellaneous</u>		
Guard posts (Bollards)	Safety Yellow SC01	SP-106

Note: Under all circumstances, the Sarasota County Operators will decide finish coat shading to match the existing color scheme of the plant.

END OF SECTION

02/05/03

PAINTING AND PROTECTIVE COATINGS

09905-17

SECTION 12000

**STORM WATER MANAGEMENT
FOR CONSTRUCTION ACTIVITIES**

I. Developing Pollution Prevention Plans and Best Management Practices:

Attached Summary Guidance from the United States Environmental Protection Agency:

EPA Storm Water Management for Construction Activities

Developing
Pollution Prevention Plans
and Best Management
Practices

SUMMARY GUIDANCE

FORWARD

This booklet provides summary guidance on the development of Storm Water Pollution Prevention Plans and identification of appropriate Best Management Practices (BMPs) for construction activities. It provides technical assistance and support for construction activities subject to pollution prevention requirements established under National Pollutant Discharge Elimination System (NPDES) permits for storm water point source discharges.

EPA's storm water program significantly expands the scope and application of the existing NPDES permit system for municipal and industrial process wastewater discharges. It emphasizes pollution prevention and reflects a heavy reliance on BMPs to reduce pollutant loadings and improve water quality. This booklet provides summary guidance in both of these areas.

The document summarized here was issued in support of EPA regulations and policy initiatives involving the development and implementation of a National storm water program. The document is Agency guidance only. It does not establish or affect legal rights or obligations. Agency decisions in any particular case will be made applying the laws and regulations on the basis of specific facts when permits are issued or regulations promulgated.

The document and this booklet will be revised and expanded periodically to reflect additional pollution prevention information and data on treatment effectiveness of BMPs. Comments from users will be welcomed. Send comments to U.S. EPA, Office of Wastewater Enforcement and Compliance, 401 M Street, SW, Mail Code EN-336, Washington DC, 20460.

Construction Guidance Executive Summary

Table of Contents

	<u>Page</u>
Overview of Pollution Prevention Plan Requirements	1
Figure - Six Phases for Developing and Implementing Construction Storm Water Pollution Prevention Plans.....	2
Site Evaluation and Design Development Phase	3
(A) Collecting Site Information	3
(B) Develop Site Plan Design	3
(C) Describe Construction Activity	4
(D) Prepare Pollution Prevention Site Map	4
Assessment Phase	5
(A) Measure the Site Area	5
(B) Determine the Drainage Areas.....	5
(C) Calculate the Runoff Coefficient	5
Table 1. Typical 'C' Values	6
Control Selection/Plan Design Phase	7
(A) Review and Incorporate State and Local Requirements.....	7
(B) Select Erosion and Sediment Controls	7
(C) Select Other Controls.....	8
(D) Select Storm Water Management Controls	9
(E) Indicate the Location of Controls on the Site Map	9
(F) Prepare an Inspection and Maintenance Plan.....	9
(G) Prepare a Description of Controls	10
(H) Prepare a Sequence of Major Activities	10
Certification and Notification Phase	11
(A) Certify the Pollution Prevention Plan.....	11
(B) Submit a Notice of Intent.....	11
Construction/Implementation Phase	13
(A) Implement Controls	13
(B) Inspect and Maintain Controls.....	13
(C) Maintain Records of Construction Activities	14
(D) Update/Change the Plan	14
(E) Report Releases of Reportable Quantities	14
(F) Provide for Plan Location and Access	14
Final Stabilization/Termination Phase	16

Construction Guidance Executive Summary

Table of Contents (continued)

	<u>Page</u>
Other References.....	17
Construction General Permit Requirements Preconstruction Checklist.....	18
Construction/Implementation Checklist.....	19
Final Stabilization/Termination Checklist	20
Erosion and Sediment Control Selection Checklist	21
Model Plan	22

A BRIEF GUIDE TO REQUIREMENTS FOR DEVELOPING AND IMPLEMENTING POLLUTION PREVENTION PLANS FOR CONSTRUCTION ACTIVITIES

Storm water runoff is part of the natural hydrologic cycle. However, human activities, particularly urbanization, can alter natural drainage patterns and add pollutants to the rainwater and snowmelt that run off the earth's surface and enter our Nation's rivers, lakes, streams, and coastal waters. In fact, recent studies have shown that storm water runoff is a major source of pollutants impairing our sport and commercial fisheries, restricting swimming, and affecting the navigability of many of our Nation's waters.

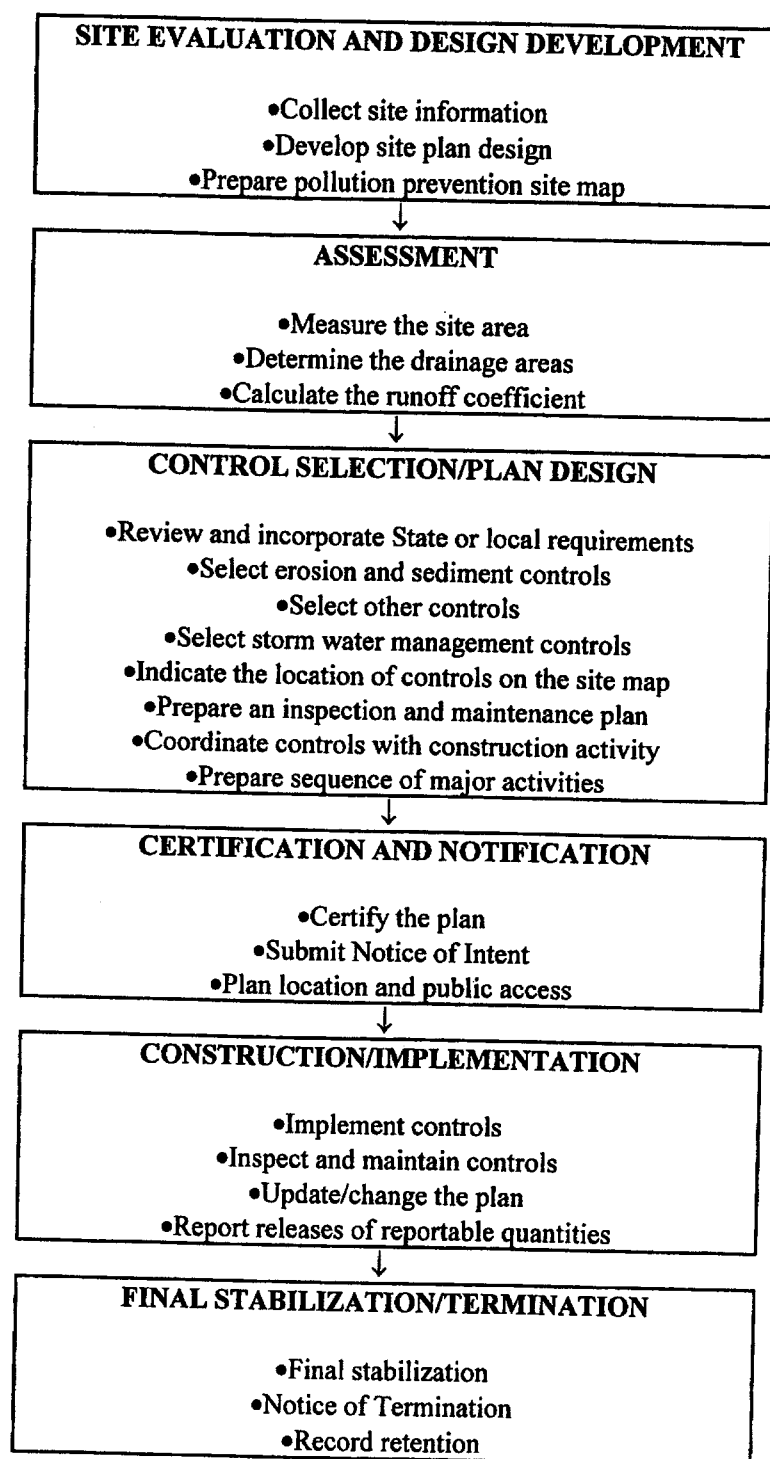
Recognizing the importance of this problem, Congress directed the U.S. Environmental Protection Agency (EPA) to develop a Federal program under the Clean Water Act to regulate certain high priority storm water sources. The issuance of storm water discharge permits under the National Pollutant Discharge Elimination System (NPDES) is a major part of the Agency's efforts to restore and maintain the Nation's water quality. Discharges of storm water runoff from construction sites which disturb five or more acres of land must now be covered by an NPDES permit. To deal with the thousands of construction projects which are now required to be covered by storm water permits, EPA strongly encourages the use of General Permits. Under the NPDES program, a General Permit authorizes discharges from construction sites located in the States and territories that have not been delegated NPDES permitting authority, EPA issued NPDES General Permits for Storm Water Discharges from Construction sites in the September 9 and 25, 1992, Federal Register (a complete list of these States and territories to which EPA's permits apply may be found on page 17 of this document).

The purpose of this document is to describe the steps which must be completed in order for a construction site to comply with the Pollution Prevention Plan requirements contained in EPA's General Permits. A detailed manual on how to develop and implement your Pollution Prevention Plan is available from the National Technical Information Service (NTIS). The manual, *Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices*, provides much more specific information than this brief guide. Instructions for ordering the detailed manual and a listing of other references that you may find useful can be found on page 17 of this guide. It is important to note that permit requirements will vary from State to State and permit to permit; therefore, you should read your permit carefully.

