

GENERAL SPECIFICATIONS

I. APPLICABLE CODES:

A. GENERAL:

All construction and materials shall conform to the Standards and Specifications of the City of Pembroke Pines Engineering Division, Broward County Department of Planning and Environmental Protection (BCDPEP), Broward County Health Department (BCHD), South Broward Drainage District (SBDD), South Florida Water Management District (SFWMD), and all other local and national codes where applicable.

B. CONSTRUCTION SAFETY:

All construction shall be done in a safe manner, specifically, the rules and regulations of the Occupational Safety and Health Administration (OSHA) and the Manual of Uniform Traffic Control Devices (MUTCD) shall be strictly observed.

C. SURVEY DATA:

All elevations on the plans or referenced in the specifications are based on National Geodetic Vertical Datum of 1929 (NGVD).

II. PRECONSTRUCTION RESPONSIBILITIES:

A. Upon receipt of Notice of Award, the Contractor shall arrange a Preconstruction Conference to include the City of Pembroke Pines Engineering Division, the Owner, the Engineer and himself after obtaining a construction permit from the Engineering Division.

B. The Contractor shall obtain a SUNSHINE Certification number at least 48 hours prior to beginning any excavation.

C. Prior to beginning construction, the Contractor shall verify the size, location, elevation, and material of all existing utilities within the area of construction.

- D. The Contractor shall be responsible for damage to any existing utilities for which he fails to request a Sunshine Certification Number. He is responsible as well for damage to any existing utilities which have been properly located.
- E. If upon excavation, an existing utility is found to be in conflict with the proposed construction or to be of a size or material different from that shown on the plans, the Contractor shall immediately notify the Engineer, who will in turn notify the City of Pembroke Pines Engineering Division.

III. INSPECTIONS:

The Contractor shall notify the City of Pembroke Pines Engineering Division and the Engineer of Record at least 24 hours prior to beginning construction and prior to the inspection of the sanitary sewer and water system.

IV. SHOP DRAWINGS:

- A. Prior to issuance of construction permit, a Materials Review List shall be submitted to and reviewed by the Engineer of Record and the City of Pembroke Pines Engineering Division for fire hydrants, valves, piping, lift stations and other accessories.
- B. Any product that is not on this list must be approved in advance by the Engineer of Record and the City of Pembroke Pines Engineering Division. Such approval requires the submission of a shop drawing (six copies) for each product. Shop drawings will also be required for all non-standard items.
- C. Individual shop drawings for all precast structures are required and shall be submitted to and reviewed by the Engineer of Record and the City of Pembroke Pines Engineering Division Prior to issuance of a construction permit.

V. TEMPORARY FACILITIES:

A. TEMPORARY UTILITIES:

1. It shall be the Contractor's responsibility to arrange for or supply temporary water service, sanitary facilities and electricity to his employees and subcontractors for their use during construction.
2. It shall be the Contractor's responsibility to obtain a construction meter for all water used on job. The cost of all water used for cleaning, testing, etc. will be the Contractor's responsibility. If water cannot be metered then it will be calculated.

B. TRAFFIC REGULATION:

1. Maintenance of traffic in the public right-of-way shall be in accordance with the MUTCD and BCTED.
2. All open trenches and holes adjacent to roadways or walkways shall be properly marked and barricaded to assure the safety of both vehicular and pedestrian traffic.
3. No trenches or holes near walkways or in roadways or their shoulders are to be left open during nighttime hours without express permission of the City of Pembroke Pines Engineering Division.

VI. PROJECT CLOSEOUT:

A. CLEANING UP:

1. During construction, the project site and all adjacent areas shall be maintained in a neat and clean manner. Upon final clean up, the project site shall be left clear of all surplus material or trash. The paved areas shall be swept broom clean.
2. The Contractor shall restore or replace, when and as directed by the Engineering Division of the City of Pembroke Pines, any public or private property damaged by his work, equipment, employees or those of his subcontractors to a condition at least

equal to that existing immediately prior to the beginning of operations. To this end, the Contractor shall do as required, all necessary highway or driveway, sidewalk and landscaping work. Suitable materials and methods shall be used for such restoration.

3. Where material or debris has washed or flowed into or been placed in water courses, gravity sewer, ditches, drains, catch basins, or elsewhere as a result of the Contractor's operations, such material or debris shall be removed and satisfactorily disposed of during progress of the work, and the area kept in a clean and neat condition.
4. When working in and around existing drainage canals, appropriate silt barriers shall be installed as required by the South Broward Drainage District.

B. PROJECT RECORD DOCUMENTS:

1. The Contractor shall maintain accurate and complete records of work items completed.
2. All "as-built" information submitted to the Engineer shall be sufficiently accurate, clear and legible to satisfy the Engineer that the information provides a true representation of the improvements constructed.
3. Upon completion of construction, the Contractor shall submit to the Engineer of Record one complete set of "as-built" construction drawings. These drawings shall be marked to show "as-built" construction changes and dimensioned locations and elevations of all improvements and shall be signed by the Contractor.
4. All "as-built" information on elevations, stationing offsets and ties of the water, sanitary sewer, paving and drainage shall be certified by a registered land surveyor.
5. As-built information on the water & sewer system shall include, but not limited to, locations of all valves, fittings, fire hydrants, water and sewer services, manholes and top-of-pipe elevations at 100-foot intervals as a minimum.
6. Prior to a final inspection by the City of Pembroke Pines Engineering Division, the Engineer shall submit two (2) sets of blueprints of "As-Built" construction drawings.

7. Upon a final inspection by the City of Pembroke Pines Engineering Division, the Engineer shall submit to the City one (1) complete set of reproducible mylars, three (3) sets of blue prints of "as-built" construction drawings that have been certified by a registered land surveyor and the Engineer of Record and computer files of "as-built" construction drawings on 3 1/2" floppy disks in AutoCADD release 14 format or latest revision.

VII. WATER DISTRIBUTION AND/OR SEWAGE FORCE MAIN SYSTEM:

A. GENERAL

1. The Contractor shall notify the City of Pembroke Pines Engineering Division and the Engineer of Record no later than 24 hours prior to making connections to existing systems. A City of Pembroke Pines Engineering Division representative and the Engineer of record must be present.
2. Separation of Water and Sewer Mains:
 - a. Parallel water and sewer mains shall have a minimum 10' horizontal separation. Where this is not possible, the sewer main shall be in a separate trench and be at least 18" below the water main and both mains shall be ductile iron per pressure pipe specifications.
 - b. The sewer main shall cross below all water mains with a minimum of 18" vertical clearance. Where the clearance is less than 18", the sewer main and the water main shall be ductile iron pipe for 20' centered on the point of crossing. All joints on the water main within 20 feet of the crossing shall be mechanically restrained.
 - c. If a sewer main must cross above a water main, regardless of vertical clearance, the precaution in item (b) above shall be taken.

3. No connections to the existing lines shall be made until pressure tests, for the water mains and sewer force mains, and bacteriological tests have been performed and the system is acceptable to the City of Pembroke Pines and the Broward County Public Health Department.
4. Cleaning of newly installed piping systems shall be accomplished using pipe pigging methods. Open flushing shall not be allowed without prior approval of the City of Pembroke Pines Engineering Division. All water will be accounted for.
5. All efforts shall be made so that water and force mains cross above drainage lines with adequate cover and separation. If this is not possible, it shall be indicated on the plans.
6. A three (3) foot lateral separation shall be maintained between water/sewer lines and obstructions (ie., catch basins, concrete poles, etc.) five (5) foot from trees.
7. The maximum depth to the bottom of pressure mains shall be installed as not exceed six (6) feet unless otherwise approved by the City of Pembroke Pines Engineering Division. Restrained joints shall be used, in lieu of concrete thrust blocks, at all changes in direction of water mains, sewage force mains and elsewhere as indicated on the drawings. Restrain all pipe joints within the distances on each side of the fittings as required to properly restrain and support bends, tees, valves, dead ends and other such fittings with the exception of fire hydrants.

