Florida Department of Environmental Protection

Notification/Application for Constructing a Domestic Wastewater Collection/Transmissions System

Part I - General

Subpart A: Permit Application Type (Check only one)*

☐ Individual permit for a domestic wastewater collection/transmission system serving **10 or greater** equivalent dwelling units (EDU). An EDU is equal to 3.5 persons. Criteria for an individual permit are contained in Rule 62-604.600(7), F.A.C.
Application fee: $500

☐ Individual permit for a domestic wastewater collection/transmission system serving **less than 10** equivalent dwelling units (EDU). An EDU is equal to 3.5 persons. Criteria for an individual permit are contained in Rule 62-604.600(7), F.A.C.
Application fee: $300

☐ Minor revision to an individual permit for a domestic wastewater collection/transmission system.
Application fee: $250

☐ Notice of Intent to use the general permit for a domestic wastewater collection/transmission system. Criteria 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.
Application fee: $250

*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

(1) This form shall be completed for all public and private 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.

(2) 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. Forms and documents may be submitted electronically in accordance with the Wastewater Electronic Document Submission instructions available from DEP's website.
- 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. The plans and specifications shall include lift station design calculations if a lift station is proposed. Chapters 10 and 20 of *Recommended Standards for Wastewater Facilities*, 2014, provide helpful guidance on the proper preparation of plans and specifications. The plans and specifications shall be signed and sealed by a Professional Engineer registered in Florida.

(3) All information shall be typed or printed in ink if submitting paper forms. 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 _____ Title _____

Company Name _____

Address _____

City _____ State _____ Zip _____

Telephone _____ Cell_____ Fax _____

Email _____

(2) General Project Information

Project Name _____

Project Address _____

City _____ State _____ Zip _____

County _____ Latitude _____ Longitude _____

Project Description and Purpose (including the total length and material of each diameter of proposed gravity sewers and forcemains, total number of manholes, total number of pump stations, and connections to existing system):

Estimated date for: Start of construction _____Completion of Construction _____

Number of connections to existing system or treatment plant _____

(3) Project Capacity

Type of Unit	Number of Units	Population Per Unit	Total Population (Number of Units x Population Per Unit)	Per Capita Flow in Gallons per Day (GPD)	Total Average Daily Flow in GPD (Total Population x Per Capita Flow)	Peak hour flow in Gallons Per Minute (GPM)
Single-Family Home						
Mobile Home						
Apartment						
Commercial, Institutional, or Industrial Facility*						
Total	NA	NA		NA		

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

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

Location	Type	Maximum Estimated Flow to the Station (GPD)	Average Estimated Flow to the Station (GPD)	Minimum Estimated Flow to the Station (GPD)	Operating Conditions [GPM @ FT (TDH)]

(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. The checklist below shall be used for conventional collection/transmission systems while Attachment I to this form shall be used for low pressure sewer systems, including septic tank effluent pump (STEP) systems, and Attachment II shall be used for vacuum sewer systems (include Attachments I or II with the submittal of this form as applicable). These checklists cover important items but are not necessarily completely comprehensive of collection system construction and do not relieve the engineer from designing the collection system following sound engineering practices.

Complete the tables below (or Attachments I or II as applicable) as follows:

- The engineer shall initial each requirement if the project has been designed to comply with the standard or criteria.
- Mark "NA" if the requirement does not apply to this project and provide an explanation in section (5)B.
- Mark "NC" if the project has not been designed to comply with the requirement and provide an explanation in section (5)B, including any rule references.

Note, if the project has not been designed in accordance with the standards and criteria set forth in Rules 62-604.400(1) and (2), F.A.C., an application for an individual permit shall be submitted. However, if Rules 62-604.400(1) and (2), F.A.C., specifically 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. Also note that each requirement below and in Attachments I and II includes a reference to guidance or rule for further information. The guidance documents given in the checklists are as follows:

- "RSWF" – Recommended Standards for Wastewater Facilities (2014). Health Research, Inc., Health Education Services Division, P.O. Box 7126, Albany, NY 12224, www.healthresearch.org
- "MOPFD-12" – Alternative Sewer Systems, Manual of Practice No. FD-12. Alternative Sewer Systems (1986). Water Environment Federation, 602 Wythe Street, Alexandria, VA 22314, www.wef.org.
- "FL DSG" – Design and Specification Guidelines for Low Pressure Sewer Systems (1981). Department of Environmental Protection, 2600 Blair Stone Road, MS 3540, Tallahassee, FL 32399-2400, www.floridadep.gov.
- "EPA ACS" - Alternative Wastewater Collection Systems (1991). EPA/625/1-91/024. NTIS# PB93-1162591N2; National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, www.ntis.gov.

General Requirements

Initials (or "NA" or "NC")	Item Number	Requirement
	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.(Note, see Attachment I for low pressure sewer systems) [RSWF 11.243]
	2	Procedures are specified for operation of the collection/transmission system during construction if work is performed on a system currently in operation. [RSWF20.15]
	3	The project is designed to be located on public rights-of-way, 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

Initials (or "NA" or "NC")	Item Number	Requirement
		equivalent level of reliability and public health protection. [62-604.400(1)(b) and (c), F.A.C.]
	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]
	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, non-contact 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.]
	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) and (h), F.A.C. Note, if the criteria of Rules 62-604.400(2)(g) 4. or (2)(h)3., F.A.C., are used, describe in Part II.(5)B. alternative construction features that will be provided to afford a similar level of reliability and public health protection. [62- 604.400(2)(g) and (h), F.A.C.; 62-555.314, F.A.C.]