OVERVIEW OF POLLUTION PREVENTION PLAN REQUIREMENTS

Under the *NPDES General Permits for Storm Water Discharges from Construction Sites*, EPA requires the development and implementation of a Pollution Prevention Plan. A Pollution Prevention Plan for construction is designed to reduce pollution at the construction site, before it can cause environmental problems. Many of the practices and measures required for the Pollution Prevention Plan represent standard operating procedure at many construction sites. Storm water management controls, erosion and sediment controls, inspection and maintenance have all been used at a number of construction projects.

This guide is organized according to the phases of the pollution prevention planning and implementation process. A set of checklists and a model plan at the end of the document are provided to further clarify requirements. As shown on the chart on the following page, pollution prevention planning requirements have been organized to provide you with a step-by-step process for ensuring that pollutants are not making their way into the storm water discharges from your site. The six major phases of the process are (1) site evaluation and design development, (2) assessment, (3) control selection and plan design, (4) certification and notification, (5) construction/implementation, and (6) final stabilization/termination. In addition, all permit holders must meet a number of general requirements.



**SIX PHASES FOR DEVELOPING AND IMPLEMENTING CONSTRUCTION STORM
WATER POLLUTION PREVENTION PLANS**

SITE EVALUATION AND DESIGN DEVELOPMENT PHASE

The first phase in preparing a Storm Water Pollution Prevention Plan for a construction project is to define the characteristics of the site and the type of construction that will be occurring. This phase is broken down into four requirements: (A) collect site information, (B) develop site design, (C) describe construction activity, and (D) prepare pollution prevention site map.

(A) Collect Site Information

Prior to design, it is necessary to collect information about the existing conditions at the construction site. The EPA General Permits require that the Pollution Prevention Plan include the following information:

- Existing soils information - Where information exists which describes the soils at the construction site, this data must be included in the Pollution Prevention Plan. Soils data may include soil type, depth of the soil layer, soil texture, infiltration (percolation rate), or whether the soils are susceptible to erosion. Sources of soils information could include soil borings or other geotechnical investigations. Soil Conservation Service (SCS) soil surveys may also be used, and SCS surveys typically indicate whether a soil is erodible.
- Existing runoff water quality - If storm water runoff from the proposed construction site has been sampled and analyzed for the presence of any pollutant (e.g., total suspended solids), then the results of the analyses must be included in the Pollution Prevention Plan. In most cases, existing runoff water quality data are not available for a specific site, particularly an undeveloped site. However, if the construction site is on or adjacent to an existing industrial facility, that facility may have collected runoff water quality data to satisfy another permit. If there are no existing data on the quality of runoff from the site, then it is not necessary to collect or analyze storm water samples for the Construction General Permit. Runoff water quality data may sometimes be available from your State or local government (e.g., the local municipal separate storm sewer authority). You may also be able to obtain runoff water quality information from the U.S. Geological Survey (USGS), State, or local watershed protection agencies.
- Location of surface waters on the construction site - If the construction site includes or is adjacent to surface waters, then the location and extent of the surface waters must be determined so that they may be indicated on the pollution prevention site map. Surface waters include lakes, rivers, streams (both perennial and intermittent), and wetlands.
- Name of receiving water - Identify the name and location of the body of water (e.g., stream, creek, run, wetland, river, lake, bay, ocean) that will receive the runoff from the construction site. If the receiving water is a tributary, include the name of the ultimate receiving body of water, if possible. If the site drains into a Municipal Separate Storm Sewer System, identify the system and indicate the receiving water to which the system discharges. This information is usually available from county, State, or USGS maps.

(B) Develop Site Plan Design

Once the information on the existing site conditions is collected, it is possible to develop a site plan design. In addition to the goals and objectives for the facilities being constructed, the designers should also consider objectives which will limit the amount of pollution in storm water runoff from the construction site, such as:

- Disturb the smallest area possible.
- Avoid disturbance of sensitive areas, such as:
 - Steep and/or unstable slopes
 - Surface waters, including wetlands
 - Areas with soils susceptible to erosion
 - Existing drainage channels
- Identify areas to be preserved or left as open space.

(C) Describe Construction Activity

In preparing your plan, you must (1) describe the purpose or goal of the construction project (e.g., a single family residential development, a multi-story office building, or a highway interchange) and (2) list the soil disturbing activities necessary to complete the project. (Soil disturbing activities might include clearing, excavation and stockpiling, rough grading, final or finish grading, preparation for seeding or planting, excavation of trenches, demolition, etc.).

(D) Prepare Pollution Prevention Site Map

The final step of the site evaluation and design development phase is to combine the information collected into a comprehensive pollution prevention site map. The starting point for the pollution prevention site map should be the site plan prepared for the construction design. The map for the construction site should be drawn to scale with topography. The scale of the map should be small enough so that you can easily distinguish important features, such as drainage swales and control measures that will be added later. In addition to the location of surface waters, the following information must be included on the site map:

- Slopes after grading - Indicate what the location and steepness of slopes will be after grading
- Disturbed areas - Indicate the areas of soil disturbing activities or the total area of the site where soil will be disturbed. Also, draw an outline of areas that will not be disturbed.
- Drainage patterns/discharge points - Indicate the drainage patterns of the site after the major grading activities and the location of the points where storm water will discharge from the site.
 - To illustrate the drainage pattern of the site, use topographic contour lines or arrows to indicate the direction runoff will flow.
 - Show the location of swales or channels. If there is a new or proposed underground storm drain system on the site, this should be indicated on the Storm Water Pollution Prevention Plan site map as well.

ASSESSMENT PHASE

Once the characteristics of the site and the construction have been defined, the next phase in developing a Storm Water Pollution Prevention Plan is to measure the size of the land disturbance and estimate the impact the project will have on storm water runoff from the site based on information collected in Phase 1. Three things should be done to assess the project: (A) measure the site area, (B) measure the drainage areas, and (C) calculate the runoff coefficient.

(A) Measure the Site Area

The General Permit requires that you indicate in the Storm Water Pollution Prevention Plan estimates of the total site area and the area that will be disturbed. The total site area estimate must represent the size of the parcel of property or right-of-way on which the construction is occurring. The disturbed area estimate must represent the portion of the total site area which will be disturbed over the course of the construction project. These values can be measured from the pollution prevention site map which is drawn to scale.

(B) Determine the Drainage Areas

Although the size of each drainage area for each joint where concentrated flow will leave the site is not required to be included in the Pollution Prevention Plan, this information will help you select and design the sediment control and storm water management measures for your project in the next phase of the plan. Drainage areas are portions of the site where runoff will flow in one particular direction or to a particular discharge point. Use the drainage patterns indicated on the site map to determine the drainage areas.

(C) Calculate the Runoff Coefficient

The General Permit requires that you estimate the runoff coefficient of the site after construction is complete. The runoff coefficient is an estimate of the fraction of total rainfall that will appear as runoff. For example, the "c" value of lawn area is 0.2, which indicates that only 20% of the water that falls on grassed areas will end up as surface runoff. In contrast, the "c" value of a paved area can be 0.9 or higher, indicating that 90% of the rain falling on this type of surface will run off. Runoff coefficients for sites with more than one land use are estimated by calculating a weighted average (based upon area) of the runoff coefficients for each land use. Table 1 lists runoff coefficients for various land uses.

DESCRIPTION OF AREA	RUNOFF COEFFICIENTS
Business	
Downtown Areas	0.70-0.95
Neighborhood Areas	0.50-0.70
Residential	
Single-family areas	0.30-0.50
Multi-units, detached	0.40-0.60
Multi-units, attached	0.60-0.75
Residential (suburban)	0.25-0.40
Apartment dwelling areas	0.50-0.70
Industrial	
Light areas	0.50-0.80
Heavy areas	0.60-0.90
Parks, cemeteries	0.10-0.25
Playgrounds	0.20-0.35
Railroad yard areas	0.20-0.40
Unimproved areas	0.10-0.30
Streets	
Asphalt	0.70-0.95
Concrete	0.80-0.95
Brick	0.70-0.85
Drives and walks	0.75-0.85
Roofs	0.75-0.95
Lawns, coarse textured soil (greater than 85% sand) - Slope	
Flat, 2%	0.05-0.10
Average, 2-7%	0.10-0.15
Steep, 7%	0.15-0.20
Lawns, fine textured soil (greater than 40% clay) - Slope	
Flat, 2%	0.13-0.17
Average, 2-7%	0.18-0.22
Steep, 7%	0.25-.035

CONTROL SELECTION/PLAN DESIGN PHASE

After you have collected the information and made measurements, the next phase is to design a plan to prevent and control pollution of storm water runoff from your construction site. To complete the Storm Water Pollution Prevention Plan, (A) review and incorporate State and local requirements, (B) select erosion and sediment controls, (C) select other controls, (D) select storm water management controls, (E) indicate the location of controls in the site map, (F) prepare an inspection and maintenance plan, (G) prepare a description of controls, and (H) prepare a sequence of major activities. The following subsections explain how the controls you select should be described in the Storm Water Pollution Prevention Plan.

(A) Review and Incorporate State and Local Requirements

If the construction site is located in a State or municipality which implements its own separate storm water management or erosion and sediment control program, then the Pollution Prevention Plan prepared for compliance with EPA's NPDES General Permit must also comply with the State or local requirements. Therefore, prior to designing the Pollution Prevention Plan, you must first determine what requirements, if any, exist for sediment and erosion site plans, site permits or storm water management site plans, or site permits. Where these requirements do exist, then they must be carefully reviewed and incorporated into the plan design.

Consideration of State and local requirements in the plan design phase is necessary because the permit requires that the permittee provide a certification that the Pollution Prevention Plan reflects the requirements applicable to protecting surface water resources in sediment and erosion site plans or permits, or storm water management site plans or site permits approved by State or local officials.