B. MATERIALS:

1. Pipe:

The water main and/or sewage force main shall be either polyvinyl chloride (PVC) or Ductile Iron Pipe (D.I.P.) and shall be designed for a minimum working pressure of 150 psi.

 - a. PVC pipe shall be pressure pipe with iron O.D., Class 150 (DR 18), conforming to ANSI/AWWA C900-89 or C905-88 or latest revision and shall have push on rubber gasket joints.

b. D.I.P. shall be Class 350 wall thickness (up to 12"), Class 300 (14"-18"), Class 250 (20" or greater) with interior cement lining conforming to ANSI/AWWA C151/A21.51-96, or latest revision. Sewage pipe shall be either double cement conforming to ANSI/AWWA C104/A21.4-95 or latest revision, or polyethylene lined conforming to ANSI/AWWA C105/A21.5-93 or latest revision, or approved equal. The pipe shall withstand a working pressure of 350 psi. The joints shall be bell and spigot push on type, mechanical joint or flanged. Flanged pipe shall conform with the physical and chemical requirements as set forth in the Handbook of Ductile Iron Pipe of the Cast Iron Pipe Research Association.

2. Fittings:

Fittings shall be ductile iron compact mechanical joint type and shall be class 350 through 24" conforming to ANSI/AWWA C153/A21.53-94, or latest revision, and class 250 in sizes 24" and larger, conforming to ANSI/AWWA C110/A21.10-93, or latest revision, complete with glands, gaskets, bolts and nuts. All fittings shall be cement lined and seal coated with the same as pipe.

3. Valves:

a. Valves shall be gate valves for water (4"-12" in size), butterfly valves for water (16" and up in size), or plug valves for sewer (all sizes).

i. Gate valves shall be iron body, fully resilient seat, bronze mounted non-rising stem, double disc, rated at 200 psi and conforming to ANSI/AWWA C509-94 or latest revision. Exposed valves shall be outside screw and yoke type.

ii. Butterfly valves and operators shall conform to ANSI/AWWA C504-94 or latest revision standard for rubber-seated butterfly valves and shall be class 150 A or B.

iii. Plug valves shall be semi-steel body, non-lubricated, eccentric type, with resilient faced plugs, and capable of drip-tight shut off at the rated pressure if applied at either port. Valves are to be equipped with actuating nuts, cast iron handwheels or chain

operators, with galvanized steel chains, as appropriate for the installation and type of operator.

b. Air Release Valves

i. Sewer Force Main Air Release Valves - System shall be a combination of one sewage air release valve and one sewage air/vacuum valve with dual isolation plug valves. Both valve bodies and covers shall be of cast iron construction, ASTM A126-B. All internal parts shall be of stainless steel, ASTM A240 - Type 304 and ASTM A276 - Type 303. The venting orifice shall be 5/16" in diameter with stainless steel seat. The inlet openings shall be a minimum of 2" NPT screwed connection for both valves. The valves shall be fully capable of operation in sewage force main. Both valves shall include a back-flushing feature for periodic cleaning of the internal mechanism. The overall height shall not exceed 22 1/2 inches.

ii. Water Main Air Release Valves - Valve body and cover shall be of cast iron construction, ASTM A126-B. All internal parts shall be of stainless steel, ASTM A240 - Type 304 for the float and ASTM A296 - Type 316 for the linkage. The venting orifice shall be 3/16" in diameter with brass seat. The inlet opening shall be a 2" NPT screwed connection. The overall height shall not exceed 13 inches.

c. A reflective pavement marker shall be installed in the center of the nearest lane of road pavement adjacent to all valve locations outside the road pavement. Water markers shall be white, sewer markers shall be green.

4. Fire Hydrants:

a. Fire hydrants shall have a minimum 5 1/4" valve opening and shall open against the pressure and closing with the flow. Hydrants shall meet or exceed ANSI/AWWA C502-94, C503-88 or latest revision, and shall comply with

Factory Mutual Research Corporation and Underwriters Laboratories UL246 Standard.

- b. A blue reflective pavement marker shall be provided in the center of the nearest lanes of road pavement adjacent to all fire hydrant locations.

5. Detector Tape:

Detector tape shall be 3" wide blue tape for water main and brown tape for force main with a metallized foil core laminated between 2 layers of plastic film. The words "CAUTION WATER LINE BURIED BELOW" or "CAUTION FORCE MAIN BURIED BELOW" shall be printed at 30" intervals along the tape. Tape shall be placed 18" below grade above all PVC mains and services or as recommended by manufacturer. Non-metallic tape shall be used above ductile iron pipe.

6. Service Connections:

- a. Service saddles shall be Ductile Iron epoxy or nylon coated with double STAINLESS steel straps or single wide strap. Saddles shall conform to ANSI/AWWA C111/21.11-95 and ASTM A 588 or latest revision.
- b. Service lines shall be polyethylene (PE) tubing as described in ANSI/AWWA C901-96, or latest revision with a working pressure of 200 psi (DR 9). Pipe joints shall be of the compression type totally confined grip seal and coupling nut. Polyethylene shall be extruded from PE 3408 high molecular weight materials and must conform to ASTM D2737.
- c. Corporation stops shall be manufactured of brass alloy in accordance with ASTM B62 with threaded ends.
- d. Meter stops shall be the 90 degree lockwing type and shall be of bronze construction in accordance with ASTM B62. Meter stops shall be closed button design and resilient "O" ring sealed against external leakage at the top. Stops shall be equipped with a meter coupling nut on the outlet sides,
- e. Meter and meter boxes two inches or less are supplied and installed by the City of Pembroke Pines at the owner's expense.

7. Tapping Sleeves:

Tapping sleeves shall be ductile iron meeting ASTM Grade 65-45-12, mechanical joint.

8. Valve Boxes:

- a. Valve boxes for water mains and sewer force mains shall be adjustable screw type with 5 ¼ inch shaft, 18 to 24 inch extension, Cast Iron ASTM-A48 Class 30 marked "Water" or "Sewer".
- b. Valve boxes for blow-off assembly shall be Cast Iron ASTM-A48 Class 30 marked "W".

9. Retainer Glands:

Retainer glands shall conform to ANSI/AWWA C111/A21.11-95 or latest revision. All glands shall be manufactured from ductile iron as listed by Underwriters Laboratories for 250 psi minimum water pressure rating.

10. Double check valve backflow prevention assembly:

The assembly shall conform to ANSI/AWWA C510-92 or latest revision and be capable of withstanding a working pressure of at least 150 psi without damage to working parts or impairment of function. It shall consist of two internally loaded, independently operating check valves, located between two tightly closing resilient-seated shut off valves, with four properly placed resilient-seated test cocks.

C. INSTALLATION:

1. General:

Connection of all new systems to existing mains shall be done using one of the three following methods:

- a. Method A per Broward County Public Health Department Standards, which involves a reduced size temporary connection between the existing main and the new main.
- b. Method B per Broward County Public Health Department Standards, which involves a direct connection between the new and existing mains using two gate valves separated by a sleeve with a vent pipe.

- c. Method C approved by the Broward County Public Department Unit, which involves a tap with one gate valve requiring disenffection of the new system prior to conducting the pressure test.

2. Bedding:

Bedding and initial backfill (12 inches above pipe) for all pipe shall be sand with no rock larger than 1" in diameter. Pearrock or 3/4" washed rock will be used in water or where unsuitable bedding exists at the discretion of the City of Pembroke Pines. All other fill shall not have rock larger than 6" in diameter.

3. PVC Pipe:

- a. PVC pipe shall be installed in accordance with the Uni-Bell Plastic Pipe Association's Guide for Installation of PVC Pressure Pipe for Municipal Water Distribution Systems.
- b. PVC pipe shall be installed with a minimum of 36" cover.
- c. Detector tape shall be installed the full length of all PVC mains approximately 18" below grade, color side up.

4. Ductile Pipe:

- a. D.I.P. shall be installed in accordance with ANSI/AWWA C600-93 or latest revision.
- b. D.I.P. shall be installed with a minimum of 30" cover.
- c. Identification tape shall be installed the full length of all D.I.P. mains approximately 18" above the main, color side up.