Gravity Sewers

Initials (or "NA" or "NC")	Item Number	Requirement
	7	The project is designed with no public gravity sewer conveying raw wastewater less than 8 inches in diameter. [RSWF 33.1]
	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]
	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]
	10	Sewers are designed with uniform slope between manholes. [RWSF 33.44]
	11	Where velocities greater than 10 fps are designed, provisions to protect against displacement by erosion and impact are specified. [RSWF 33.45]
	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]
	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]
	14	Suitable couplings complying with ASTM specifications are required for joining dissimilar materials. [RSWF 33.7]
	15	Sewers are designed to prevent damage from superimposed loads. [RSWF 33.7]
	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]
	17	Appropriate deflection tests are specified for all flexible pipe including PVC. Testing is

Initials (or "NA" or "NC")	Item Number	Requirement
		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]
	18	Leakage tests are specified requiring that: 1) the leakage exfiltration or infiltration does not exceed 100 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 C-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]
	19	If an inverted siphon is proposed, documentation of its need is provided in Part II.(5)B. 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

Initials (or "NA" or "NC")	Item Number	Requirement
	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]
	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 (when necessary) 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]
	22	Manholes are designed with a minimum diameter of 48 inches and a minimum access diameter of 24 inches. [RSWF 34.3]
	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]
	24	Design requires: 1) manhole lift holes and grade adjustment rings be sealed with non-shrinking 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 or high water. [RSWF 34.6]
	25	Manhole inspection and testing for water-tightness 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 C-1244. [RSWF 34.7]
	26	Electrical equipment specified for use in manholes is consistent with Item 46 of this checklist. [RSWF 34.9]

Stream Crossings

Initials (or "NA" or "NC")	Item Number	Requirement
	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 or constructed of HDPE with fused joints for directional drilling. 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]
	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)(j)5., F.A.C.]
	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)(j)1., F.A.C., and RSWF 36.11]
	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)(j)2., F.A.C.]
	31	Provisions for testing the integrity of subaqueous lines are specified. [62-604.400(2)(j)4., F.A.C.]
	32	Supports are designed for all joints in pipes utilized for aerial crossings and to prevent overturning andsettlement. 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]
	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)(j)3., F.A.C.]

Pump Stations

Initials (or "NA" or "NC")	Item Number	Requirement
	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.]
	35	Pump stations are designed to be readily accessible by maintenance vehicles during all weather conditions. [RSWF41.2]
	36	Wet well and pump station piping is designed to avoid operational problems from the accumulation of grit. [RSWF 41.3]
	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]
	38	The design includes provisions to facilitate removing pumps, motors, and other mechanical and electrical equipment. [RSWF 42.22]
	39	The design includes provisions for: 1) suitable and safe means of access for persons wearing self-

Initials (or "NA" or "NC")	Item Number	Requirement
		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]
	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]
	41	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]
	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]
	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. Note, this provision is not applicable to grinder pumps. [RSWF 42.33]
	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]
	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, small pump stations serving a single building are not required to provide surge protection devices if not necessary because the pump station is protected by the surge protection device of the single building. [62-604.400(2)(b), F.A.C.]
	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; 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]
	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]
	48	Pump/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]
	49	The design includes provisions to automatically alternate the pumps in use. [RSWF 42.4]
	50	The design requires: 1) suitable shutoff valves be placed on the suction line of pumps/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

Initials (or "NA" or "NC")	Item Number	Requirement
		water hammer; and 7) all shutoff and check valves be operable from the floor level and accessible for maintenance. [RSWF 42.5]
	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]
	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]
	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]
	54	The design provides for adequate ventilation at all pump stations. Mechanical ventilation shall be provided where the dry well is below the ground surface. Permanently installed ventilation shall be provided 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]
	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]
	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]
	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]
	58	If dry well ventilation is continuous, design provides at least 12 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]
	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.]
	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.]
	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 350 gpm or greater design peak flow. [RSWF 42.8]
	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

Initials (or "NA" or "NC")	Item Number	Requirement
	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

Initials (or "NA" or "NC")	Item Number	Requirement
		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 suction-lift pumps and the vacuum pumps be adequately protected from damage due to wastewater. [RSWF 43.1]
	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

Initials (or "NA" or "NC")	Item Number	Requirement
	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]
	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]
	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]
	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]
	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 de-energize 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]
	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

Initials (or "NA" or "NC")	Item Number	Requirement
	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.(5)B. showing an equivalent level of reliability and public health protection. [RSWF 46]
	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 47.423 and 47.433]
	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 47.431]
	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 47.411, 47.417, and 47.432]
	75	Where independent substations are used for emergency power, each separate substation and its associated transmission lines is designed to be capable of starting and operating the pump station at its rated capacity. [RSWF 47.44]

Force Mains

Initials (or "NA" or "NC")	Item Number	Requirement
	76	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. (Not applicable to low pressure sewer systems) [RSWF 49.1]
	77	The design requires: 1) branches of intersecting force mains be provided with appropriate valves such that one branch may be shut down for maintenance and repair without interrupting the flow of other branches; and 2) stub-outs on force mains, placed in anticipation of future connections, be equipped with a valve to allow such connection without interruption of service. [62-604.400(2)(f), F.A.C.]
	78	The design requires air relief valves be placed at high points in the force main to prevent air locking. [RSWF 49.2]
	79	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 the cycling of wastewater

Initials (or "NA" or "NC")	Item Number	Requirement
		pump stations. [RSWF 49.4]
	80	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 (130 for PVC and HDPE) for design. (Not applicable to low pressure sewer systems) [RSWF 49.61]
	81	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 49.7]
	82	Leakage tests for force mains are specified including testing methods and leakage limits. [RSWF 49.8]

Note, if this project is an alternative collection system (i.e. a low pressure sewer system or a vacuum sewer system), complete the checklist items on Attachment I for low pressure sewer systems or Attachment II for vacuum sewer systems. Include the attachment with the submittal. For any items marked "NA" or "NC," provide an explanation in section 5(B).

B. Explanation for Requirements or Standards Marked “NA” or “NC” in II(5)A above, which includes Attachments I and II (attach additional sheets if necessary):

PART III - Certifications

(1) Collection/Transmission System Permittee

I, the undersigned owner or authorized representative* of _____ 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, to 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 _____ Date _____

Name _____ Title _____

**Attach a letter of authorization.*

(2) Owner of Collection/Transmission System

I, the undersigned owner or authorized representative* of _____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 _____ Title _____

Company Name _____

Address _____

City _____ State _____Zip _____

Telephone _____Cell_____Fax _____

Email _____

* *Attach a letter of authorization*

**Description of the owner's portion if split _____

Second Owner of Collection/Transmission System (if system is divided with different owners

I, the undersigned owner or authorized representative* of _____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 _____ Title _____

Company Name _____

Address _____

City _____ State _____Zip _____

Telephone _____Cell_____Fax _____

Email _____

* *Attach a letter of authorization*

**Description of the second owner portion if split _____

(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 Martin County Tropical Farms 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 Martin County Tropical Farms Wastewater Treatment Facility

County Martin City Stuart

DEP Facility ID: FL 0043214

Maximum monthly average daily flow over the last 12 month period 3.582 MGD Month(s) used 03/26

Maximum three-month average daily flow over the last 12 month period 3.530 MGD Month(s) used 03/26-05/26