(B) Select Erosion and Sediment Controls

The Storm Water Pollution Prevention Plan must include a description of the measures to be used for erosion and sediment controls throughout the construction project. These controls include stabilization measures for disturbed areas and structural controls to divert runoff and remove sediment. Erosion and sediment controls are implemented during the construction period to prevent and/or control the loss of soil from the construction site into the receiving waters. Your selection of the most appropriate erosion and sediment controls depends on a number of factors, but is most dependent on site conditions. The information collected in the site evaluation, design, and assessment phases is used to select controls. Some controls are discussed below:

- Stabilization - Under the EPA's General Permit, disturbed areas of the construction site that will not be redisturbed for 21 days or more must be stabilized by the 14th day after the last disturbance. Stabilization measures include the following:
 - Temporary seeding - Temporary seeding is the planting of fast-growing grasses to hold down the soils in disturbed areas so that they are less apt to be carried off-site by storm water runoff or wind.
 - Permanent seeding - Permanent seeding is the use of permanent vegetation (grass, trees, or shrubs) to stabilize the soil by holding soil particles in place.
 - Mulching - Mulching is the placement of material such as hay, grass, wood chips, straw, or gravel, on the soil surface to cover and hold in place disturbed soils. (Mulching often accompanies seeding.)

The EPA General Permit requires that the Pollution Prevention Plan include structural practices to divert flows away from disturbed areas, to store flows, or to limit the discharge of pollutants from the site. The following is a list of some of the practices which may be used.

- **Structural control measures**

- **Earth dike** - An earth dike is a mound of stabilized soil which is constructed to divert runoff. Earth dikes may be used to either divert uncontaminated runoff away from disturbed areas or to divert contaminated runoff into a sediment basin or sediment trap.
- **Silt fence** - A silt fence is a temporary measure consisting of posts with filter fabric stretched across the posts and, sometimes, with a wire support fence. The fence is installed along the downslope or sideslope of a disturbed area. Runoff passes through the openings in the fabric, while sediment is trapped on the uphill side.
- **Sediment trap** - A sediment trap is formed by excavating a pond or by placing an earthen embankment across a low area or drainage swale. It has an outlet or spillway made of large stones or aggregate. The trap retains the runoff long enough to allow the silt to settle out.
- **Sediment basin** - A sediment basin is a settling pond with a controlled water release structure (e.g., a riser and pipe outlet with a gravel filter) which slows the release of runoff. The basin detains sediment-laden runoff from larger drainage areas long enough for most of the sediment to settle out.

The EPA General Permit requires that, where it is attainable, a temporary or permanent sediment basin be installed in any drainage location where more than ten acres in the upstream drainage area are disturbed at one time. The sediment basin must provide at least 3,600 cubic feet of storage for every acre of land which it drains (flows from upland areas that are undisturbed may be diverted around the basin). For drainage locations with ten or fewer disturbed acres, sediment traps, filter fences, or equivalent measures must be installed along the downhill boundary of the construction site.

(C) Select Other Controls

In addition to erosion and sediment controls, the Pollution Prevention Plan for your project must address the other potential pollutant sources that may exist on a construction site. These controls include proper disposal of construction site waste disposal, compliance with applicable State or local waste disposal, sanitary sewer or septic system regulations, control of off-site vehicle tracking, and control of allowable non-storm water discharges, as explained in the following:

- Ensure proper disposal of construction site waste materials.
- Treat or dispose of sanitary wastes that are generated on-site in accordance with State or local requirements. Contact the local government or State regulatory agency.
- Prevent off-site tracking of sediments and generation of dust. Stabilized construction entrances or vehicle washing racks should be installed at locations where vehicles leave the site. Where dust may be a problem, implement dust control measures, such as irrigation.
- Identify and prevent contamination of non-storm water discharges. Where non-storm water discharges allowed by the General permit exist, they must be identified and steps must be taken to prevent contamination of these discharges.

(D) Select Storm Water Management Controls

Storm water management controls are constructed to prevent or control pollution of storm water after the construction is completed. The General Permit requires that the Pollution Prevention Plan include a description of the measures that will be installed to control pollutants in storm water after construction is complete. For sites in which the development results in runoff flows that are higher than pre-construction levels, the Pollution Prevention Plan must include a technical explanation of why a particular storm water management measure was selected. These controls include, but are not limited to, one or more of the following:

- Retention pond - A pond that holds runoff in a reservoir without release except by means of evaporation, infiltration, or emergency bypass.
- Detention pond - A pond that holds or detains runoff in a basin for a limited time, releasing it slowly to allow most of the sediments to drop out.
- Infiltration measures - Measures that allow the percolation of water through the ground surface into subsurface soil. Specific measures include infiltration trenches, basins, and dry wells.
- Vegetated swales and natural depressions - Grass-lined ditches or depressions that transport runoff, filter sediments from the runoff, and enhance infiltration of the runoff.

Selection of the most appropriate storm water management measures depends upon a number of factors associated with site conditions. EPA expects that most sites can employ measures to remove 80% of the total suspended solids from post-construction runoff. When you select storm water management measures for a development project, consider the impacts of these measures on other environmental media (e.g., land, air, and ground water).

IN addition to pollutant removal, the storm water management portion of the plan must address velocity dissipation at discharge locations. Development usually means an increase in speed with which the site will drain because of the addition of paved areas, storm sewers, curbs, gutters, etc. The General Permit requires that velocity dissipation devices be placed along the length of any outfall where the discharge from the developed area may erode the channel. The potential for erosion is primarily dependent upon the velocity of the storm water discharge and the type of material that lines the channel. One velocity dissipation device is riprap outlet protection, which is stone or riprap placed at the discharge point to reduce the speed of concentrated storm water flows.

(E) Indicate the Location of Controls on the Site Map

Pollution prevention measures must be shown on the pollution prevention site map, including the location of each measure used for erosion and sediment control, storm water management, and other controls. When this has been done, the site map is ready to be included in the Pollution Prevention Plan. Note: It may not be feasible to indicate some controls on the site map (e.g., waste control measures).

(F) Prepare an Inspection and Maintenance Plan

After the Storm Water Pollution Prevention Plan is prepared and the necessary controls are installed, you will be responsible for inspecting and maintaining them. The General Permit requires that you prepare a description of the procedures to maintain the pollution prevention measures on-site. An inspection and maintenance checklist for each of the control measures proposed for the construction site should be included in the Storm Water Pollution Prevention Plan prior to starting construction.

(G) Prepare a Description of Controls

Once you have finished planning your construction activities and selected the controls, make a list of each type of control you plan to use on the site. Include a description of each control, describe its purpose, and explain why it is appropriate in this location. The description should also include specific information about the control, such as size, required materials, and methods of installation/use. Read your permit carefully to ensure that your plan includes all of the required controls.

(H) Prepare a Sequence of Major Activities

You must prepare a sequence of major activities that includes the installation of all the controls, earth disturbing activities, all stabilization activities, and the maintenance required for the controls. The sequence should clearly indicate the order in which each of the activities described takes place. Several general principles are helpful in developing the sequence of major activities:

- Install downslope and sideslope perimeter controls before the land disturbing activity occurs.
- Do not disturb an area until it is necessary for construction to proceed.
- Cover or stabilize disturbed areas as soon as possible.
- Time construction activities to limit impact from seasonal climate changes to weather events.
- Delay construction of infiltration measures until the end of the construction project when upstream drainage areas have been stabilized.
- Do not remove temporary perimeter controls until after all upstream areas are finally stabilized.

**CERTIFICATION AND
NOTIFICATION PHASE**

Once the site description and controls portion of the Storm Water Pollution Prevention Plan have been prepared, you now must (A) certify the Pollution Prevention Plan, and (B) submit a Notice of Intent to the appropriate agency. The checklist provided at the end of this document will be very useful in evaluating whether all the required items are included in your Storm Water Pollution Prevention Plan prior to certifying the plan or submitting a Notice of Intent.

(A) Certify the Pollution Prevention Plan

Once a Pollution Prevention Plan is prepared, the EPA General Permit requires that the plan be certified. The plan should identify an authorized representative for each operator to sign the plan. The authorized representative must be someone at or near the top of the management chain, such as the president, vice president, or a general partner, who has been delegated the authority to sign and certify this type of document. In signing the plan, the authorized representative certifies that the information is true and assumes liability for the plan. Note that Section 309 of the Clean Water Act provides for significant penalties where information is false or the permittee violates, either knowingly or negligently, permit requirements.

In addition to the party or parties considered to be operators, construction activities often have a number of different short-term contractors and subcontractors coming on-site during each phase of the project development. The EPA General Permit requires that the contractors and subcontractors responsible for implementing measures in the Pollution Prevention Plan be listed in the plan with measures for which they are responsible and that they sign a certification statement that they understand the permit requirements.

(B) Submit a Notice of Intent

The General Permit for Storm Water Discharges Associated with Industrial Activity from Construction Activities requires that you submit a Notice of Intent (NOI) at least two days before construction activities begin. The NOI is essentially an application and contains important information about your site, including site location, owner information, operator (general contractor) information, receiving water(s), existing NPDES Permit Number (if any), an indication of existing quantitative data, and a brief description of the project.

EPA has developed a one-page form to be used by industrial facilities and construction activities when they submit NOIs. This form indicates all the information that you are required to provide and must be used in order for the NOI to be processed correctly. NOIs for the EPA General permit will be submitted directly to EPA's central processing center at the following address:

**Storm Water Notice of Intent
Post Office Box 1215
Newington VA 22122**

Each party or each of the parties who have day-to-day responsibilities for site operations, and each party or each of the parties who have control over the designs and specifications necessary to ensure compliance with plan requirements and permit conditions, must submit an NOI. It is anticipated that there will be projects where more than one entity (e.g., the owner, developer, or general contractor) will need to submit

an NOI so that both of the requirements for an operator are met. In this case, those persons will become co-permittees.