5. Valves:

- a. All valves shall be installed with adjustable cast iron valve boxes with the word "WATER" or "SEWER" cast in the cover.
 - b. Main valves shall be located on an extension of the right-of-way line unless dimensioned otherwise.
 - c. Main valves shall be installed away from parking areas. If this is unavoidable, proper measures shall be taken to avoid the parking of vehicles over the valves. Hydrant valves shall be installed as close to the main as possible. Valves located in non-paved areas or in parking stalls require a reflective pavement marker on the center of the nearest lane of road pavement. White reflectors for water main valves, green reflectors for force main valves.
 - d. The distance from the top of the valve actuator nut to final grade shall be a minimum of 12 inches and a maximum of 18 inches.
6. Service:
- a. Cover over service lines shall be 18" minimum, 24" maximum below finished grade and 24" under pavement.
 - b. Polyethylene shall be bedded in backfill of sand with no rock greater than 1" in diameter.
 - c. Meter stops shall have 8" to 10" cover or as required for proper meter/box installation.
 - d. Water services under pavement shall be encased in a Schedule 80 PVC sleeve for the full length of the pavement and for 2' beyond the edge.
 - e. The end of each service connection shall be marked with a 2"x4" treated stake, painted blue, extending 18" (minimum) above grade unless indicated otherwise.

D. TESTING:

1. The physical connection of the new system to the exiting system shall be done in accordance with Section C.1. above which will dictate the order of the pressure testing and disinfection.
2. The complete water system shall be pressure tested and disinfected. The pressure test shall be for two hours at 150 psi minimum test pressure in accordance with ANSI/AWWA C600-93 or latest revision. The pressure test shall not vary more than ± 5 psi during the test. Leakage allowances will not be made for fittings or valves.
3. Allowable leakage shall not exceed the formula of:

$$L \text{ (gallons per hour)} = \frac{SD(P)^{0.5}}{133,200}$$

L = allowable leakage in gals/hr (no allowable leakage for valves)

S = length of pipe tested in feet

D = nominal diameter of pipe in inches

P = average test pressure during test in lbs/sq. in.

4. The pressure test shall be witnessed by a representative of the City of Pembroke Pines Engineering Division and the Engineer of Record.
5. Sampling points shall be provided at the locations shown on the plans or as directed by the Broward County Health Department. If not specified, sampling points shall be provided at intervals of 1500' maximum for lines greater than 1500' in length. Provide a minimum of two sampling points for all other test segments.
6. Before acceptance for operation, the water system shall be disinfected in accordance with ANSI/AWWA C651-92 or latest revision with approved bacteriological samples and proper documentation by the Broward County Health Department. Collection of samples is the Contractor's responsibility and will be witnessed by a City of Pembroke Pines Engineering Division representative.

VIII. GRAVITY SEWAGE COLLECTION SYSTEM:

A. MATERIALS:

1. Sewer Pipe and Fittings:

- a. PVC sewer pipe and fittings shall be non-pressure polyvinyl chloride pipe conforming to ASTM D3034, SDR 35, with push-on rubber gasket joints unless otherwise noted.
- b. Ductile Iron Pipe (D.I.P.) shall be double cement conforming to ANSI/AWWA C104/A21.4-95 or latest revision, or polyethylene lined inside conforming to ANSI/AWWA C105/A21.5-93 or latest revision, or approved equal manufactured in accordance with ANSI/AWWA C151/A21.51-96 or latest revision, minimum wall thickness Class 350 (unless otherwise specified).
- c. All fittings and accessories shall be as manufactured or supplied by the pipe manufacturer.

2. Manholes:

- a. Manholes shall be precast per ASTM C478 type II with 4000 psi concrete and grade 40 steel. Monolithically poured bases only.
- b. Manhole openings are to be sealed with anti-hydro cement or approved equal. No molding plaster will be allowed.
- c. Manhole joints shall be sealed with "Ramnex" gaskets or approved equal and with anti-hydro cement on the inside and outside.

B. INSTALLATION

1. Pipe and Fittings:

- a. Sewer pipe shall be installed in accordance with ASTM D2321, and the Uni-Bell Plastic Pipe Association's "Recommended Practice for the Installation of PVC Sewer Pipe".

- b. D.I.P. shall be installed in accordance with ANSI/AWWA C600-93 or latest revision.
- c. Bedding and initial backfill (12 inches) over sewer mains and services shall be sand with no rock larger than 1" in diameter. Pearrock or 3/4" washed rock will be used in water or where unsuitable bedding exists at the discretion of the City of Pembroke Pines. All other fill shall not have rock larger than 6" in diameter.
- d. Pipe connection into manhole wall shall be ductile iron pipe grouted in-place or cast-in neoprene rubber boot, or equal as approved by the City of Pembroke Pines.
- e. Gravity sewer mains installed deeper than twelve (12) feet shall be D.I.P. and shall be installed in accordance with ANSI/AWWA C600-93 or latest revision.

2. Manholes:

- a. Manholes shall be set plumb to line and grade on firm clean subgrade providing uniform bearing under the base.
- b. All openings and joints shall be sealed water-tight.
- c. The entire inside of the manholes shall be painted with two coats (8 mils each, dry) of Kopper's 300-M Bitumastic coating or approved equal; first coat red, second coat black. The outside of each manhole requires only one coat (8 mils, dry) of the same type of coating.
- d. Manholes shall be installed away from parking areas on the centerline of the roadway. If this is unavoidable, proper measures shall be taken to prohibit the parking of vehicles over manholes.

- e. Orange reflective pavement markers shall be provided on the center of the nearest lane of road pavement adjacent to all manhole locations outside the road pavement.
 - f. All lids shall be provided with a polyethylene watertight manhole insert. The cover body shall be manufactured to the dimensions as shown on the contract drawings to allow easy installation in the manhole frame. The insert shall be provided with a lift strap attached to the cover body.
3. Service:
- a. Minimum slope of all service lines shall be as indicated in the South Florida Building Code - Broward County Edition.
 - b. Service laterals shall terminate at a depth 30" below finished grade.
 - c. Each service connection shall be plugged water-tight with an approved plug.
 - d. The end of each service connection shall be marked with a 2"x4" treated stake painted red, extending 18" (min.) above grade.
 - e. Contractor shall rough in riser to 1 foot above finished grade and plug. At project completion, cut back to finished grade.
 - f. Connection of services to building's plumbing shall be coordinated with the City's Building and Zoning Department, Plumbing Section.

C. TESTING:

- 1. After construction of the sewer system, the entire system shall be lamped. Sewer lamping shall be witnessed by the Engineer of Record and a representative from the City of Pembroke Pines Engineering Division.
- 2. After construction of the sewer system, the City of Pembroke Pines or the Engineer of Record may require a visual infiltration and/or exfiltration test to be performed on the entire system or any part thereof.

3. An air test may be substituted for the water exfiltration test, upon approval of the City of Pembroke Pines.
4. Manhole exfiltration leakage shall not exceed 4 gallons per day per unit.
5. Sewer pipe exfiltration leakage shall not exceed 10 gallons per day per inch diameter per mile in a two hour test period for any section tested.
6. Visible manhole and sewer pipe infiltration leakage shall not be permitted.
7. Sanitary sewer shall be televised, at Developer's expense, prior to final approval of construction. Video tape and report shall be examined by the City of Pembroke Pines Engineering Division. Owner/Contractor shall be responsible for correcting any deficiencies prior to the City's certification of completion to any agency.

IX. WET WELL MOUNTED WASTEWATER PUMPING STATION

A. GENERAL

1. Scope of Work

Furnish all labor, materials, equipment and incidentals required and install, place in operation, and field test a telemetry controlled wet well mounted wastewater pumping station and a emergency generator or bypass pump to provide emergency service to the pump station. The station shall be complete with pumps, motors, piping, telemetry, valves, electrical work (including motor controls), structures or connection and appurtenances, tested and ready for service. The generator or pump shall be trailer mounted, diesel powered sized to maintain the pump station flow. Refer to plans for other site features.