Current permitted capacity 5.900 MGD ☐ AADF ☐ MADF ■ TMADF

Current outstanding flow commitments (including this project) against treatment plant capacity 0.579 MGD

Signed _____ Date _____

Name Leo Repetti, PE Title Technical Services Administrator

Company Name Martin County Utilities and Solid Waste

Address 3473 SE Willoughby Blvd, Suite 102

City Stuart State FL Zip 34994

Telephone 772-320-3065 Cell _____ Fax 772-221-1447

Email lrepetti@martin.fl.us

** Attach a letter of authorization*

*** If there is an intermediate satellite collection system between the project and the final receiving facility collection system, a letter shall be attached certifying that the intermediate downstream satellite 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 _____

Name _____ Florida Registration No. _____

Company Name _____

Address _____

City _____ State _____ Zip _____

Telephone _____ Cell _____ Fax _____

Email _____

Portion of the project for which responsible: _____

Second Engineer (if applicable)

(Affix Seal)

Signed _____

Date _____

Name _____ Florida Registration No. _____

Company Name _____

Address _____

City _____ State _____ Zip _____

Telephone _____ Cell _____ Fax _____

Email _____

Portion of the Project for Which Responsible: _____

Third Engineer (if applicable) (Affix Seal)

Signed _____

Date _____

Name _____ Florida Registration No. _____

Company Name _____

Address _____

City _____ State _____ Zip _____

Telephone _____ Cell _____ Fax _____

Email _____

Portion of the Project for Which Responsible: _____

Fourth Engineer (if applicable) (Affix Seal)

Signed _____

Date _____

Name _____ Florida Registration No. _____

Company Name _____

Address _____

City _____ State _____ Zip _____

Telephone _____ Cell _____ Fax _____

Email _____

Portion of the Project for Which Responsible: _____

Attachment I – Requirements for Low Pressure Sewer Systems

General

Initials (or "NA" or "NC")	Item Number	Requirement
	1	A central management entity, be it public or private, is identified for the operation and maintenance of the on-lot facilities associated with alternative collection/transmission systems. [FL DSG Page I-24 and 62-604.400(4), F.A.C.]
	2	The project is designed based on a minimum average daily flow of 50 to 70 gallons per capita (100 gallons per capita is recommended) 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. A typical value is 200 gallons per day per EDU (350 is recommended). [MOPFD 12 – Page 45,46, 232 and EPA Manual ACS 2.4.1.1 and FL DSG Page I-23]
	3	Procedures are specified for operation of the collection/transmission system during construction if work is performed on a system currently in operation. [RSWF 20.15]
	4	Except for on-lot facilities, the project is designed to be located on public rights-of-way, land owned by the permittee, or easements (surveyed or implied) and 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.]
	5	Systems must be designed on the basis of the type of pressurization unit employed and peak flows from the number of people to be served by the system. [FL DSG Page I-14]
	6	Specifications require all materials of construction be capable of withstanding the environmental conditions of service. All components of the STEP system exposed to the atmosphere (not always submerged) must be highly resistant to corrosion. [FL DSG Page I-12, RSWF 42.25]
	7	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) and (h), F.A.C. Note, if the criteria of Rules 62-604.400(2)(g) 4. or (2)(h)3., F.A.C., are used, describe in Part II.(5)B. alternative construction features that will be provided to afford a similar level of reliability and public health protection. [62- 604.400(2)(g) and (h), F.A.C.; 62-555.314, F.A.C.]
	8	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 principal backflow-prevention assemblies are specified. [RSWF 42.9 and 62-555.360, F.A.C.]
	9	Specifications require the contractor keep a signed approved record copy of all specifications, plans, addenda, supplementary drawings, working drawings, change orders and similar documents in good order at the construction site and at another convenient location where they are readily available. [FL DSG Page III-14]
	10	Specifications include a maintenance plan and schedule for end users. Specifically, the plan shall include responsibilities of maintenance be it the end user or wastewater managing authority and schedules for float switch cleaning/repair (annually), STEP system effluent screens (annually) and septic tank inspection and solids/scum removal (3-5 years). Spare parts must also be addressed in the maintenance plan. [MOPFD-12 Pages 88, 225, and 270 - 279]

Septic Tank and Wetwell Design

Initials (or "NA" or "NC")	Item Number	Requirement
	11	Pressurization unit covers and septic tank risers incorporate locking mechanisms which

Initials (or "NA" or "NC")	Item Number	Requirement
		provide relief under emergency conditions. [FL DSG Page I-12 and II-6]
	12	Pressurization units are properly vented. (Underwriters Laboratory 778 does not consider grinder pumps to be hazardous locations as defined in the National Electrical Code). [FL DSG Page I-12 and II-14 EPA ACS 2.4.7)
	13	STEP system septic tanks are vented through the building plumbing stack. [MOPFD-12 Page 244]
	14	For grinder pump station designs, the minimum storage capacity required is 50 gallons (additional storage capacity may be required based on local conditions). Storage capacity is determined by the operating volume (volume between the pump off and alarm) plus the reserve volume (volume between the alarm level and the top of the basin). [MOPFD-12 Page 62]. STEP system septic tank residual capacity is at least 100 gallons and 50 gallons storage capacity (as defined above) in the pressurization unit. (FL DSG Page I-13 and II-1]
	15	In areas with high water tables, grinder pump stations and septic tanks are designed to withstand flotation forces when empty. When siting the pressurization unit, the design considers the potential for damage or interruption of operation because of flooding. Pressurization unit structures and electrical and mechanical equipment are designed to be protected from physical damage by the 100-year flood. Pressurization units 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. FEMA flood elevations can be found at: https://msc.fema.gov/portal/home [62-604.400(2)(e), F.A.C., FL DSG Pages II-1 and II-4, MOPFD-12 Page 259]
	16	Septic tanks should be located in areas not subject to vehicular traffic but if subject to vehicular traffic, shall be provided with an approved structural design and have traffic lids designed to withstand vehicular traffic. [FL DSG Page II-1]
	17	STEP system septic tanks are located where they are easily accessible for periodic inspection and removal of accumulated solids. [MOPFD-12 Page 243]
	18	STEP system septic tank materials specified are corrosion resistant as shown by test, experience, or analysis. [FL DSG Page II-4]
	19	Provisions are included to ensure water-tightness of septic tanks when used in pressure sewers, including tank covers, manhole risers and covers, and inlet and outlet connections. [FL DSG 2(5), MOPFD-12 p225, 246]
	20	Septic tank construction shall meet the requirements of Chapter 64E-6, F.A.C., or department regulations
	21	Specifications include provisions for tank inspection of any existing septic tank to be converted for use in a pressure system (vacuum testing is preferred) and if determined to not be watertight, the tank shall be replaced. [FL DSG Page II-6, MOPFD-12 Pages 24,25,236, and 246, EPA ACS 2.5.3]
	22	Specifications include provisions to require that pressurization units are watertight and structurally sound. The specifications include a loading diagram depicting the loads the tank will be subjected to, commensurate with burial depth, groundwater depth, soil types, foundation, bedding and backfill to be used, and other parameters. [MOPFD-12 Page 44]