Deadlines - There are different deadlines for submitting NOIs depending on whether the construction starts before or after October 1, 1992:

- **Before October 1, 1992:** For construction activities that have started before October 1, 1992, and plan to continue beyond this date, the NOI must be submitted on or before October 1, 1992.
- **After October 1, 1992:** If construction will not begin until after October 1, 1992, an NOI must be postmarked at least two days before construction begins.
- **The Storm Water Pollution Prevention Plan** must be completed prior to the submittal of an NOI.

CONSTRUCTION/ IMPLEMENTATION PHASE

Once you have prepared a Storm Water Pollution Prevention Plan and filed a Notice of Intent, you may start construction of the project as early as two days after the NOI is postmarked. However, you have not yet met all requirements of your permit. You must now do the things that you said you would do in the Storm Water Prevention Plan: (A) implement the controls, (B) inspect and maintain the controls, (C) maintain records of construction activities, (D) update/change the plan to keep it current, (E) take proper action when there is a reportable quantity spill, and (F) have plans accessible.

(A) Implement Controls

The first action that should be taken is to construct or perform the controls that were selected for the Storm Water Pollution Prevention Plan. The controls should be constructed or applied in accordance with State or local specifications. If there are no State or local specification for control measures, then the controls should be constructed in accordance with good engineering practices. The controls must be constructed in the order indicated in the sequence of major activities. Stabilization measures must be applied within the time frame specified in the permit.

To ensure that controls are adequately implemented, it is important that the work crews who install the measures are experienced and/or adequately trained. Improperly installed controls can have little or no effect and may actually increase the pollution of storm water. It is also important that all other workers on the construction site be made aware of the controls so that they do not inadvertently disturb or remove them.

(B) Inspect and Maintain Controls

As discussed previously, inspection and maintenance of the protective measures that are part of this plan are as important to pollution prevention as proper planning, design/selection, and installation.

- **Inspection** - The EPA General Permit requires inspection every seven days, or within 24 hours of a storm of 0.5 inches or more in depth. All disturbed areas of the site, areas for material storage, locations where vehicles enter or exit the site, and all of the erosion and sediment controls that were identified as part of the plan must be inspected. Controls must be in good operating condition until the area they protect has been completely stabilized and the construction activity is complete.
- **Maintenance/repairs** - The inspector must record any damages or deficiencies in the control measures on an inspection report form provided for this purpose. These reports document the inspection of the pollution prevention measures. These same forms can be used to request maintenance and repair and to prove that inspection and maintenance were performed. The operator should correct damage or deficiencies as soon as practicable after the inspection but in no case later than seven days after the inspection. Any changes that may be required to correct deficiencies in the Storm Water Pollution Prevention Plan should also be made as soon as practicable after the inspection, but in no case later than seven days after the inspection.

(C) Maintain Records of Construction Activities

In addition to the inspection and maintenance reports, the operator should keep records of the construction activity on the site. In particular, the operator should keep a record of the following information:

- The dates when major grading activities occur in a particular area.
- The dates when construction activities cease in an area, temporarily or permanently.
- The dates when an area is stabilized, temporarily or permanently.

These records can be used to make sure that areas where there is no construction activity will be stabilized within the required time frame.

(D) Update/Change the Plan

For a construction activity to be in full compliance with its NPDES Storm Water Permit, and for the Storm Water Pollution Prevention Plan to be effective, the plan must accurately reflect site features and operations. When it does not, the plan must be changed. The plan must also be changed if the operator observes that it is not effective in minimizing pollutant discharge from the site.

If, at any time during the effective period of the permit, the permitting authority finds that the plan does not meet one or more of the minimum standards established by the General Permit, the permitting authority will notify the permittee of required changes necessary to bring the plan up to standard.

(E) Report Releases of Reportable Quantities

Because construction activities may handle certain hazardous substances over the course of the project, spills of these substances in amounts that equal or exceed reportable quantity (RQ) levels are a possibility. EPA has issued regulations that define what RQ levels are for oil and hazardous substances. These regulations are found at 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302. If there is an RQ release during the construction period, then you must take the following steps:

- Notify the National Response Center immediately at 800-424-8802; in Washington DC, call 202-426-2675.
- Within 14 days, submit a written description of the release to the EPA regional office providing the date and circumstances of the release and the steps to be taken to prevent another release.
- Modify the Pollution Prevention Plan to include the information listed above.

(F) Provide for Plan Location and Access

The General permit has specific requirements regarding plan location and access.

- Plan location - A copy of the Pollution Prevention Plan must be kept at the construction site from the time construction begins until the site is finally stabilized.
- Retention of records - Retention of records requires that copies of the Storm Water Pollution Prevention Plan and all other reports required by the permit, as well as all of the data used to complete the NOI, be retained for three years after the completion of final site stabilization.

- Access - Although plans and associated records are not necessarily required to be submitted to the Director, these documents must be made available upon request to the Director, or any State or local agency who is approving erosion and sediment control or storm water management plans. If site storm water runoff is discharged to a municipal separate storm sewer system, the plans must be made available upon request to the municipal operator of the system.

**FINAL STABILIZATION/
TERMINATION PHASE**

Operators of a construction site must continue to comply with permit conditions until (1) they no longer meet the definition of an operator of a construction site, or (2) the construction activity is complete, all disturbed soils have been finally stabilized, and temporary erosion and sediment controls have been or will be removed. A permittee should submit a Notice of Termination (NOT) to inform EPA that he/she is no longer an operator of a construction activity.

Final stabilization - Final stabilization is defined by the EPA General Permit as meaning that all soil disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas not covered by permanent structures has been established or equivalent permanent stabilization measures (e.g., riprap, gabions, geotextiles) have been employed.

Notice of Termination - The NOT is a one-page form which should be completed and submitted to EPA when a site has been finally stabilized or when an operator of a construction activity changes. Information to be included on the NOT is the location of the construction site, the name, address, and telephone number of the operator terminating coverage, the NPDES General Permit number, an indication of why coverage under the permit should be terminated for the operator; and a signed certification statement.

Note that when there is a change in operators of a construction activity, the new operator must submit an NOI to be covered by the permit at least two days before the change in operator.

NOTs should be mailed to the following address:

**Storm Water Notice of Termination
Post Office Box 1185
Newington VA 22122**

Record retention - Following the termination of construction activities, the permittees must keep a copy of the Storm Water Pollution Prevention Plan and records of all the data used to complete the Notice of Intent for a period of at least three years following final stabilization. The record retention period may be extended by EPA's request.

OTHER REFERENCES

In addition to this summary, other documents are available to assist in the preparation and implementation of Pollution Prevention Plans. These documents include a copy of Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, (EPA 832-R-92-005, September 1992), which is available from the National Technical Information Service (NTIS Order No. PB 922 359 51 at 703-487-4650).

Other information and guidance available from EPA's National Storm Water Hot Line (EPA's National Storm Water Hot Line number is 703-821-4823) includes:

- Draft - Sediment and Erosion Control; an Inventory of Current Practices (EPS, OWEC, April 20, 1990)
- Draft - Construction site Storm Water Discharge Control; an Inventory of Current Practices (Kamber Engineering, June 26, 1991).

You may also obtain copies of the EPA General Permits which apply to your construction site:

- September 9, 1992, Federal Register (57 FR 41176) - Final NPDES General Permits for Storm Water Discharges from Construction Sites; Notice

Applicability:

For the States of Alaska, Arizona, Idaho, Louisiana, Maine, New Hampshire, New Mexico, Oklahoma, South Dakota, and Texas; for the Commonwealth of Puerto Rico, for Indian lands located in Alaska, California, Colorado (including the Ute Mountain Reservation in Colorado), Florida (two tribes), Idaho, Louisiana, Maine, Massachusetts, Mississippi, Montana, New Hampshire, New Mexico, Nevada, North Carolina, North Dakota, Oklahoma, Texas, Utah, Washington, and Wyoming; for Federal facilities in Colorado and Washington; and for the territories of Johnston Atoll, the Midway, and Wake Island.

- September 25, 1992, Federal Register (57 FR 44412) - Final NPDES General Permits for Storm Water Discharges from Construction Sites; Notice

Applicability:

For the States of Florida and Massachusetts; for American Samoa and Guam; for the District of Columbia; for Indian lands located in New York; and for Federal facilities in Delaware.

Also, please contact your State or local Storm Water Management or Sediment and Erosion Control Permit or plan reviewers for local requirements and additional information.