2. Description of System

- a. The Contractor shall furnish and install one factory built, automatic pumping station as manufactured by Smith & Loveless, Inc., Lenexa, Kansas. The station shall be complete with all needed equipment, factory-installed on a welded steel base with fiberglass cover.
- b. The principal items of equipment shall include two vertical, close-coupled, motor driven, vacuum primed, non-clog sewage pumps; valves; internal piping; central control panel with circuit breakers; motor starters and automatic pumping level controls; heater, ventilating blower; priming pumps and appurtenances; and all internal wiring.
- c. Refer to plans for a complete list of operating conditions.
- d. The pumping station shall pump raw, unscreened, domestic wastewater into a force main which is pumped to a local manhole, or transmission system.

- e. The remote telemetry unit shall include an enclosure with power supply, central processing unit, analog and digital inputs, digital output, radio, directional antenna and appurtenances and all wiring.

- d. The Contractor shall furnish, at the City of Pembroke Pines discretion, either an emergency generator or emergency bypass pump. The generator shall be sized to meet the starting amperage of both pumps simultaneously. The bypass pump shall be a minimum six (6) inch self priming pump. Either shall be diesel powered , trailer mounted with necessary towing equipment including, lights and hitch. The generator shall be supplied with necessary plug and cable for supplying power to the pump station control panel. The bypass pump shall be supplied with the necessary hoses and connections to provide bypassing of the pump station.

3. Qualifications

To assure unity of responsibility, the motors and control system shall be furnished and coordinated by the local pump manufacturer representative. The Contractor and pump manufacturer shall assume responsibility for the satisfactory installation and operation of the entire pumping system including pumps, motors, controls, generator or bypass pump as specified.

4. Submittals

- a. Copies of all materials required establishing compliance with the specifications should be submitted in accordance with the provisions of the general conditions. Submittals shall include at least the following:
 - i. Shop erection drawings showing all-important details of construction, dimensions and anchor bolt locations.
 - ii. Descriptive literature, bulletins and catalogs of the equipment.
 - iii. Data on the characteristics and performance of each station pump, generator, data shall include a certified performance test, based on actual shop tests of the sale units, which show that they meet the specified requirements for head, capacity, efficiency, and horsepower. Curves shall be submitted on 8 1/2 inch by 11 inch sheets at as large a scale as practical. Curves shall be plotted from no flow at shut off head to pump capacity at minimum specified total dynamic head. Catalog sheets showing a family of curves will not be acceptable.
 - iv. Complete master wiring diagrams, elementary or control schematics, including coordination with other electrical control devices operating in conjunction with the pump control system and suitable outline drawings shall be furnished for approval before proceeding with manufacturer, standard pre-printed sheets or drawings simply marked to indicate applicability to this contract will not be acceptable.

- v. A drawing showing the layout of the pump control panel shall be furnished, the layout shall indicate every device mounted on the door with complete identification.
 - vi. The total weight of the equipment including the weight of the single largest item.
 - vii. A complete total bill of materials of all equipment.
 - viii. A list of the manufacturer's recommended spare parts to be supplied in addition to those specified in paragraph 6.a. with the manufacturer's current price for each item. Include gaskets, seals, etc. on the list. List bearing by the bearing manufacturer's numbers only.
 - ix. All submittal dates required by the general conditions.
 - x. Complete motor data.
- b. In the event that it is impossible to conform with certain details of the specifications due to different manufacturing techniques, describe completely all non-conforming aspects.
 - c. Upon receipt of approval of submitted material, provide five prints.

5. Operating Instructions

- a. Operating and maintenance manuals shall be furnished which will include parts lists of components and complete service procedures and trouble shooting guide. The manuals shall be prepared specifically for the installation and shall include all required cuts, drawings, equipment lists, description, etc. that are required to instruct operating and maintenance personnel unfamiliar with such equipment.
- b. A factory trained representative of all major component manufacturers, who has complete knowledge of proper operation and maintenance, shall be provided for one (1) day at the station, to instruct representatives of the City

and the Engineer on proper operation and maintenance and to perform initial start-up of the pump station. With permission of the City, this work may be conducted in conjunction with the inspection of the installation and test run. If there are difficulties in operation of the equipment due to the manufacturer's design or fabrication, additional service shall be provided at no cost to the Owner.

6. Spare Parts

- a. A complete replacement pump shaft seal assembly shall be furnished with each pump station. The spare seal shall be packed in a suitable container and shall include complete installation instructions. In addition, a spare seal gasket shall be provided.
- b. Spare parts shall be properly bound and labeled for each identification without opening the packaging and suitably protected for long term storage.

7. Guarantee

- a. The manufacturer of the lift station shall guarantee the structure and all equipment to be free from defects in materials and workmanship for a period of up to one year from date of start-up, not to exceed 18 months from the date of shipment.
- b. Warranties and guarantees by the suppliers of various components in lieu of single-source responsibility by the station manufacturer will not be accepted. The station manufacturer shall be solely responsible for the guarantee of the station and all its components.
- c. The repair or replacement of those items normally consumed in service, such as seals, grease, light bulbs, etc., shall be considered as part of routine maintenance and upkeep.

B. EXECUTION

1. Installation

- a. Installation shall be in strict accordance with the manufacturer's instructions and recommendations in the locations shown on the drawings. Installation shall include furnishing the required oil and grease for initial operation. The grades of oil and grease shall be in accordance with the manufacturer's recommendations. Anchor bolts shall be set in accordance with the manufacturer's recommendations.
- b. The Contractor shall submit a certificate from the equipment manufacturer stating that the installation of the equipment is satisfactory, that the equipment is ready for operation, and that the operating personnel have been suitably instructed in the operation, lubrication and care of each unit.
- c. Installation of the pump chamber shall be done in accordance with the written instructions provided by the manufacturer.

2. Shop Painting

- a. Before exposure to weather and prior to shop painting, all surfaces shall be thoroughly cleaned, dry and free from all mill-scale, rust, grease, dirt and other foreign matter.
- b. All pumps and motors shall be shop coated, with manufacturer's standard coating.
- c. All nameplates shall be properly protected during painting.
- d. Gears, bearing surfaces and other similar surfaces obviously not to be painted shall be given a heavy shop coat of grease or other suitable rust-resistant coating. This coating shall be maintained as necessary to prevent corrosion during periods of storage and erection and shall be satisfactory to the engineer up to the time of the final acceptance test.

3. Inspection and Testing

- a. General

- i. The engineer shall have the right to inspect, test or witness test of all materials or equipment to be furnished under these specifications, prior to their shipment from the point of manufacture.
- ii. The engineer shall be notified in writing prior to initial shipment, in ample time so that arrangements can be made for inspection by the engineer.
- iii. The engineer or his representative shall be furnished all facilities, including labor, and shall be allowed proper time inspection and testing of material and equipment.
- iv. Materials and equipment shall be tested or inspected as required by the engineer, and the cost of such work shall be included in the cost of the equipment. The Contractor shall anticipate that delays may be caused because of the necessity of inspection, testing and accepting materials and equipment before their use is approved.
- v. The services of a factory representative shall be furnished for one (1) day, for the station, and shall have complete knowledge of proper operation and maintenance to inspect the final installation and supervise the test run of the equipment.
- vi. Field tests shall not be conducted until such time that the entire installation is complete and ready for testing, including permanent electrical power and telemetry control.
- vii. All components of the pump station shall be given an operational test at the pump station manufacturer's facility to check for excessive vibration, for leaks in the pumping or seals and correct operation of the automatic control and vacuum priming systems and all auxiliary equipment. Installed pumps shall take suction from a deep wet well, simulating actual service conditions. The control panel shall undergo both a dry logic test and a full operational test with all systems operating.

viii. Factory test instrumentation must include flow measuring with indicator; compound suction gauge; bourdon tube type discharge pressure gauge; electrical meters to measure amperes, volts, kilowatts and power factor; speed indicator and a vibrometer capable of measuring both amplitude and frequency.

b. Pumps

i. After all pumps have been completely installed, and working under the direction of the manufacturer, conduct in the presence of the engineer and a City of Pembroke Pines representative, such tests as are necessary to indicate that pumps conform to the specifications. Field tests shall include all pumps included under this section. Supply all electrical power, water or wastewater labor, equipment and incidentals required to complete the field tests.

ii. If the pump performance does not meet the specifications, corrective measures shall be taken or pumps shall be removed and replaced with pumps which satisfy the conditions specified.

c. Motors

i. The Contractor shall check all motors for correct clearance and alignment and for correct lubrication in accordance with manufacturer's instructions. The Contractor shall check direction of rotation of all motors and reverse connections if necessary.

d. Telemetry

i. The Contractor shall demonstrate that the telemetry system is functional and has communication with the base unit.

d. Generator

i. The Contractor shall provide for a load test equal to the start up amperage of both pumps.

e. Bypass Pump

- i. The Contractor shall demonstrate that the bypass pump is cable of meeting actual service conditions.