Appurtenances

Initials (or "NA" or "NC")	Item Number	Requirement
	23	Grinder pump systems and STEP septic tank effluent filters are NSF/ANSI 46 (Wastewater Treatment System Components and Devices) certified. If the systems are not NSF 46 certified, provide a list of the items that have not been tested and demonstrated to pass through the system without issue. [FL DSG Pages II-6 and 9]
	24	STEP system effluent pumps are of cast iron, bronze, and/or plastic construction of the centrifugal type with submersible motor. Pumps are mounted in the pump wetwell or septic tank on three integral support feet or base. [FL DSG Page II-9]

Initials (or "NA" or "NC")	Item Number	Requirement
	25	Specifications include measures for the control/alarm panel to be located outside the house in full view of the pressurization unit and contained in a lockable or tamper-free, corrosion-proof and weatherproof NEMA 4x (or greater) enclosure. [FL DSG Page I-13, MOPFD-12 Page 12]
	26	Specifications include provisions that grinder pump systems and STEP systems utilize an audio and visual high-water level alarm. [FL DSG Page II-13]
	27	For all pressurization unit designs, a check valve is installed in the internal piping on the discharge side of either the grinder pump or STEP system. A redundant check valve may also be installed between the discharge coupling of the wetwell and the pressure sewer main connection. [FL DSG Page II-15, MODFD-12 Page 12, 57]
	28	The design includes a gate or ball valve to be located in the pressurization unit wetwell to prevent backflow when the pressurization unit is removed for service. (FL DSG 2(G)(4)) (MOPFD-12 p12, 64)
	29	The design includes a corporation stop or U-valve to be installed near the service line/pressure sewer main connection to isolate the service line at each service. Service lines are specified to be installed at right angles to the main. [FL DSG Page II-16, EPA ACS 2.4.2.2(e), MOPFD-12 Page 39, 56]
	30	Specifications require boxes and vaults for air release facilities, cleanouts and other appurtenances to be sized to permit easy removal of the facilities, and to permit operation of the valves. The available space inside of a grinder pump station or septic tank is acceptable for valves, discharge piping and other appurtenances. [FL DSG Page III-12]
	31	Designs for all valves shall be full-diameter opening to permit cleaning with a polypig or other devices. Valves in nonmetallic pressure sewer pipelines shall be iron, bronze, PVC, nylon or other approved material and shall have screwed or flanged ends. Valves in metal pressure sewer pipelines shall be iron body, bronze mounted with flanged or mechanical joint ends, except that in the smaller sizes, valves may be all bronze with screwed ends. [FL DSG Page III-12]
	32	The specifications include provisions for all valves to be hydrostatically shop pressure tested at 1,725 kPa (25.0 psi) first by applying the hydrostatic pressure with the valve in the open position and then with the valve in the closed position. Valves failing to be tight and secure under the test pressure shall be rejected for pressure sewer installations. [FL DSG Page III-12]
	33	For designs with valves installed on pressure sewers constructed with flexible pipe materials, the design shall not have the valve supported by the pipe but shall be supported by an anchored concrete cradle or concrete block. [FL DSG Page III-12]
	34	Specifications must provide provisions for valve boxes to be constructed of vehicular traffic-rated plastic or coated cast iron and set into position during backfilling operations so they will be in a vertical alignment and parallel to the valve operating stem. The lower casing of the unit shall be first installed in such a manner as to be cushioned and to not rest directly upon the body of the valve or upon the pressure sewer main. The upper casing of the unit shall then be placed in proper alignment and adjusted to final grade. Backfilling shall be placed and compacted uniformly around the structure so as not to disturb the vertical alignment. [FL DSG Page III-12]
	35	For STEP systems, specifications include effluent screens. [EPA ACS 2.4.6.1, MODFD-12 Page 226]
	36	Specifications call for all appurtenances to be properly labeled to avoid confusion with potable water and other utility services [MOPFD-12 Page 40, FL DSG Page III-12]

Electrical

Initials (or "NA" or "NC")	Item Number	Requirement
	37	The design includes pressurization units and control/alarm panels listed by testing

Initials (or "NA" or "NC")	Item Number	Requirement
		laboratories, e.g. Underwriters Laboratories (UL), Canadian Standards Association, or Factory Mutual. [EPA ACS 2.4.4.2, MOPFD-12 Page 79]
	38	In pressurization units, pump motor connections must be watertight [FL DSG Page I-13]
	39	Specifications require conduit ends to be sealed to prevent moisture and corrosive gases from traveling though the conduit and into the control/alarm panel. [MOPFD-12 Page 79]
	40	For grinder pumps, single-phase motors shall be of the capacitor start/capacitor run type for high starting torque. All grinder pumps shall be standard commercial shop-tested to include visual inspection to confirm construction in accordance with the specifications for correct model, horsepower, cord length, impeller size, voltage, phase and hertz. [FL DSG Page II-9]
	41	Designs for grinder pumps require: Since the single-phase submersible centrifugal grinder pump has a capacitor start type motor, the capacitors and start relays must be located in a separate control panel enclosure. • The control panel should include, but not be limited to, a magnetic starter with ambient compensated bimetallic overload relay. • The relay should have a test button for simulation of overload trip and manual reset button. • Fault protection should be provided via a molded case magnetic circuit breaker with internal common trip or multiple poles. • A hand-off-automatic toggle switch for hand operation with a green light to indicate the pump-running mode should be provided for each grinder pump and mounted on a bracket inside the control panel enclosure. • The control panel enclosure should be of high-quality construction that meets state and local safety codes as well as national electrical codes. • Should there be a power failure, grinder pump malfunction, or flooded wetwell, pump controls and wiring must be accessible and comply with all code regulations to ensure safety of the service user or operating personnel. • As an alternate an explosion-proof combination motor control/junction box may be installed inside the grinder pump wetwell. Semi-positive displacement pumps having the starter and capacitor located in the pump core require only a standard junction box hook-up to the power source. [FL DSG II-12]
	42	Designs for STEP systems require: Effluent pump starters and capacitors are located inside the motor housing and do not require a separate control panel containing these components. [FL DSG II-13]
	43	Specifications require the wiring to connect grinder pump or STEP systems to the power source be suitable for direct burial and comply with state and local electrical codes. Wiring for the level sensors and control panel (if required) must also comply with these requirements. [FL DSG Page II-13]