Storm Water Pollution Prevention Plan

1. A site description, including:
 - ☐ The nature of the activity
 - ☐ Intended sequence of major construction activities
 - ☐ The total area of the site
 - ☐ The area of the site that is expected to undergo excavation
 - ☐ The runoff coefficient of the site after construction is complete
 - ☐ Existing soil or storm water data
 - ☐ A site map with:
 - ☐ Drainage patterns
 - ☐ Approximate slopes after major grading
 - ☐ Area of soil disturbance
 - ☐ Outline of areas which will not be disturbed
 - ☐ Location of major structural and non-structural controls
 - ☐ Areas where stabilization practices are expected to occur
 - ☐ Surface waters
 - ☐ Storm water discharge locations
 - ☐ The name of the receiving water(s)
2. A description of controls:
 - 2.1 Erosion and sediment controls, including:
 - ☐ Stabilization practices for all areas disturbed by construction
 - ☐ Structural practices for all drainage/discharge locations
 - 2.2 Storm water management controls, including:
 - ☐ Measures used to control pollutants occurring in storm water discharges after construction activities are complete
 - ☐ Velocity dissipation devices to provide non-erosive flow conditions from the discharge point along the length of any outfall channel
 - 2.3 Other controls including:
 - ☐ Waste disposal practices which prevent discharge of solid materials to U.S. waters
 - ☐ Measures to minimize off-site tracking of sediments by construction vehicles
 - ☐ Measures to ensure compliance with State or local waste disposal, sanitary sewer, or septic system regulations
 - 2.4 Description of the timing during the construction when measures will be implemented
3. ☐ State or local requirements incorporated into the plans
4. ☐ Inspection and maintenance procedures for control measures identified in the plan
5. ☐ Identification of allowable non-storm water discharges and pollution prevention measures
6. ☐ Contractor certification
7. ☐ Plan certification

**Storm Water Pollution Prevention Plan
Construction/Implementation Checklist**

1. Maintain records of construction activities, including:
 - ☐ Dates when major grading activities occur
 - ☐ Dates when construction activities temporarily cease on a portion of the site
 - ☐ Dates when construction activities permanently cease on a portion of the site
 - ☐ Dates when stabilization measures are initiated on the site
2. Prepare inspection reports summarizing:
 - ☐ Name of inspector
 - ☐ Qualifications of inspector
 - ☐ Measures/areas inspected
 - ☐ Observed conditions
 - ☐ Changes necessary to the SWPPP
3. Report releases of RQ of oil or hazardous materials, if they occur:
 - ☐ Notify National Response Center immediately at 800-424-8802
 - ☐ Notify permitting authority in writing within 14 days
 - ☐ Modify the Pollution Prevention Plan to include:
 - the date of release
 - the circumstances leading to the release
 - steps taken to prevent recurrence of the release
4. Modify Pollution Prevention Plan, as necessary, to:
 - ☐ Comply with minimum permit requirements when notified by EPA that the plan does not comply
 - ☐ Address a change in design, construction operation, or maintenance which has an effect on the potential for discharge of pollutants
 - ☐ Prevent recurrence of reportable quantity releases of a hazardous material or oil

Form A-1 (Erosion Prevention Plan) Final Stabilization/Reclamation Checklist	
1.	<input type="checkbox"/> All soil disturbing activities are complete
2.	<input type="checkbox"/> Temporary erosion and sediment control measures have been removed or will be removed at an appropriate time
3.	<input type="checkbox"/> All areas of the construction site, not otherwise covered by a permanent pavement or structure, have been stabilized with a uniform perennial vegetative cover with a density of 70% or equivalent measures have been employed

POLLUTION PREVENTION PLAN FOR STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES EROSION AND SEDIMENT CONTROL SELECTION CHECKLIST

INSTRUCTIONS: THIS CHECKLIST LISTS THE MINIMUM SEDIMENT EROSION CONTROL REQUIREMENTS UNDER THE USEPA GENERAL PERMIT. CHECK (✓) EACH ITEM AND FILL IN THE BLANKS BELOW TO EVALUATE COMPLIANCE FOR EACH DRAINAGE AREA AND LOCATION. NOTE: THIS CHECKLIST WAS PREPARED FOR THE USEPA GENERAL PERMIT. REQUIREMENTS FOR STATE GENERAL PERMITS MAY VARY.

Stabilization Practices

- ☐ Stabilization will be initiated on all disturbed areas where construction activity will not occur for a period of more than 21 calendar days by the 14th day after construction activity has permanently or temporarily ceased.

Stabilization measures to be used include:

- | | |
|--|--|
| <input type="checkbox"/> Temporary Seeding | <input type="checkbox"/> Sod Stabilization |
| <input type="checkbox"/> Permanent Seeding | <input type="checkbox"/> Geotextiles |
| <input type="checkbox"/> Mulching | <input type="checkbox"/> Other |

Structural Practices

- ☐ Flows from upstream areas will be diverted from exposed soils to the degree attainable. Measures to be used include:

- | | |
|---|---|
| <input type="checkbox"/> Earth Dike | <input type="checkbox"/> Pipe Slope Drain |
| <input type="checkbox"/> Drainage Swale | <input type="checkbox"/> Other |
| <input type="checkbox"/> Interceptor Dike and Swale | |

Drainage locations serving less than 10 disturbed acres:

- ☐ Sediment controls will be installed.
Sediment controls include:
- ☐ Sediment Basin
- ☐ Sediment Trap
- ☐ Silt fence or equivalent controls along all sideslope and downslope boundaries

Drainage locations serving 10 or more disturbed acres:

- ☐ A sediment basin will be installed
- ☐ A sediment basin is not attainable on-site; the following sediment controls will be installed:
- ☐ Sediment trap
- ☐ Silt fence or equivalent controls along all sideslope and downslope boundaries

Sediment Basin Runoff Storage Calculation

<u> </u>	acres area draining to the sediment basin
X 3,600	cubic feet of storage/acre
=	
<u> </u>	cubic feet of storage required for the basin

HOMERVILLE APARTMENTS CONSTRUCTION POLLUTION PREVENTION PLAN

Project Name and Location: Homerville Apartments 21 Broadview Avenue Center City, State 00000	Owner Name and Address: Quality Associates 11 Main Street Center City, State 00000			
<p>This project will consist of three low-rise, attached apartment buildings with adjacent parking facilities.</p> <p>Soil disturbing activities include clearing and grubbing; installing stabilized construction entrance, perimeter, and other erosion/sediment controls; grading; excavation for sedimentation pond, storm sewer, utilities, and building foundations; construction of curb and gutter, road, and parking areas; preparation for final planting/seeding.</p>				
Runoff Coefficient: The final coefficient of runoff for the site will be $c = 0.5$		Site Area: The site is approximately 11.0 acres of which 9.8 acres will be disturbed by construction activities.		
Sequence of Major Activities: The order of activities will be as follows: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> 1. Install stabilized construction entrance 2. Clear and grub for earth dike and sediment basin 3. Install earth dike 4. Construct sedimentation basin 5. Continue clearing and grading 6. Pile topsoil 7. Stabilize denuded areas and stockpiles within 14 days of last construction activity in that area </td> <td style="width: 50%; vertical-align: top;"> 8. Install utilities, storm sewer, curb and gutter 9. Apply stone to parking area and road 10. Construct apartment buildings 11. Complete grading and install permanent seeding and plantings 12. Complete final paving 13. Remove accumulated sediment from basin. 14. When all construction activity is complete and the site is stabilized, remove earth dike, and re-seed any areas disturbed by their removal. </td> </tr> </table>			1. Install stabilized construction entrance 2. Clear and grub for earth dike and sediment basin 3. Install earth dike 4. Construct sedimentation basin 5. Continue clearing and grading 6. Pile topsoil 7. Stabilize denuded areas and stockpiles within 14 days of last construction activity in that area	8. Install utilities, storm sewer, curb and gutter 9. Apply stone to parking area and road 10. Construct apartment buildings 11. Complete grading and install permanent seeding and plantings 12. Complete final paving 13. Remove accumulated sediment from basin. 14. When all construction activity is complete and the site is stabilized, remove earth dike, and re-seed any areas disturbed by their removal.
1. Install stabilized construction entrance 2. Clear and grub for earth dike and sediment basin 3. Install earth dike 4. Construct sedimentation basin 5. Continue clearing and grading 6. Pile topsoil 7. Stabilize denuded areas and stockpiles within 14 days of last construction activity in that area	8. Install utilities, storm sewer, curb and gutter 9. Apply stone to parking area and road 10. Construct apartment buildings 11. Complete grading and install permanent seeding and plantings 12. Complete final paving 13. Remove accumulated sediment from basin. 14. When all construction activity is complete and the site is stabilized, remove earth dike, and re-seed any areas disturbed by their removal.			
Name of Receiving Waters:		The entire site will drain into Rocky Creek which is approximately one hundred yards from the site.		
Erosion and Sediment Controls Stabilization Practices				
<p>Temporary Stabilization - Topsoil stock piles and disturbed portions of the site where construction activity temporarily ceases for at least 21 days will be stabilized with temporary seed and mulch no later than 14 days from the last construction activity in that area. The temporary seed shall be rye (grain) applied at the rate of 120 pounds per acre. Prior to seeding, 2,000 pounds of ground agricultural limestone and 1,000 pounds of 10-10-10 fertilizer shall be applied to each acre to be stabilized. After seeding, each area shall be mulched with 4,000 pounds per acre of straw. The straw mulch is to be tacked into place by a disk with blades set nearly straight. Areas of the site which are to be paved will be temporarily stabilized by applying geotextile and stone sub-base until bituminous pavement can be applied.</p>				
<p>Permanent Stabilization - Disturbed portions of the site where construction activities permanently ceases shall be stabilized with permanent seed no later than 14 days after the last construction activity. The permanent seed mix shall consist of 80 pounds per acre tall fescue, and 40 pounds per acre kobe lespedeza. Prior to seeding, 4,000 pounds of ground agricultural limestone and 2,000 pounds of 10-10-10 fertilizer shall be applied to each acre to be stabilized. After seeding, each area shall be mulched with 4,000 pounds per acre of straw. The straw mulch is to be tacked into place by a disk with blades set nearly straight.</p>				

Earth Dike - will be constructed along the uphill perimeter (north) of the site. A portion of the dike will divert run-on around the construction site. The remaining portion of the dike will collect runoff from the disturbed area and direct the runoff to the sediment basin.

Sediment Basin - will be constructed at the common drainage location on the south side of the construction site. The basin will be formed by constructing an embankment across an existing gully and excavating a storage pond with a volume of 36,000 cubic feet (0.82 acre feet). The basin will drain through a corrugated metal riser and outlet pipe to a riprap outlet apron. Once construction activities are nearly complete, the accumulated sediment will be removed from the basin.