SITE PLAN REVIEW

- A. All plans submitted to Environmental Services must be a maximum size of 24" x 36" and folded.

- B. The following items must be received by Environmental Services at least ten (10) working days prior to the scheduled date of the Staff Review Committee Meeting.
 - 1. Site plan to be reviewed.
 - 2. Copy of recorded plat.
 - 3. Broward County's conditions for plat approval
 - 4. Schematic engineering plans showing the following items:
 - a. Locations of all water and sewer mainlines, services structures and lift stations
 - b. Locations of fire hydrants
 - c. Provide photomatic light plan indicating pole location, pole and fixture detail, with colors specified (black, dark brown, white).
 - d. Existing and proposed elevations of the entire site
 - e. Existing and proposed elevations of the adjoining sites, abutting the property in review on all sides along its perimeter
 - f. Existing and proposed lakes, canals, waterways with existing and proposed elevations and depths
 - g. All existing and proposed off site improvements that are related to this project
 - h. Locations of buildings, lots, driveways, sidewalks and roads
 - i. Locations of all drainage lines and structures
 - j. Property boundaries, legal descriptions and addresses
 - k. Proposed finished floor elevations of all buildings
 - l. Any other streetscape features such as landscaping, decorative features, etc., drawn at a scale equal to schematic engineering plans

5. Traffic engineering plans showing all pavement markings, traffic signs, street number signs and other signs (a separate plan must be submitted).
 6. Survey of the property.
- C. All of the following items must be satisfied prior to site plan approval by the Planning and Zoning Board.
1. Subdivision Improvement Bond:

Prior to the approval of the site plan, the developer shall submit to the City, the Subdivision Improvement Bond in the amount of 110% of the cost of subdivision improvements such as paving, drainage, water, sewer, lakes excavation, pavement marking, traffic and road signs, street lights, etc. The bond shall be accompanied by the estimated costs of subdivision improvements certified by a registered professional engineer.
 2. Underground Utilities:

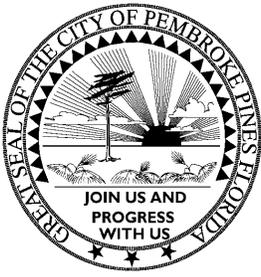
All wires, cables, feeders and equipment for the transmission of electrical impulses, sounds, voices or communications shall be installed underground. No overhead utility lines or feeders shall be allowed.
 3. Street Lighting:

Prior to approval of the site plan, the developer shall pay to the City \$1,000 per pole for street lighting on all public roads, poles being 180 feet apart. Provide a plan to be approved by Florida Power and Light Company for the lighting of private roads and parking areas within the subdivision.
 4. Street Addresses:

The developer shall be responsible to provide all street addresses prior to the approval of the site plan. The Post Office and the Building Official shall approve address plan.
 5. Curbing:

Provide type-F curb and gutter or header curb for all exit and entrance radii in public rights-of-way.
 6. Floor Elevation:

Lowest building floor elevation must be in accordance with the City's flood ordinance.



**CITY OF PEMBROKE PINES
PUBLIC SERVICES DEPARTMENT**

Environmental Services
8300 S. Palm Drive
Pembroke Pines, FL 33025
(954) 518-9040 office

PLAN REVIEW APPLICATION

Date Submitted _____ Date Reviewed _____

Indicate proposed improvements:

- Paving _____ Drainage _____ Excavation / Fill / Lake _____
 Water _____ Sewer _____ Other _____

1. Complete this application in full including signature. If any information is not applicable please identify as such. Please print legibly in ink or type. Please do not leave any items unanswered. All information on this application must be completed.
2. Submit two (2) complete sets of plans, folded, signed and sealed by a Registered Professional Engineer.
3. Submit the appropriate plan review fee:
4. Submit one (1) copy of U.S. Army Corp of Engineers, FDOT, SBDD, SFWMD, BCTED, BCED, HRS, DEP, DPEP application and/or approval when appropriate.
5. Submit one (1) set of signed and sealed drainage calculations.
6. Submit one (1) signed and sealed copy of an engineer's estimate including costs and quantities of the proposed improvements.
7. Submit a lighting plan. Plans should include pole location, pole and fixture detail, and foot candles of light to be provided (2 ft-candle average commercial; 0.5 average residential)
8. Submit one (1) copy of the approved address plan mylar and all required copies.
9. Submit a copy of the recorded plat and final plat comments.
10. Submit a survey and legal description.
11. Submit one (1) set of signed and sealed lift station calculation when applicable.

Project Name: _____

Project Location: Township: _____ Section: _____ Range: _____

Developer/Owner: _____ Phone: _____ Fax: _____

Address: _____

Contact Name: _____ Phone: _____ Fax: _____

Engineer: _____ Phone: _____ Fax: _____

Address: _____

Contact Name: _____ Phone: _____ Fax: _____

Applicant Name

Signature and Date

ENVIRONMENTAL SERVICES PLAN REVIEW REQUIREMENTS

- A. Construction plans for all water, sewer, paving and drainage improvements to be built by the Developer must be submitted with the engineering plan review application and appropriate plan review fee.
1. Paving & Drainage see section 150.16B and 150.43
 2. Water & Sewer see section 150.16B and 150.43
 3. Landscaping see section 150.16B and 150.43
- B. Submit seven (7) sets of drawings (folded) with specifications for proposed improvements for review and comment, accompanied by Broward County Health Department, Broward County Department of Planning and Environmental Protection, South Broward Drainage District, Florida Department of Transportation, Broward County Traffic Environmental Services, Broward County Environmental Services, South Florida Water Management District, U.S. Army Corp. of Engineers and/or Department of Environmental Protection completed application(s). All of the above to be originally signed and sealed by the Engineer of Record.
- C. The Engineer will be responsible for obtaining all other approvals and permits from all other appropriate agencies and/or City departments. Drawings and applications approved by the City and reviewing agencies and returned to the Developer's Engineer of Record will then be submitted to the City's Engineer for permit to construct.
- D. After review the Engineer will receive back two (2) sets of approved plans, which have been signed by the Division Director of Environmental Services for appropriate action as noted.
- E. The City will provide to all applicants:
1. normal plan review (first submittal)
 2. re-submittal plan review
- Normal plan review costs are defined to be all costs associated with: pre-submittal meeting with the City's staff and the Engineer; the first review of the final plans submitted with the application; the preparation of a letter and/or revised drawings to the Developer itemizing any required plan modifications identified in the first review; and the inspection of a first resubmittal to verify that the previously identified modifications have been made.
- Abnormal review costs are defined to be any and all review costs that are incurred by the City subsequent to a determination that the first resubmittal has not complied with all requirements identified during the initial plan review. If the City incurs any abnormal plan review costs, the Developer shall be required to pay an additional plan review charge. Said additional charge shall be due and payable at the time a final set of construction plans is approved.
- F. Upon completion of a satisfactory final inspection, results will be certified by the City to the several regulating agencies for their use in granting final use permits, according to their requirements.
- G. At the City's discretion, acceptance of completed systems will be required. For an outline of these requirements, see pages with application for acceptance of the paving and drainage, waterways, sewer and water.