Force Mains and Service Lines

Initials (or "NA" or "NC")	Item Number	Requirement
	44	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]
	45	Grinder pump force mains are designed to occur, at design pumping rates, a cleansing velocity of at least 2 feet per second (1 ft/second for STEP system force mains) once or twice daily. Maximum velocities shall not exceed 8 feet per second. Pipe sizes shall be determined based on these criteria. FL DSG Page I-16, RSWF 42.38, EPA ACS 2.4.1.2, MOPFD-12 Pages 49, 238]
	46	For projects with existing building sewer service lines, the specifications note that the existing building sewers shall be inspected as described in the Uniform Plumbing Code and

Initials (or "NA" or "NC")	Item Number	Requirement
		replaced if not watertight. [MOPFD-12 Page 243]
	47	Designs utilize the following: when calculating friction losses through pressure mains, utilize a Hazen-Williams roughness coefficient C in English units of 130 to 150 for Polyvinyl Chloride (PVC) and High-Density Polyethylene Pipe (HDPE). [FL DSG Page I-16]
	48	The design shows each building sewer with a cleanout located outside and close to the structure (building or home) and/or at the point of demarcation between building owner and district maintenance. [MOPFD-12 Pages 60 - 61]
	49	Specified pressure main pipe and joints are equal to water main strength materials suitable for design conditions. (FL DSG Table 1-5(5)) [RSWF 48.4, FL DSG Pages II-15, and III-1 through 4.]
	50	Where pressure mains are constructed of material that might cause the pressure main to be confused with potable water mains, specifications require the force main to be clearly identified. [RSWF 48.7]
	51	Specifications include measures for inductive wire (toning cable) to be buried with pressure mains for future location assistance. [FL DSG Pages I-20 and III-13, EPA ACS 2.4.2.1.c, MOPFD-12 Page 266]
	52	The design includes cleanouts and/or shutoff valves to be located at all pipe junctions, pipe terminations, and at locations where pipe sizes change. Note, this requirement may be fulfilled in phases for new developments with approval of the Department. Stub outs on pressure mains are placed in anticipation of future connections and equipped with a valve to allow such connection without interruption of service. At intersections, valves are placed on the upstream side so that individual incoming pipes can be isolated without cutting off service to the other branches. Isolation valves shall always be fully ported type valves. [FL DSG Page I-21 and III-12, EPA ACS 2.4.5.1, MOPFD-12 Pages37 and 55, 62-604.400(2)(f), F.A.C.]
	53	Designs include the spacing of inline shut-off valves at least every 600 ft in high-density areas and not more than 1000 ft in low-density areas. [FL DSG Page I-21]
	54	Designs provide for wastewater type air relief valves to be placed at high points in the force main to prevent air locking. Automatic air release valves are designed to prevent wastewater solids and grease from reaching the valve operating mechanism. Air and gases are released from the valve by float action. Air Release valves are provided for downslopes in excess of 10%. Provisions for cleaning the valve by backflushing shall be provided. [RSWF 48.2, FL DSG Pages I-22 and III-11, EPA ACS 2.4.2.1.e and 2.4.5.2, MOPFD-12 Pages 12 and 38]
	55	The design provides for adequate preventive measures to avoid the accumulation of gases and air in pressure sewer mains. These include: • Submersion of pressurization unit pump intake to prevent siphoning or vortexing after shut-off. • Proper design to prevent undue retention time of wastes in pressure sewer where biological and chemical activity may produce gases. [FL DSG Page I-22]
	56	The design minimizes the liberation of hydrogen sulfide gas where appropriate, such as at discharges to conventional gravity sewers. For example, the connection point of a pressure sewer system to a conventional gravity sewer system should be designed by introducing the pressure sewer discharge into the stream of the gravity sewer main or equal alternative. [FL DSG Page I-23]
	57	Leakage tests for force mains are specified including testing methods and leakage limits. [RSWF 48.8]
	58	Specifications require service lines to be installed at a depth sufficient to prevent any mechanical damage but not less than 1 foot. [FL DSG Page II-16]
	59	Specifications require all pressure sewer mains to be constructed to a minimum depth of 30 inches or as required and as measured from the final ground surface to the top of the barrel of the pipe. [FL DSG Page III-4, MOD FD-12 Page 11]
	60	Specifications require pressure sewer main installation be in accordance with AWWA C600 for ferrous pressure pipe, D2774 for thermoplastic pressure sewer pipe, ASTM 3839 for

Initials (or "NA" or "NC")	Item Number	Requirement
		thermosetting pressure sewer pipe or approved manufacturers' written installation instructions. [FL DSG Page III-6]

Bridge and Stream Crossings

Initials (or "NA" or "NC")	Item Number	Requirement
	61	The low pressure sewer system or STEP system is designed to meet the "Stream Crossings" portion (Items 27-33) of the Collection/Transmission System Design Information beginning on page 4 of DEP Form 62- 604.300(3)(a), Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System. [62-604.300(3)(a), F.A.C.]

Emergency Operations

Initials (or "NA" or "NC")	Item Number	Requirement
	62	Pump stations are designed with an alarm system which activates in cases of pump failure, or high level. The audio-visual alarm system shall have a self-contained power supply. [RSWF 46]
	63	Generators are not required for individual grinder pump stations, however if emergency electric generation systems are utilized, they shall have sufficient capacity to start up and maintain the total rated running capacity of the station. [62-604.400(2)(a)3., F.A.C., and RSWF 47.431]
	64	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 47.411, 47.417, and 47.432]

Conventional Force Mains, Pump Stations, Gravity Sewers and Manholes

Initials (or "NA" or "NC")	Item Number	Requirement
	65	For conventional force mains, pump stations, gravity sewers and manholes used after leaving the lower pressure sewer system or STEP system, the project design meets the "General Requirements" and applicable portions of the Collection/Transmission System Design Information beginning on page 2 of DEP Form 62-604.300(3)(a), Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System. [62-604.300(3)(a), F.A.C.]