Storm Water Management

Storm water drainage will be provided by curb and gutter, storm sewer, and catch basin for the developed areas. The areas which are not developed will be graded at less than 0.5:1 and have permanent seeding or plantings. Two acres of the site will remain untouched and in its natural state. When construction is complete, the entire site will drain to a wet detention basin. The wet detention basin will be in the location of the temporary sediment basin. When upslope areas are stabilized, the accumulated sediment will be removed from the sediment basin, and the areas on the sides of the basin will be planted with vegetation. The wet detention pond is designed with a permanent pool volume of 0.82 acre feet. This is equivalent to one inch of runoff for the entire drainage area. It is expected that this wet detention pond design will result in an 80% removal of total suspended solids from the site's storm water runoff. The pond has been designed by a professional engineer to keep peak flow rates from the two- and ten-year/24-hour storms at the pre-development rates. The outlet of the detention basin will be stabilized by a riprap apron.

Waste Disposal

Waste Materials - All waste materials will be collected and stored in a securely-lidded metal dumpster rented from the ADF Waste Management Company, which is a licensed solid waste management company in Center City. The dumpster will meet all local Center City and any State solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied a minimum of twice per week, or more often if necessary, and the trash will be hauled to the Center City dump. No construction waste materials will be buried on-site. All personnel will be instructed regarding the correct procedure for waste disposal. Notices stating these practices will be posted in the office trailer, and Mr. Doe, the individual who manages the day-to-day site operations, will be responsible for seeing that these procedures are followed.

Hazardous Waste - All hazardous waste materials will be disposed of in the manner specified by local or State regulation or by the manufacturer. Site personnel will be instructed in these practices, and Mr. Doe, the individual who manages the day-to-day site operations, will be responsible for seeing that these practices are followed.

Sanitary Waste - All sanitary waste will be collected from the portable units a minimum of three times per week by the TIDEE Company, a licensed Center City sanitary waste management contractor, as required by local regulation.

Offsite Vehicle Tracking

A stabilized construction entrance has been provided to help reduce vehicle tracking of sediments. The paved street adjacent to the site entrance will be swept daily to remove any excess mud, dirt, or rock tracked from the site. Dump trucks hauling material from the construction site will be covered with a tarpaulin.

As indicated in the Sequence of Major Activities, the earth dike, stabilized construction entrance, and sediment basin will be constructed prior to clearing or grading of any other portions of the site. Areas where construction

activity temporarily ceases for more than 21 days will be stabilized with a temporary seed and mulch within 14 days of the last disturbance. Once construction activity ceases permanently in an area, that area will be stabilized with permanent seed and mulch. After the entire site is stabilized, the accumulated sediment will be removed from the trap and the earth dike will be removed.

The Storm Water Pollution Prevention Plan reflects Center City requirements for storm water management and erosion and sediment control as established in Center City Ordinance 5-188. To ensure compliance, this plan was prepared in accordance with the Center City Storm Water Management, Erosion and Sediment Control Handbook, published by the Center City Department of Planning, Storm Water Management Section. There are no other applicable State or Federal requirements for sediment and erosion site plans (or permits), or storm water management site plans (or permits).

Erosion and Sediment Control Inspection and Maintenance Practices

These are the inspection and maintenance practices that will be used to maintain erosion and sediment controls:

- Less than one-half of the site will be denuded at one time.
- All control measures will be inspected at least once each week and following any storm event of 0.5 inches or greater.
- All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of report.
- Built up sediment will be removed from silt fence when it has reached one-third of the height of the fence.
- Silt fence will be inspected for depth of sediment, tears, fabric securely attached to the fence posts, and for fence posts to be firmly in the ground.
- The sediment basin will be inspected for depth of sediment; built-up sediment will be removed when it reaches 10% of the design capacity, or at the end of the job.
- Diversion dike will be inspected and any breaches promptly repaired.
- Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and healthy growth.
- A maintenance inspection report will be made after each inspection. A copy of the report form to be completed by the inspector is attached.
- Mr. Doe, site superintendent, will select three individuals who will be responsible for inspections, maintenance and repair activities, and for filling out the inspection and maintenance reports.
- Personnel selected for inspection and maintenance responsibilities will receive training from Mr. Doe. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used on-site in good working order.

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

- Water from water line flushing.
- Pavement wash waters, where no spills or leaks of toxic or hazardous materials have occurred.
- Uncontaminated groundwater from dewatering excavation.

All non-storm water discharges will be directed to the sediment basin prior to discharge.

The materials or substances listed below are expected to be present on-site during construction:

- Concrete
- Detergents
- Paints (enamel and latex)
- Metal Studs
- Concrete
- Tar
- Fertilizers
- Petroleum-based Products
- Cleaning Solvents
- Wood
- Masonry Block
- Roofing Shingles

Material Management Practices

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff:

Good Housekeeping:

The following good housekeeping practices will be followed on-site during the construction project.

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

Hazardous Products:

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

- Products will be kept in original containers unless they are not re-sealable
- Original labels and material safety data will be retained; they contain important product information
- If surplus product must be disposed of, manufacturer's or local and State recommended methods for proper disposal will be followed

Product Specific Practices

The following product specific practices will be followed on-site:

Petroleum Products

All on-site vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Any asphalt substances used on-site will be applied according to the manufacturer's recommendations.

Fertilizers

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

Paints

All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewer system but will be properly disposed of according to manufacturer's instructions or State and local regulations.

Concrete Trucks

Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water on the site.

Spill Control Practices

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

- Manufacturer's recommended methods for spill clean up will be clearly posted and site personnel will be made aware of the procedures and the location of the information and clean up supplies.
- Materials and equipment necessary for spill clean up will be kept in the material storage area on-site. Equipment and materials will include, but not be limited to, brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well-ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous material will be reported to the appropriate State or local government agency, regardless of the size.
- The spill prevention plan will be adjusted to include measures to prevent this type of spill from recurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the clean up measures will also be included.
- Mr. Doe, the site superintendent responsible for the day-to-day operations, will be the spill prevention and clean-up coordinator. He will designate a least three other site personnel who will receive spill prevention and clean up training. These individuals will each become responsible for a particular phase of prevention and clean up. The names of responsible spill personnel will be posted in the material storage area and in the office trailer on-site.

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

Signed:

John R. Quality,
President
Quality Associates

Date: _____

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

Signature	For	Responsible for
Joseph Contractor, President Date: _____	Center City Const., Inc. 21 Elm Street Center City, Any State 00000 123-399-8765	General Contractor
John Planter Vice President of Construction Date: _____	Green Grass, Incorporated 4233 Center Road Outerville, Any State 00001 123-823-5678	Temporary and Permanent Stabilization
Jim Kay, President Date: _____	Dirt Movers, Incorporated 523 Lincoln Avenue 123-823-8921	Stabilized Construction Entrance, Earth Dikes, Sediment Basin

HOMERVILLE APARTMENTS

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

TO BE COMPLETED EVERY SEVEN DAYS AND WITHIN 24 HOURS OF A
RAINFALL EVENT OF 0.5 INCHES OR MORE

INSPECTOR: _____ DATE: _____

INSPECTOR'S QUALIFICATIONS:

DAYS SINCE LAST RAINFALL: _____

AMOUNT OF LAST RAINFALL (inches) _____

STABILIZATION MEASURES

AREA	DATE SINCE LAST DISTURBED	DATE OF NEXT DISTURBANCE	STABILIZED ? (Yes or No)	STABILIZED WITH	CONDITION
Bldg. A					
Bldg. B					
Bldg. C					
Park'g 1					
Park'g 2					
Grass 1					
Grass 2					

STABILIZATION REQUIRED:

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

HOMERVILLE APARTMENTS
STORM WATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT FORM
STRUCTURAL CONTROLS

DATE: _____

EARTH DIKE:

FROM	TO	IS DIKE STABILIZED?	IS THERE EVIDENCE OF WASHOUT OR OVERTOPPING?
Bldg. B	Stabilized construction entrance		
Stabilized Construction Entrance	Sediment Basin		
Bldg. B	Sediment Basin		

MAINTENANCE REQUIRED FOR EARTH DIKE:

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

HOMERVILLE APARTMENTS
STORM WATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT FORM

SEDIMENT BASIN

DEPTH OF SEDIMENT IN BASIN	CONDITION OF BASIN SIDE SLOPES	ANY EVIDENCE OF OVERTOPPING THE EMBANKMENT?	CONDITION OF OUTFALL FROM SEDIMENT BASIN

MAINTENANCE REQUIRED FOR SEDIMENT BASIN:

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

OTHER CONTROLS

STABILIZED CONSTRUCTION ENTRANCE

DOES MUCH SEDIMENT GET TRACKED ONTO ROAD?	IS THE GRAVEL CLEAN OR IS IT FILLED WITH SEDIMENT?	DOES ALL TRAFFIC USE THE STABILIZED ENTRANCE TO LEAVE THE SITE?	IS THE CULVERT BENEATH THE ENTRANCE WORKING?

MAINTENANCE REQUIRED FOR STABILIZED CONSTRUCTION ENTRANCE:

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

HOMERVILLE APARTMENTS
STORM WATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT FORM

CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN:

REASONS FOR CHANGES:

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

SIGNATURE: _____ DATE:: _____

EPA
STORM WATER NOTICE OF INTENT
PROCESSING CENTER

401 M Street SW (4203) Washington DC 20460 703-931-3230

Dear Permittee:

Information on obtaining assistance for developing Storm Water Pollution Prevention Plans is provided below.