CONSTRUCTION PLAN REQUISITES

GENERAL

- A. All drawings are to be submitted on 7 folded sets of 24" x 36" sheets and 2 sets of 11"X17" sheets. Computer files shall be provided on 3 ½" floppy disks in AutoCAD release 14 or latest revision, for all sheets including cover page and detail sheet.
- B. A location map to scale shall be included on the drawing.
- C. Each sheet shall bear the seal and signature of the Design Engineer and include a title block, north arrow, Engineer's registration number, scale, date, references as to source of design information, notes, etc.
- D. Horizontal scale to be between 1"=20' and 1"=60'; vertical scale to be 1"=5'. Regardless of the scale, an overall layout of the proposed project shall be included on one sheet of the plans submitted, indicate all phases of construction, existing utilities and proposed improvements. Where there is more than one sheet of drawings, a sheet index diagram is required.
- E. All R/W and easements are to be clearly defined with easements referenced as to whether by plat or otherwise. All easements are to be shown on design and as-built drawings.
- F. Public and private roadways are to be properly labeled; the names and/or numbers of the roadways, streets, avenues, etc. are to be clearly indicated. If the property is inside a block, then the side streets are to be shown with the names written and distances from the subject property to the side streets are to be written. Indicate lot and block numbers, if applicable.
- G. The perimeter boundary lines of property to be serviced are to be clearly shown.
- H. The outline of buildings is to be shown.
- I. Benchmark positions and their vertical values are to be shown on the as-built drawings.
- J. The lot and block numbers of the property are to be shown. Adjoining lots and block numbers and owners are to be shown, reference as to plat is to be written, legal description of the property is to be written and indicated on the drawings. The street or mailing address is to be shown on the design drawing and on the as-built drawing.
- K. At the completion of the proposed improvements and prior to a final walk-through inspection, as-built plans are to be drawn and submitted to Environmental Services for review. All easements are to be clearly shown, all buildings are to be shown with their lot and block numbers, street addresses, postal addresses, etc., written thereon. As-built plans are to have all the design plan information plus any changes made during construction. As-built drawings are to represent what was constructed. As-built plans must be signed and sealed by a registered land surveyor.

- L. Easement descriptions are to be written clearly with a point of beginning and a point of termination. A sketch drawn to scale and on paper size 8" x 14" shall accompany the description. The sketch is to reflect the description and shall carry additional information to facilitate construction of the worded description. Street corners are to be shown and the description/sketch should relate the property being described to the streets. The scale shall be such to enable the direction of lines to be clearly observed. Where warranted, the sketch is to be on more than one sheet with proper match lines shown for each street. The City reserves the right to approve the description and sketch.
- M. The City reserves the right to approve all drawings (preliminary design, final designs, preliminary and final as-builts), as to technical representations, engineering consideration/designs, draftsmanship, clarity, scale, precision, confusion, etc., which drawings shall at all times be in conformity with City of Pembroke Pines Environmental Services minimum specifications and practices.
- N. Plans are reviewed ONLY for general compliance with City requirements. The Design Engineer MUST be completely responsible for the Engineering design, technical competency and accuracy. The plans are approved with the condition that they MUST conform to all City Ordinances, codes, standards and requirements. In case of conflict, the City Code of Ordinances shall supersede the plans. It shall be the responsibility of the Engineer of Record to have the plans approved by all other applicable federal, state, county or local agencies.

WATER AND SEWER

- A. Size and type of material to be shown for all water and sewer mains and service lines. Size and type of valves and other appurtenances to the systems shall be clearly indicated.
- B. The exact location and size of all mains are to be shown within the R/W or within an easement. All service line locations and sizes shall be indicated on plans. Distances from right-of-way lines, property lines and from physical features to the water and sewer mains are required on all drawings.
- C. Water distribution systems shall be designed so as to provide a continuous looped system with two (2) independent sources of water during all phases of construction.
- D. All line deflection points to be indicated (horizontal and vertical) on the plans. All water mains shall cross over drainage lines. If this is unavoidable, it shall be indicated on the plans.
- E. Profiles are required for gravity sewer mains and they are to have the following information: invert elevation; rim elevation; slopes and profile grade (center line or base line); continuous station measurements; continuous numbering of manholes; service laterals; other conflict features such as drainage pipes, etc.; kind of material, as PVC or DIP, etc. This information shall also appear on site plan. Manholes shall be installed away from parking areas. If this is unavoidable, proper measures shall be taken to prohibit the parking of vehicles over manholes.
- F. Off-set dimensions and detail drawings are required for all appendages, adjunct or auxiliaries from the main, full blown sketches are required for all areas where the details cannot readily be seen.

- G. Plans submitted for Lift Stations to be owned and operated by the City of Pembroke Pines, shall be wet well mounted, suction lift stations, manufactured by Smith & Loveless, Inc. (NO EXCEPTIONS). Submersible Stations will be approved on a case by case basis. Lift station plans and specifications shall include the following:
1. Plan, profile, detail and electrical schematics
 2. Flow calculations
 3. Head calculations
 4. Pump curves indicating efficiencies
 5. Model numbers and ratings shall be shown for all pumps and meters.
 6. Site Plan of the station with full measurements given and properly tied to property lines. Site Plan shall include fencing, vehicle double swing gate, pedestrian gate, panelwall, water service, driveways, emergency pump-out connection, generator receptacle, lightning protection, etc. Site plan shall be at a scale of 1"=10'.
 7. All of the lift station area within fenced limits shall be paved.
 8. Plans are required to specify a generator or pump capable of running the specified lift stations. Developer is required to supply one generator for each lift station proposed.
- H. Utilities shall be located within public rights-of-way or easements as indicated in Section 50.06 of the Code of Ordinances and shall be shown on all as-built drawings. Pump station easements will be treated on a case by case basis.
- I. Location of water meters and their sizes with service line sizes are to be shown. Meters are to be installed in green areas and in non-traffic areas as approved by Environmental Services. Developer shall furnish to the City, at no expense to the City, a supply of replacement meter heads for each size of meter 3-inch or larger that has been installed. For each size, the number to be furnished shall be equal to ten percent of the number installed, with at least one per size and all numbers greater than one rounded to the nearest whole numbers. Neptune Water Meter Company shall manufacture all meters.
- J. Apart from the showing of all meters, their sizes, locations etc. on the plan sheet, a summary note is to be written on the front sheet stating:
1. The number and size of water meters (if available)
 2. The calculation for capacity and the ERC/s
 3. The use for the building; i.e., commercial, stores, factory, etc.
- K. Plumbing Inspectors/Fire Department approval does not constitute approval of water and sewer construction plans.

PAVING AND DRAINAGE

- A. Provide seven (7) sets, signed and sealed, showing the following information:
1. Paving and drainage construction plans
 2. Paving and drainage details
 3. Paving and drainage specifications
 4. Pavement markings and signage plans
 5. Proposed off-site improvements plans
 6. Elevations of ambient ground along the perimeter of this parcel
 7. As-built information of existing roads, drainage, sidewalks, electric poles, and other facilities
 8. Information on lakes and canals
 9. Recorded and proposed easements and rights-of-way
 10. Plans showing street light pole location, detail and foot candles to be provided
- B. Provide one (1) set of:
1. Legal survey and legal descriptions
 2. Approved site plans/recorded plat with County/City requirements
 3. Drainage calculations
 4. Engineers estimate showing costs and quantities
 5. Approved address plan
 6. As-built cross sections of all existing lakes and canals
- C. Other items of concern are:
1. Identify all roads by numbers (no names please)
 2. Identify all lots/buildings by addresses
 3. Provide name, address, telephone number and organization of the person to whom the City shall address the review comments or send the approved plans
 4. Pay street light fee
 5. Pay plan review fee

LANDSCAPING

1. Apply for a permit, submitting three sets of signed and sealed plans. The submittal plans must match the approved planning and zoning plans. Submit current license and insurance forms.
2. The City requires that the developer/owner shall submit a performance bond for 110% of the cost of the landscape and irrigation value for the job prior to the issuance of the landscape and irrigation permits.
3. A pre-construction meeting with the contractor is required to review the scope of work as approved by the City.
4. Call for all irrigation and landscaping inspections and provide all necessary certifications and other supporting documents from the landscape architect.
5. The irrigation system shall be completed, inspected and in operation prior to the landscape sign off. Final landscape inspection must be approved prior to the issuance of the certificate of occupancy or release of the performance bond.