Attachment II – Requirements for a Vacuum Sewer System

General

Initials (or "NA" or "NC")	Item Number	Requirement
	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. [RSWF 11.243]
	2	The design includes an appropriate peaking factor (minimum ratio of 3 for peak hour/design average flow). [RSWF 11.243]
	3	Procedures are specified for operation of the existing collection/transmission system during construction if work is performed on a system currently in operation. [RSWF 20.15]
	4	Except for on-lot facilities, the project is designed to be located on public rights-of-way, land owned by the permittee, or easements. [62-604.400(1)(b), F.A.C.]
	5	A central management entity, be it public or private, is identified for operation and maintenance of the on-lot facilities associated with alternative collection/transmission systems. [FL DSG Page I-24 and 62-604.400(4), F.A.C.]
	6	The project is designed 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 showing that another alternative will result in an equivalent level of reliability and public health protection. [62-604.400(1)(c), F.A.C.]
	7	The project is designed with no physical connections between a public or private potable water supply system. [RSWF 38.1 and 48.5]
	8	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, non-contact cooling water and sources of uncontaminated wastewater. [62-604.400(1)(d), F.A.C.]
	9	At the completion of each day's work, testing on vacuum mains and vacuum service pit connections laid that day is specified requiring; 1) the completed portion of the system be plugged and subjected to a vacuum of 22 inches Hg and then allowed to stabilize for 15 minutes prior to monitoring; and 2) a vacuum loss of less than l % per hour during the minimum testing period of 2 hours. [MOPFD-12 #1 Page 205]
	10	Final testing on completed vacuum mains and vacuum service pit connections is specified requiring: 1) the completed portion of the system be plugged and subjected to a vacuum of 22 inches Hg and then allowed to stabilize for 15 minutes prior to monitoring; and 2) a vacuum loss of less than l % per hour during the minimum testing period of 4 hours. [MOPFD-12 #2 Page 205]

Vacuum Collection System

Initials (or "NA" or "NC")	Item Number	Requirement
	11	The entire piping network is designed to keep the bore of the entire pipeline open; sections of pipeline are not purposely sealed. [MOPFD-12 #2 Page 200]
	12	The vacuum sewer system is designed with a minimum air-to-liquid ratio of two parts air to one part liquid. [MOPFD-12 #5 Page 200]
	13	The vacuum sewer system is designed with a maximum static loss of 13 feet and a maximum friction loss of 5 feet in any single flow path. [MOPFD-12 #6 and #7 Page 200]
	14	The project is designed with no vacuum sewer mains less than 4 inches in diameter. [MOPFD-12 #2 Page 201]
	15	Pipe and fittings for vacuum sewer pipe is SDR 21 pressure rated PVC pipe with double-lipped, pushon gasketed joints. [MOPFD-12 #13 Page 202 and Page 129]
	16	General design configuration for uphill transport is based on a saw tooth pipeline profile;

Initials (or "NA" or "NC")	Item Number	Requirement
		or documentation is provided showing other vertical profiles are justified by appropriate engineering data. [MOPFD-12 #1 Page 201]
	17	When vacuum sewer mains or branches must ascend a hill, multiple lifts are designed at a minimum distance of 20 feet apart. Between each lift, vacuum lines are installed with a uniform slope, so that minimum fall of 0.25 feet is achieved between these lifts. [MOPFD-12 #10 Pages 201 and 202]
	18	The project is designed with no single lift of vacuum sewer main exceeding 3 feet in height. [MOPFD-12 #6 Page 201]
	19	The project is designed with 5 maximum lifts in a series. A series of 5 lifts is designed to be separated by at least 100 feet of vacuum mains from the next lift or series of lifts, at least one energy input is designed in the zone of separation. [62-4.070(3), F.A.C.]
	20	If not uphill transport, vacuum sewer mains are designed with a minimum slope of 0.20%. For profile changes less than 125 feet apart, the minimum fall between profile changes is 0.25 feet. [MOPFD-12 #3 Page 201]
	21	If directional drilling, installation tolerances for vacuum sewer main slope are specified the same as those required for open trenching. [62-4.070(3), F.A.C.]
	22	The maximum design flows (i.e., peak flows) for vacuum sewer main sizing is designed as follows: 4-inch pipe/38 gallons per minute (gallons per minute (gpm)); 6-inch pipe/105 gpm; 8-inch pipe/210 gpm; and 10-inch pipe/375 gpm. For vacuum mains larger than 10-inches, flow data supports the peak design flow capacity of that pipe size. [MOPFD-12 #4 Page 201]
	23	The project is designed with 2000 feet maximum length for any one run of 4-inch diameter vacuum sewer main. [MOPFD-12 #5 Page 201]
	24	For changes in horizontal alignment, two 45-degree bends connected by a short section of piping are designed, rather than one 90-degree bend. [MOPFD-12 #8 Page 201]
	25	The project is designed with isolation valves at every branch connection and at intervals no greater than 1500 feet on vacuum sewer mains. Resilient coated wedge gate valves and a valve box or other approved apparatus, to facilitate proper use of the valve, are specified. [MOPFD-12 #9 Page 201]
	26	The vacuum sewer system is designed to prevent damage from superimposed loads. [RSWF 33.7]
	27	The vacuum sewer system is designed to meet the "Stream Crossings" portion (Items 27-33) of the Collection/Transmission System Design Information beginning on page 4 of DEP Form 62- 604.300(3)(a), Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System. [62-604.300(3)(a), F.A.C.]
	28	The project is designed so that all new or relocated, buried vacuum sewers, are located in accordance with the separation requirements from water mains and reclaimed water lines of Rules 62-604.400(2)(g) and (h), F.A.C. Note, if the criteria of Rules 62-604.400(2)(g) 4. or (2)(h)3., F.A.C., are used, describe in Part II.(5)B. alternative construction features that will be provided to afford a similar level of reliability and public health protection. [62-604.400(2)(g) and (h), F.A.C.; 62-555.314, F.A.C]

Vacuum Valves

Initials (or "NA" or "NC")	Item Number	Requirement
	29	Vacuum valves with the ability to pass a 3-inch spherical solid are specified. [MOPFD-12 #1 Page 204]
	30	Valves that are vacuum-operated on opening and spring-assisted on closing are specified. [MOPFD-12 #2 Page 204]
	31	Valve configuration is designed so that the collection system vacuum ensures positive valve seating. Valve plunger and shaft is designed to be completely out of the flow path when valve is in the open position. [MOPFD-12 #3 Page 204]