- The guidance manual entitled Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA-832-R-005, is available from the National Technical Information Service (NTIS) at a cost of \$35.00. To order the detailed manual, contact NTIS at 703-487-4650 and order document number PB 92-235951.
 - The manual contains comprehensive guidance on the development of Storm Water Pollution Prevention Plans and identification of appropriate best management practices.
- A summary of the detailed guidance manual entitled Storm Water Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, can be ordered from the EPA Resource Center at no charge. To order the summary manual, contact the EPA Office of Water Resource Center at 202-260-7786 and order document number 833-R-92-001.
 - The summary is organized according to the phases of the pollution prevention planning process and includes a set of worksheets and an example of a Pollution Prevention Plan.
- If you have questions concerning the storm water program, you may contact your permitting authority.

We apologize for any inconvenience this may cause you.

EPA
STORM WATER NOTICE OF INTENT
PROCESSING CENTER

401 M Street SW (4203)

Washington DC 20460

703-931-3230

Dear Permittee:

The Notice of Intent (NOI) Form, EPA Form 3510-6(8-92) and the Notice of Termination (NOT) Form, EPA Form 3510-7(8-92), expired August 31, 1995. Copies of the newly revised NOI and NOT forms (with an expiration date of August 31, 1998) are enclosed. The new forms can also be found in the *Federal Register* (9/29/95) on pages 512645 through 51268.

It is **not** necessary to submit revised NOI or NOT forms in place of expired ones used to apply for coverage under EPA's Storm Water Baseline Industrial or Construction General Permits through October 1, 1995. However, it is necessary to use the **new** NOI form to apply for coverage under the Storm Water Multi-sector General Permit issued October 1, 1995. In addition, all **future** applications for or termination of permit coverages under EPA's Baseline Industrial, Baseline Construction, and Multi-sector General Storm Water Permits must make use of the appropriate revised form.

If you have any questions concerning the submittal of the NOI or NOT forms, please contact the NOI Processing Center at 703-931-3230.

SECTION 16470

CONTROL PANELS FOR DUPLEX PUMP STATIONS

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

A. This bid includes the procurement of control panel equipment. The goods and services to be provided by the Supplier under this bid are summarized below.

1. Furnish and deliver a Three Phase Control Panel.
2. Furnish and deliver Operation and Maintenance Manuals.

B. Control panels, as described herein, shall all be provided in identical enclosures, with similar components arranged as indicated on the drawings. The Supplier shall be responsible for the overall proper functionality of panels provided under this contract.

1.02 SUBMITTALS

A. Shop Drawing submittals shall conform to requirements of Section 01300.

B. The shop drawings shall contain overall panel dimensions, interior mounting dimensions and wire gutter dimensions. The location of the main, branches and solid neutral shall be clearly shown. One line diagrams with applicable voltage systems shall be submitted for both the three phase control panel and the Option 3 RTU enclosure, if applicable. Information shall be submitted to show the quantity, size, arrangement and operation of components materials and devices; the external connections, anchorage, and supports required; performance characteristics; and dimensions needed for installation and correlation with other materials and equipment. When an item consists of components from several sources, Contractor shall submit a complete submittal including all components.

C. Submit five copies of the O&M Manuals.

1.03 CODES, PERMITS AND AGENCY APPROVALS

A. All work and materials shall comply with the National Electrical Code and all applicable State and local regulations and ordinances. Where required by applicable codes, panel assemblies, materials and equipment shall be approved, identified, labeled, or listed by Underwriters' Laboratories or other testing organization acceptable to the governing authority. The Contractor shall at his own expense, arrange for and obtain all necessary permits, inspections, and approval by proper authorities necessary in the manufacturing,

CONTROL PANELS FOR DUPLEX PUMP STATIONS

testing, and supply of the specified equipment. This shall include third party inspections or testing of panels and governing authorities may require equipment.

PART 2 - PRODUCTS

2.01 THREE PHASE CONTROL PANELS

- A. Description. The Contractor shall furnish and deliver control panels, completely assembled with all components and capabilities as specified hereunder and in plans/details. The Supplier shall be responsible for the overall proper functionality of panels provided under this contract.
- B. The Contractor shall furnish a laminated electrical line drawing and properly labeled, per Section 1.02, B. Diagram shall include all pump information and curve.
- C. General Fabrication Requirements. All panels furnished hereunder shall conform to the requirements of NEMA ICS-6-1988. The following paragraphs describe general fabrication requirements for the instrument panels, consoles, enclosures, and subpanels:
1. Wiring. All internal instrument and component device wiring shall be as normally furnished by the manufacturer. All interconnecting wiring and wiring to terminals for external connection shall be stranded copper, insulated for not less than 600 volts, with a moisture-resistant and flame-retardant covering rated for not less than 90EC. All wiring shall be gauged according to NEC and all other applicable codes.
 - a. Power distribution wiring on the line side of panel breakers shall be minimum 12 AWG. Secondary power distribution wiring and wiring for control circuits shall be minimum 14 AWG. Indicating light circuits shall be minimum 16 AWG. Wiring for ac power distribution shall have different colors and shall agree with the color coding legend on the system supplier's panel wiring diagrams. All wiring shall be color coded with not less than 35 color combinations used throughout the panel. Control circuits shall be heat-shrink tight wire marked at each end.
 - b. All wiring shall be grouped or cabled and firmly supported inside the panel. Wiring shall be bundled in groups, bound by nylon cable ties, and shall be routed in Panduit or similar nonmetallic slotted ducts. Ducts shall be readily accessible within the panel with removable covers and shall have a space of at least 40 percent of the depth of the duct available for future use after installation is complete and all field wiring installed. Sufficient space shall be provided between cable groups or ducts and terminal blocks for easy installation or removal of cables.
 2. Nameplates. Nameplates shall be provided on the face of each panel and on individual

CONTROL PANELS FOR DUPLEX PUMP STATIONS

devices. Panel nameplates shall be made of laminated phenolic material having engraved letters approximately 3/16 inch (5 m) high extending through a white face into a black layer. Nameplates shall be secured firmly to the panel with escutcheon pins. Nameplates on the face of panels shall include the lift station designation to be identified by the County.

a. Device tags shall agree with the Contractors shop drawings. Panel and subpanel devices shall have laminated phenolic identification tags securely fastened adjacent to the device. Hand-lettered labels or tape labels will not be acceptable.

3. Painting. The back plate shall be thoroughly cleaned and painted with rust-inhibitive primer. The back plate shall be painted white with the manufacturer's standard coating. All pits and blemishes in the surface shall be filled. Surfaces shall be painted with one or more finish coats of the manufacturer's standard coating. Finish coats shall have a dry film thickness of at least 4 mils.
4. Factory Test. Panels shall be factory tested electrically by the panel fabricator before shipment. Contractor shall submit a factory certification. The certification shall include test conducted, date, time, personnel who conducted test, and all results.

D. Panels. The following paragraphs describe specific requirements for the panels.

1. Construction. Panels shall be constructed exclusively of 304 stainless steel, including a continuous piano-hinged front access door. The panel shall have an outer door gasket seal, which shall provide a continuous seal against the exterior door sealing face. A drip shield shall be provided and tack welded in place at not less than 5 locations. The front access door shall have a continuous rolled-lip gasket, shall be full height with a 304 stainless steel continuous piano-hinge, and shall minimally have a 120 degree swing. A three point 90 degree turn latching mechanism constructed of 304 stainless steel shall be provided. The latching mechanism shall be padlockable and operated by a single exterior handle. The panel shall be installed perpendicular to the wetwell and valve vault, and the front access door shall be hinged to open away from the wetwell and valve vault.
 - a. Each panel shall be provided with a dead-front panel and back plate. The dead-front panel shall house devices as shown on the drawings and shall be constructed of brushed aluminum with stainless steel or aluminum hinge. The back plate shall be constructed of primed and finish painted steel with rolled or broken edges for support.
2. Wiring Entrance. The panel design shall allow for external wiring and conduit to enter from the bottom or sides of the panel.
3. Size and Arrangement. Panel dimensions and arrangement of devices shall be as indicated on the drawings.

CONTROL PANELS FOR DUPLEX PUMP STATIONS

4. Intrusion Switches. A panel intrusion switch shall be provided and installed in each control panel. The switch contact shall be normally closed (open when the panel door is closed). Intrusion switches shall be Square D Class 9007, Model XA7506E, without exception. County will accept no other manufacturer or model.
5. Alarm Light. In order to protect the alarm light assembly during shipment, the alarm light assembly shall be shipped loose from the control panel. The assembly shall have been previously attached to the panel in the factory to ensure a proper fit and to ensure cable lengths are sufficient.
6. Control panels shall be constructed and wired in accordance with Sarasota County, Florida,
 - a. Standard Fabrication Plans for Three Phase Duplex Wastewater Lift Stations Supervisory Control and Data Acquisition (SCADA) and Control Panels@ (Sheet 1 of 4 through Sheet 4 of 4). Any discrepancies found in the control panel fabrication shall be brought to the immediate attention of the County.

2.02 CONTROL PANEL INFORMATION

A. Three Phase

1. Starter Size 1 - Three Phase (230 volts, 7.5hp and less)
(460 volts, 10hp and less)
2. Starter Size 2 - Three Phase (230 v > 7.5hp and < or equal to 15hp)
(460 volts > 10hp and < or equal to 25 hp)
3. Starter Size 3 - Three Phase (230 volts > 15hp)
(460 volts > 25hp)

2.03 OPERATION AND MAINTENANCE (O&M) MANUALS

- A. The Contractor shall furnish and deliver Operation and Maintenance Manuals covering the Control Panels and the Option 3 RTU enclosure, if applicable. The number of copies and required contents shall be as specified herein.
- B. Required Data. Operation and maintenance manuals shall include the following:
 1. Equipment function, normal operating characteristics, and limiting conditions.
 2. Assembly, installation, alignment, adjustment, and checking instructions.