INSPECTION SERVICES GUIDELINES

The City may at its own discretion request the developer to provide at his expense an independent engineer approved by the City for inspections on all the above items, thus reducing the permit fee to 2% of contract price including labor and materials. The following guideline requirements are developed to be followed by all agencies providing these inspection services:

A. Personnel:

Inspector - minimum 10 hours/week on field at the job site. Must have at least two years of pre-engineering college education, or be a certified engineering inspector, and must have 3 years of directly related inspection experience.

Project Manager - minimum one visit per week to the job site. Must have a degree in engineering and must have minimum of 3 years of directly related experience.

Engineer - must be a registered Professional Engineer in the State of Florida. Must have complete knowledge and control over the project.

B. Reports:

Daily inspection reports shall be prepared by the inspector and shall be checked by the Project Manager. This report shall reflect the work performed, the work inspected/not inspected, the work approved/not approved, the problems with material, equipment, labor, workmanship, weather, etc., the deviations from approved plans, specifications and schedules, change order recommendations, field decisions, lab and field test reports/results, etc. and any questions for the Engineer or the City. The report shall be signed by the Inspector, and the Project Manager, and shall be forwarded to Environmental Services, c/o the Division Director of Environmental Services. Environmental Services reserves the right to stop construction activity if this documentation is not provided.

C. Meetings:

There shall be weekly progress meetings at Environmental Services not to exceed one-hour duration. The Project Manager or Inspector, the Contractor and the City Inspector shall attend this meeting. The inspector shall document the minutes of these meetings.

D. Responsibilities:

The Engineer shall be completely responsible to enforce the approved plans, specifications schedules, and all applicable codes and regulations, and to make sure that all necessary permits and approvals have been obtained for all agencies.

ENVIRONMENTAL SERVICES INSPECTIONS

A. WATER DISTRIBUTION

1. Connection to Existing Systems
2. Thrust Block Installations
3. Filling and Flushing
4. Hydrostatic Pressure Testing
5. Chlorination/Bacteriological Sampling

B. SEWER COLLECTION

1. Structures (prior to installation)
2. Connection to Existing Systems
3. Lamping
4. Structure Application of Protective Coatings (external and internal)

C. SEWER TRANSMISSION

1. Connection to Existing Systems
2. Thrust Block Installation
3. Flushing
4. Hydrostatic Pressure Testing
5. Pump Station Start-up

D. WATER AND SEWER REPORTS/DOCUMENTS REQUIRED

1. Inspection Reports as Outlined in Section IV: Inspection Services Guidelines
2. Hydrostatic Pressure Testing Report
3. Satisfactory Bacteriological Sampling Reports
4. Sewer Lamping Report
5. HRS Clearance Letter
6. DEP Certification of Completion Form
7. D.N.R.P. Approval Letter
8. Sanitary Sewer Televised Inspection Report and Tapes
9. Letter of Certification by Engineer of Record

E. PAVING:

1. Demucking and filling
2. Stabilized subgrade (prior to placement of limerock, (densities and stringline must be approved by Environmental Services).
3. Limerock basecourses (prior to placement of asphalt, rock as-builts and densities must be approved by Environmental Services.
4. Asphalt paving

5. Final inspection at the time of Certificate of Occupancy

F. PAVING REPORTS/DOCUMENTS REQUIRED

1. density test reports (subgrade and basecourse)
2. LBR test reports (subgrade and basecourse)
3. calcium carbonate reports (basecourse)
4. certification of type of asphalt
5. inspection reports for all underground utility lines such as: water, sewer, drainage, gas, power, phone, TV, etc.
6. certificate that the entire pavement area has been completely demucked and backfilled properly with suitable material.

G. DRAINAGE:

All joints and drainfields to be inspected prior to backfill. Drainage lamping will be conducted at time of final rock. Final inspection at the time of Certificate of Occupancy.

H. SIDEWALKS:

Alignment, depth and pedestrian ramp details to be inspected prior to concrete pouring. Final inspection at the time of Certificate of Occupancy.

I. TRAFFIC SIGNS, ROAD SIGNS & PAVEMENT MARKINGS:

To be inspected at final inspection at the time of Certificate of Occupancy.

J. LANDSCAPING INSPECTIONS

1. All landscaping must be installed per approved plan specifications, i.e., soils, fertilizers, staking and bracing.
2. All plant material must be FL #1.
3. Any plan substitutions must be pre-approved by the City.
4. Pre-construction meeting required to discuss specifics of project.
5. Final landscaping inspection (prior to issuance of Certificate of Occupancy, final landscape inspection must be approved.

K. IRRIGATION INSPECTIONS

1. Rough main line inspection.
2. All trenches to be inspected for depth.
3. All trenches to be inspected for clean fill.
4. All wiring and pipes to be inspected for compliance.
5. Final irrigation inspection (prior to final landscaping inspection).

L. SCHEDULING OF ENVIRONMENTAL SERVICES INSPECTIONS

1. Please call 954-518-9040 for all Inspections/Appointments 24 hours in advance. Inspections will not be conducted on the same day requested. Forward all documentation to Environmental Services, 8300 S. Palm Dr., Pembroke Pines, Florida 33025, c/o Division Director of Environmental Services.
2. In the event a test or inspection fails and required party is not present or the appointment requestor fails to cancel within one (1) hour, the requesting party will be charged a minimum fee as outlined in Section 150.16, to cover up to one (1) hour of the inspector's time.
3. Contractor is responsible for the cost of inspections for any construction activities occurring outside normal working hours (7:30am to 4:00pm), Saturdays, Sundays and holidays excluded. Arrangements for inspections outside normal working hours must be made a minimum of FIVE days in advance of construction activity.

M. SCHEDULING OF LANDSCAPE INSPECTIONS

1. Please call 954-392-2110 for all Inspections/Appointments 48 hours in advance. Inspections will not be conducted on the same day requested. Forward all documentation to the Landscaping/Planning Division, 10100Pines Blvd, Pembroke Pines, Florida 33027.
2. In the event a test or inspection fails and required party is not present or the appointment requestor fails to cancel within one (1) hour, the requesting party will be charged a minimum fee as outlined in Section 150.16, to cover up to one (1) hour of the inspector's time.

Note:

Additional inspections or documentation may be required as determined by Environmental Services.