Initials (or "NA" or "NC")	Item Number	Requirement
	32	The valve is designed to be equipped with a sensor-controller that relies on atmospheric air and vacuum pressure from the downstream side of the valve for its operation, thereby requiring no other power source. The controller is designed to be capable of maintaining the valve fully open for a fixed period of time and be field-adjustable over a range of 3 to 10 seconds. [MOPFD-12 #4 Page 204]
	33	With the exception of the gravity lateral line air-intake, no other external sources of air are designed as a part of the valve assembly. [MOPFD-12 #5 Page 204]
	34	An internal sump breather unit arrangement is designed to connect the valve controller to its air source and provide a means of ensuring that no liquid can enter the controller during system shutdowns and restarts. It shall also be designed to prevent sump pressure from forcing the valve open during low vacuum conditions and provide positive sump venting, regardless of traps in the home gravity service line. [MOPFD-12 #6 Page 204]

Valve Pits

Initials (or "NA" or "NC")	Item Number	Requirement
	35	Peak flow to any vacuum valve pit is designed to a maximum of 3 gallons per minute. [MOPFD-12 #3 Page 202]
	36	When specific valve service lines having suction lifts in excess of 5.5 feet are designed, the static losses added to the losses for that main do not exceed 13 feet. [MOPFD-12 #6 Page 200]
	37	Suction lifts from the bottom of the holding sump to the valve centerline do not exceed 8 feet. [MOPFD-12 #6 Page 200]
	38	A single valve pit is designed to serve a maximum of four separate building sewers, but no more than 3 gallons per minute. [MOPFD-12 #1 Page 202]
	39	On a system-wide design basis, the overall separate building sewer to valve pit ratio does not exceed 2.5: l. [MOPFD-12 #1 Page 202]
	40	No single property or parcel is designed to be served by more than one valve pit, unless justification is provided to support multiple valve pits. [MOPFD-12 #2 Page 202]
	41	Valve pits installed within a road right-of-way or other area subject to vehicular traffic shall be designed and installed to withstand appropriate traffic loads. [MOPFD-12 #4 Page 202]
	42	Valve pits are designed to have a receiving sump with a minimum of 50 gallons of storage. [MOPFD-12 #5 Page 202]
	43	Valve pits are designed to prevent entrance of water in the sump and for the vacuum valve to remain fully operational if submerged. [MOPFD-12 #6 Page 203]
	44	Valve pit locations are designed to be easily accessible, so that valves may be easily removed and replaced. [MOPFD-12 #7 Page 203]
	45	Valve pits are designed to include a 3" flexible PVC connector connected directly to the valve pit between the valve pit and vacuum sewer main. [MOPFD-12 Page 162]
	46	Valve pits are designed to include gravity service connection stub-outs piping to which the sewer customer will ultimately connect. Customer connections are designed via gravity flow to the vacuum pit location. [MOPFD-12 #9 Page 203 and #1 Page 209]

Buffer Tanks

Initials (or "NA" or "NC")	Item Number	Requirement
	47	Buffer tanks are designed instead of single valve pits if there are nonresidential/commercial or high flow inputs greater than 3-gpm peak flow or if there is no other practical method of serving the property by additional vacuum mains and valve pits. [MOPFD-12 #1 Page 203]

Initials (or "NA" or "NC")	Item Number	Requirement
	48	Buffer tanks are designed to have an operating sump of no less than 10 gallons at a wastewater depth of 10 to 14 inches. [MOPFD-12 #3 Page 203]
	49	No more than 25% of the total peak design flow on a system-wide basis is designed to enter through buffer tanks, unless justification is provided depending on static and friction loss and buffer tank location. [MOPFD-12 #4 Page 203]
	50	No more than 50% of the total peak design flow is designed to enter a single vacuum main through buffer tanks, unless justification is provided depending on static and friction loss and buffer tank location. [MOPFD-12 #5 Page 203]
	51	One 3-inch vacuum valve is designed to be used for every 15 gpm at peak wastewater flow. For higher flows, the wastewater is designed to be admitted to a splitter manhole which will evenly split and divert the flow to multiple valve buffer tank units. [MOPFD-12 #6 Page 203]
	52	When specific buffer tank valve pits having suction lifts in excess of 5.5 feet are designed, the static losses added to the losses for that main do not exceed 13 feet. [MOPFD-12 #6 Page 200]
	53	Suction lifts from the bottom of the holding sump to the valve centerline do not exceed 8 feet. [MOPFD-12 #6 Page 200]
	54	Dual buffer tanks are designed to be connected to a 6-inch or larger vacuum main; where three or more valves are used, an 8-inch vacuum main or larger is specified. [MOPFD-12 #7 Page 204]
	55	The design requires: 1) buffer tanks be constructed of minimum 4-feet internal diameter precast concrete manhole sections; and 2) all joints and connections on the buffer tank must be water-tight. Above ground venting of the vacuum valve must be installed, to ensure proper venting, in the event that the buffer tank becomes filled with wastewater. [MOPFD-12 #8 Page 204]
	56	Provisions are included with the buffer tank design to allow for separation of the valve access area from the sanitary wastewater storage area. [MOPFD-12 #9 Page 204]
	57	Provisions are included with the buffer tank design for maintenance personnel access. [MOPFD-12 #9 Page 204]

Individual Gravity Laterals

Initials (or "NA" or "NC")	Item Number	Requirement
	58	Inspection and approval of individual gravity laterals are specified before final connection and vacuum valve installation requiring: 1) laterals be no less than 4 inches in diameter; and 2) laterals be schedule 40 PVC or pressure-rated PVC (SDR 21 or SDR 26) or similar. [MOPFD-12 #2 and #5 Page 210]
	59	Air-intakes for each individual gravity lateral are specified requiring that: 1) air-intake piping and fittings be the same diameter as the lateral; 2) air-intakes extend a minimum of 2 feet above ground level with a gooseneck to protect against flooding; 3) air-intakes contain a stainless-steel screen to prevent the entry of rodents, insects, and debris; and 4) air-intakes be located to prevent damage to the piping. As an alternative to air-intakes, 6-inch Dedicated Air Terminals are specified. [MOPFD-12 #8 Page 203 and #4 Page 210]

Vacuum/Pump Stations

Initials (or "NA" or "NC")	Item Number	Requirement
	60	In areas with high water tables, stations are designed to withstand flotation forces when empty. When siting the station, the design considers the potential for damage or interruption of operation because of flooding. Station structures and electrical and