CONTROL PANELS FOR DUPLEX PUMP STATIONS

3. Operating instructions for startup, routine and normal operation, regulation and control, shutdown, and emergency conditions.
4. Maintenance instructions.
5. Guide to troubleshooting.
6. Parts lists and predicted life of parts subject to wear.
7. Outline, cross-section, and assembly drawings; engineering data; and wiring diagrams.
8. Test data and performance curves, where applicable.

C. General Requirements of Manuals. The operation and maintenance manuals shall be in addition to any instructions or parts lists packed with or attached to the equipment when delivered, or which may be required by Contractor. The manuals shall be written in a concise easily understandable format conducive to use by individuals who are not experts in electrical equipment installation.

1. Manuals and other data shall be printed on 8-1/2 by 11 inch paper, with standard three-hole punching. Drawings and diagrams shall be reduced to 11 by 17 inches.
2. Three preliminary copies of each manual, temporarily bound in heavy paper covers bearing suitable identification, shall be submitted to Engineer prior to the date of shipment of the equipment. The Engineer shall evaluate the manuals for completeness with respect to items listed in 2.03B and recommend revisions to the manuals as appropriate for operators understanding. After review by Engineer, three final copies of each operation and maintenance manual shall be prepared by the Contractor without additional cost to the County and delivered to the Engineer in accordance with the Supplementary General Provisions, Terms and Conditions. Final manuals and all parts lists and information shall be assembled in substantial, permanent, three-ring or three-post binders. As much as possible, material shall be assembled and bound in the same order as specified, and each volume shall have a table of contents and suitable index tabs.
3. All material shall be marked with project identification, and inapplicable information shall be marked out or deleted.
4. Shipment of equipment will not be considered complete until all required manuals and data have been received.
5. Any drawings provided with O&M manuals shall also be provided on 3-1/2" disks in AutoCAD version 14 format.

CONTROL PANELS FOR DUPLEX PUMP STATIONS

PART 3 - EXECUTION (Not used)

END OF SECTION

CONTROL PANELS FOR DUPLEX PUMP STATIONS

03/15/03

16470-6



SARASOTA COUNTY

"Dedicated to Quality Service"

October 27, 2005

RECEIVED

OCT 31 2005

PBS & J, INC.
SARASOTA

Frank Coggins, Manager
Sarasota County Solid Waste
4000 Knights Trail Road
Nokomis, Florida 34275

NOTICE OF PERMIT ISSUANCE

In the Matter of an
Application for Permit by:

PERMIT NUMBER: CS58-255109
PROJECT: Central County L/F - Leachate F/M
COUNTY: Sarasota
CONNECTED TO: Venice Eastside

ATTN: Frank Coggins
Manager

Enclosed is Permit Number CS58-255109 to construct a domestic wastewater collection/transmission system, issued pursuant to Section 403.087(1), Florida Statutes (F.S.).

Water Resources' proposed agency action shall become final unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S., within fourteen days of receipt of notice. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the proposed permitting decision of Water Resources may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S.

The petition must contain the information set forth below and must be filed (received) in the Office of the County Attorney, 1660 Ringling Boulevard, Sarasota, Florida 34236. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this written notice. Petitions filed by any person other than those entitled to written notice under Section 120.60(3), F.S., must be filed within fourteen days of publication of the notice or within fourteen days of receipt of the written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who has asked Water Resources for notice of agency action may file a petition within fourteen days of receipt of such notice, regardless of the date of publication. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, Florida Administrative Code (F.A.C.).

A petition must contain the following information:

- (a) The name, address, and telephone number of each petitioner; Water Resources' permit identification number and the county in which the subject matter or activity is located;
- (b) A statement of how and when each petitioner received notice of Water Resources' action;
- (c) A statement of how each petitioner's substantial interests are affected by Water Resources' action;
- (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
- (e) A statement of facts that the petitioner contends warrants reversal or modification of Water Resources' action;
- (f) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; and
- (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants Water Resources to take.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the final action of Water Resources may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of Water Resources on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation under Section 120.573, F.S., is not available for this proceeding.

This action is final and effective on the date filed with the Clerk of Water Resources unless a petition is filed in accordance with the above. Upon the timely filing of a petition this order will not be effective until further order of Water Resources.

Any party to the order has the right to seek judicial review of the order under Section 120.68, F.S., by the filing of a Notice of Appeal under Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Office of the County Attorney, 1660 Ringling Boulevard, Sarasota, Florida 34236; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal.

The Notice of Appeal must be filed within 30 days from the date when the final order is filed with the Clerk of Water Resources.

Executed in Sarasota, Florida.

Theresa Connor
Theresa Connor, P.E. *for TC*
General Manager
Water Resources

CERTIFICATE OF SERVICE

The undersigned duly designated Water Resources Clerk hereby certifies that this NOTICE OF PERMIT ISSUANCE and all copies were mailed before the close of business on 10/27/05 to the listed persons.

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated Water Resources Clerk, receipt of which is hereby acknowledged.

By:

[Signature]
Clerk

[Signature]
Date October 27, 2005

Enclosure

cc: John M. Eash, P.E., PBS&J
Dave A. Weber, P.E., PBS&J
R. Christopher Sharek, Utilities Manager, City of Venice
Michael Mehan, Engineering Section Supervisor, Development Services
Veronica Moore, Permitting Coordinator, Development Services

C05PC.179

This page left intentionally blank



SARASOTA COUNTY

"Dedicated to Quality Service"

STATE OF FLORIDA DOMESTIC WASTEWATER COLLECTION/TRANSMISSION INDIVIDUAL PERMIT

PERMITTEE

Frank Coggins, Manager
Sarasota County Solid Waste
4000 Knights Trail Road
Nokomis, Florida 34275

PERMIT/CERTIFICATION

Permit No: CS58-255109
Date of Issue: October 27, 2005
Expiration Date: October 26, 2010
County: Sarasota
Project: Central County L/F - Leachate F/M
Connected To: Venice Eastside

ATTN: Frank Coggins
Manager

This permit is issued by Water Resources under the provisions of Chapter 403, Florida Statutes (F.S.), and Chapters 62-4 and 62-604, Florida Administrative Code (F.A.C.). Sarasota County Water Resources issues this permit as a delegated local program of the Florida Department of Environmental Protection (Department).

The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and other documents, attached hereto or on file with Water Resources and made a part hereof and specifically described as follows:

Description of Project: A wastewater sewage collection and transmission system with an anticipated flow of 20,550 gallons per day (GPD) to serve a commercial development of a permitted landfill leachate collection system. The system consists of approximately 5.2 miles of 4-inch force main and pump station located at 4000 Knights Trail Road, Sarasota County, Florida with treatment at the City of Venice Eastside Wastewater Treatment Facility (FL0041441).

This is a DRY line approval and requires separate Water Resources approval prior to being placed in service.

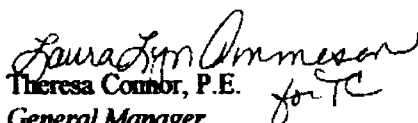
Location: 4000 Knights Trail Road, Sarasota County, Florida

Permittee: Frank Coggins, Manager, Sarasota County Solid Waste

Permit No: CS58-255109

SPECIFIC CONDITIONS:

1. This permit is subject to the general conditions of Rule 62-4.160, F.A.C., as applicable. This rule is available at the Department's Internet site at:
<http://www.dep.state.fl.us/water/wastewater/rules.htm#domestic> [62-4.160, 5-1-03]
2. Upon completion of construction of the collection/transmission system project, and before placing the facilities into operation for any purpose other than testing for leaks or testing equipment operation, the permittee shall submit to Water Resources Form 62-604.300(8)(b), Request for Approval to Place a Domestic Wastewater Collection/Transmission System into Operation. This form is available at the Department's Internet site at:
<http://www.dep.state.fl.us/water/wastewater/forms.htm> [62-604.700(2), 11-6-03]
3. The new or modified collection/transmission facilities shall not be placed into service until Water Resources clears the project for use. [62-604.700(3), 11-6-03]
4. Permit Revisions shall only be made in accordance with Rule 62-4.050(4)(s), F.A.C. Request for revisions shall be made to Water Resources in writing and shall include the appropriate fee. Revisions not covered under Rule 62-4.050(4)(s), F.A.C. shall require a new permit.
[62-604.600(8), 11-6-03]
5. Abnormal events, including unauthorized spills and releases, shall be reported to Florida Department of Environmental Protection Southwest District Office, Tampa at (813) 744-6100 and Water Resources at (941) 861-6220 within 24 hours from the time the permittee, or other designee becomes aware of the circumstances in accordance with Rule 62-604.550, F.A.C. Unauthorized spills of wastewater in excess of 1,000 gallons per incident, or where information indicates that public health or the environment may be endangered, oral reports shall also be provided to the STATE WARNING POINT TOLL FREE NUMBER (800) 320-0519 as soon as practical, but no later than 24 hours from the time the permittee or other designee becomes aware of the circumstances. [62-604.550, 11-6-03]
6. This permit is for CONSTRUCTION ONLY of the collection/transmission system project. This permit does not authorize the connection of this collection/transmission system project to the designated wastewater treatment plant. This permit shall not be construed to infer that the clearance necessary for connection shall be granted. Any such clearance shall be granted only when reasonable assurance is given that adequate treatment and disposal is available in accordance with Water Resources rules, regulations, and permits. Partial clearance may be granted, if required. [62-604.130(1) and 62-604.600(7), 11-6-03]


Theresa Connor, P.E.
General Manager
Water Resources