Initials (or "NA" or "NC")	Item Number	Requirement
		mechanical equipment are designed to be protected from physical damage by the 100-year flood. 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.]
	61	Stations are designed to be readily accessible by maintenance vehicles during all weather conditions. [RSWF 41.2]
	62	The total volume of the vacuum collection tank is designed to be three times the collection tank operating volume, plus 400 gal, with a minimum size of 1000 gallons. [MOPFD-12 #3 Page 207]
	63	Necessary pipe, fittings, and valves are specified to allow for emergency pumping out of the vacuum collection tank. [MOPFD-12 #9 Page 206]
	64	A minimum of two pumping units are specified for both the vacuum pumps and the wastewater pumps, with each being capable of handling peak flow conditions with the other out of service. [MOPFD-12 #3 Page 206]
	65	The design includes provisions to automatically alternate the pumps in use. [RSWF 42.4]
	66	Vacuum pumps are designed for both peak flow from the vacuum valves adjusted to a 2:1 air-liquid inlet time ratio and for a system pump down time between 1 and 3 minutes with one pump not in service. [MOPFD-12 #2 Page 207 and 208]
	67	Wastewater discharge pumps are designed using an appropriate peaking factor. [MOPFD-12 #2 Page 206 and 207]
	68	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. Note, this is not applicable to grinder pumps. [RSWF 42.33]
	69	The design requires pumps be placed such that under normal operating conditions they will operate under a positive suction head. [RSWF 42.34]
	70	Wastewater discharge pumps are adequate to maintain a minimum velocity of 2 feet per second in the force main. [RSWF 42.38]
	71	Certification is specified from the pump manufacturer stating that wastewater discharge pumps are suitable for use in a vacuum sewer installation. [MOPFD-12 #5 Page 206]
	72	The design requires: 1) suitable shutoff valves (plug valves or resilient coated wedge gate valves) be placed on the suction line of wastewater discharge pumps; 2) suitable shutoff and check valves be placed on the discharge line of each wastewater discharge pump; 3) a check valve be located between the shutoff valve and the wastewater discharge 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. [MOPFD-12 #6 and #8 Page 206 and RSWF 42.5]
	73	Isolation valves are specified between the vacuum collection tank, vacuum pump(s), influent line, and raw wastewater discharge pipe. [MOPFD-12 #7 Page 206]
	74	Vacuum station piping and fittings 4 inches and larger are specified to be 150 #ANSI flanged ductile iron. Piping and fittings less than 4 inches are specified to be schedule 80 PVC with solvent-welded joints. [MOPFD-12 #10 Page 206]
	75	Station testing requirements are specified in accordance with the vacuum system manufacturer's standard. [MOPFD-12 #12 Page 206]
	76	Instrumentation and control systems to provide operational functionality are specified to manufacturer's standard. Provisions for automatic pump alternation are included in the instrumentation and control system. The instrumentation and control system to bear the UL label, per the requirements of UL 508 and UL 508A. [MOPFD-12 #1 and #2 Page 208]
	77	The design requires: 1) stations be protected from lightning and transient voltage surges; and 2) stations be equipped with lighting arrestors, surge capacitors, or other similar protection devices and phase protection. [62-604.400(2)(b), F.A.C.]
	78	The design provides for adequate ventilation in accordance with RSWF 42.7. [MOPFD-12 Page 208 and RSWF 42.7]

Initials (or "NA" or "NC")	Item Number	Requirement
	79	Electrical equipment and installation are designed to meet the requirements of the National Electrical Code. [MOPFD-12 #2 Page 208]
	80	Adequate temperature control is designed for the main electrical equipment and primary power distribution. [MOPFD-12 #5 Page 209]
	81	Potable water, power, and telephone service is specified to be provided to the vacuum/pump station. [MOPFD-12 #6 Page 209]
	82	Outdoor lighting for security is specified. [MOPFD-12 #9 Page 209]
	83	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.]
	84	The design requires 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.]
	85	The design provides for suitable and safe means of access in accordance with RSWF 42.23. [RSWF 42.23]
	86	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. The ferrous metal components of the vacuum pump station are specified to be protectively coated to prevent corrosion. [MOPFD-12 #11 Page 206 and RSWF 42.25]
	87	The design includes provisions to facilitate removing pumps, motors, and other mechanical and electrical equipment. [RSWF 42.22]
	88	The design requires suitable devices for measuring wastewater flow at all pump stations. Indicating, totalizing, and recording flow measurement are specified for stations with a 350 gpm or greater design peak flow. [RSWF 42.8]
	89	The station is designed with no physical connections with any potable water supplies. If a potable water supply is brought to a station, reduced-pressure principle backflow-prevention assemblies are specified. [RSWF 42.9 and 62-555.360(4), F.A.C.]

Emergency Operations for Vacuum/Pump Stations

Initials (or "NA" or "NC")	Item Number	Requirement
	90	Stations are designed with an alarm system which activates in cases of power failure, pump failure, unauthorized entry, or any cause of pump station malfunction. Station alarms are designed to be telemetered to a facility that is manned 24 hours a day. If such a facility is not available, 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 showing an equivalent level of reliability and public health protection. [RSWF 46]
	91	The design requires emergency pumping capability be provided for all stations. For 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 station failure and transportation and connection of emergency equipment. [62-604.400(2)(a)1. and 2., F.A.C., MOPFD-12 #4 Page 209 and RSWF 47.423 and 47.433]
	92	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

Initials (or "NA" or "NC")	Item Number	Requirement
		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 stations to hook up portable pumps; and 4) all 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 47.431]
	93	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 47.411, 47.417, and 47.432]
	94	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 47.414 and 47.415]
	95	For permanently installed or portable engine-driven pumps are used, the design includes provisions for manual start-up. [RSWF 47.422]
	96	Where independent substations are used for emergency power, each separate substation and its associated transmission lines is designed to be capable of starting and operating the pump station at its rated capacity. [RSWF 47.44]

Conventional Force Mains, Pump Stations, Gravity Sewers and Manholes

Initials (or "NA" or "NC")	Item Number	Requirement
	97	For conventional force mains, pump stations, gravity sewers and manholes used after leaving the vacuum/pump station, the project design meets the "General Requirements" and applicable portions of the Collection/Transmission System Design Information beginning on page 2 of DEP Form 62- 604.300(3)(a), Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System. [62-604.300(3)(a), F.A.C.]