STREET ADDRESSES

The owner/developer shall be responsible to prepare street address plan using the following guidelines:

1. Drawings shall be of regular size (24" x 36") with all lot, block, unit, building and road numbers and legal description, zip code and location of the development shown clearly.
2. For multi-story buildings, all units on the first floor shall commence with number 101 and all units on subsequent floors shall commence with the number of the floor as 201, 301 and the like.
3. Odd numbers shall be assigned to units on the north and east sides of the road and even number shall be assigned to units on the south and west sides of the road.
4. The addresses shall be reviewed and approved first by the U.S. Post Office, Pembroke Pines Branch, then Environmental Services and finally by the Building Official of the City of Pembroke Pines. Their signatures and stamps must appear on the address mylar.
5. The above approvals must be achieved prior to the submission of the site plan to the Planning and Zoning Board.
6. Please contact Environmental Services and the Building Department for further information.
7. The original mylar shall be filed with Environmental Services.
8. Copies of the approved address plan shall be submitted to the following agencies:

City of Pembroke Pines, 8300 S. Palm Drive, Pembroke Pines, Florida 33025

Building Department (2 copies)	Environmental Services (1 copy)
Code Enforcement Department (1 copy)	Crime Watch (1 copy)
Fire & Rescue Department (5 copies)	Elections Department (1 copy)
Public Services Department (1 copy)	Police Department (1 copy)

Southern Bell, 8601 West Sunrise Boulevard, Plantation, Florida 33322

Florida Power & Light Co., 7201 Cypress Rd, Plantation, FL 33317 Att: John Archer

Florida Power & Light Co., 4000 Davie Rd. Ext., Hollywood, Florida 33021, Att: Supervisor of Service Center

TCI, 18601 NW 2 Avenue, Miami, Florida 33169

911 Project Office, Att: Ginnie Bonura, 115 S. Andrews Ave.,#325, Ft. Lauderdale, FL 33301

Broward County Elections Dept., 115 S. Andrews Avenue, #102, Ft. Lauderdale, FL 33301

U.S. Post Office, SFMPC/Carrier Unit - (3 copies) to the corresponding zip code:

Vaughn Gittere 14900 SW 30 Street Miramar, Florida 33027 (954) 441-3418 Zip Codes 33027 to 33028	Jeanie Zambory – Carriers Sec 21001 Pines Blvd. Pembroke Pines, Florida 33029 (954) 436-4376 Zip Codes 33029	Donna or Tina 2350 N. University Drive Hollywood, Florida 33024 (888) 513-8177 Zip Codes 33024
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Ida

Stella

Flamingo & Pembroke
(954) 441-733
Zip Code 33025

Flamingo Branch
12590 Pines Blvd.
Zip Code 33026

ENVIRONMENTAL SERVICES PERMIT FEES
(City Ordinance No. 1111)

Based on % of Estimated Construction Price

1.	Landscaping	4.64%
2.	Lift Stations	4.64%
3.	Pavement & Drainage Systems including markings and signs	4.64%
4.	Sewage Collection Systems	4.64%
5.	Sewage Treatment Plants	4.64%
6.	Sidewalks, Slabs & Curbing	4.64%
7.	Water Distribution Systems	4.64%
8.	Water Treatment Plants	
9.	Tennis, Hardball & other Recreational Site Features	4%.64%
10.	Demucking & Filling	2%
11.	Excavation Pits, Lakes & Canals *Original Permit *Annual Renewal	
12.	Open cut of Roads	\$100/LF of pavement
13.	Excavation in Public R/W	\$1.00/LF of trench
14.	*Plan Review Fee:	
	Water and Sewer	\$783.56
	Paving and Drainage	\$783.56

- See Permit Schedule in Environmental Services

Notes:

1. Failure to request a final inspection within ninety (90) days after work is completed, permit must be renewed at one hundred percent (100%) of original permit FEE - \$100.00 minimum penalty.
2. On October 1st of each year, the fees referred to above shall be increased in accordance with the Consumer Price Index for urban consumers in the United States published by the Bureau of Labor Statistics for the twelve (12) months ending April of each year unless otherwise instructed by the City Commission. Notwithstanding the foregoing, any fees quoted as a percentage of either total estimated construction cost or original fee (for reinspections) shall remain unchanged until changed by the City Commission. These adjustments will be effective on the following October 1st.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That _____

Address _____

As Principals, and _____

a corporation, existing under the laws of the State of _____ and having heretofore complied with all of the requirements of the laws of the State of Florida regulating the admission of such corporation to transact business in this State and listed in the latest revision of circular 570 "Surety Companies Acceptable on Federal Bonds", as Surety, are held and firmly bound unto the City of Pembroke Pines of Broward County, a municipal corporation of the State of Florida, in the full and just sum of \$ _____ Dollars, lawful money of the United States of America, for which sum well and truly to be paid to said City of Pembroke Pines, the said Principal and the said Surety do hereby bind themselves, their heirs, executors, administrators, successors or assigns respectively, as the case maybe, jointly and severally, firmly by these presents.

WHEREAS, the above Principal is required to furnish a good and sufficient bond in the amount of one hundred and ten percent (110%) of the estimated cost of the public improvements listed on Exhibit "A", hereto attached, and to furnish labor, tools, equipment and materials for said improvements, together with all work incidental thereto, as fully set out in the approved engineering drawings, specifications and details on file in the Office of the City Engineer, entitled _____

NOW, THEREFORE, the condition of this obligation is such that if the above Principal, its successors and assigns shall, in good and workmanlike manner, perform the work and comply strictly with the conditions of said engineering documents (drawings, specifications and details), within _____ of its signing these presents, and shall indemnify and save harmless the said City and the City Engineer and its or his agents against damages that may happen to persons or property by reason of excavations or embankments, obstructions and all other work on or off the site or arising out of any act, neglect or omission of said Principal, his or its agents, servants or employees with relation to said work, and from all suits and acts of every nature arising out of claims of patentees of any process connected with the said work, or of any material or materials used upon the work, and shall pay all costs accruing if the improvements contract is canceled and a contract for finishing the work is let by the City, and shall pay all other expense lawfully chargeable to said Principal, then these presents shall be null and void, otherwise to remain in full force and effect. The time period for the completion of the work (failure to complete gives the City the right to call the bond) is not the life of this Bond. The bond shall continue in effect until called by the City, or released by the City.

Upon receipt and approval by the City Engineer of accurate "As-Builts" engineering drawings, which have been prepared and certified by the Designing Engineer, together with appurtenant details and exhibits, the City Engineer or his agent shall inspect the improvements agreed to be constructed for their initial acceptance. If his investigation reveals any insufficiencies, he shall notify the Principal, in writing, that the work is unacceptable.

If the Principal shall fail or refuse to correct said insufficiencies in workmanship, or materials, or both,

within ninety (90) days after said written notice by the City Engineer, then the City shall have the right, pursuant to public advertisement and receipt and acceptance of bids, to cause said insufficiencies in workmanship, or materials, or both, to be corrected. In such case, the Principal and Surety (to the extent of this bond) shall be

jointly and severally liable hereunder to pay to and indemnify the City upon the correction of said insufficiencies

in workmanship, or materials, or both, the full total cost thereof, including but not limited to, engineering, legal and contingent costs together with any damage, direct or consequential, which the City may sustain on account of the failure of the Principal to comply with all of the requirements hereof.

Upon recommendation by the City Engineer for initial acceptance and upon compliance by Principal with the applicable conditions as hereinabove stated, the City Commission shall consider the recommendation of the City Engineer and upon acceptance of said recommendation, shall by resolution, release this bond and reduce this obligation to twenty (20%) percent of the certified final cost of the improvements.

CONSEQUENTLY, the condition of the reduced obligation is such that if the Principal, its successors or assigns, shall have made all corrections and shall have paid all claims for the cost of correcting all insufficiencies in workmanship, or materials, or both, discovered within one (1) year of the date of initial acceptance of the improvements by the City Commission, then this obligation shall be void; else to continue in force and effect.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument by affixing their corporate names and seals hereto and causing their authorized representatives to sign these presents, pursuant to the authority of their governing bodies on this _____ day of _____, A.D., 20_____.

SIGNED AND SEALED
IN THE PRESENCE OF:

(Title) for the President

(As to Principal)

Attested by

(Title)

(Title) for the Surety

(As to Surety)

Attested by

(Title)

NOTE: The respective corporate seals should be affixed:

IRREVOCABLE LETTER OF CREDIT

The form for the Letter of Credit required by the City of Pembroke Pines must include and be in substantial compliance with the following:

Letter of Credit is to guarantee installation of public improvements indicated on Certified Estimated Cost (Exhibit "A" attached) and on plans prepared by (type name of Engineer) and approved by City Engineer on (type date of approval) for (name of project) and developer's obligation to comply with requirements of Pembroke Pines City Code.

The City is authorized to draw drafts at sight accompanied by a signed statement from the City of Pembroke Pines or its authorized representative that

1. (a) the drawing is due to (name of developer) failure to construct the public improvements
- (b) that the developer's obligations have not been completed and the City of Pembroke Pines has been notified that the bond will not be extended, or
- (c) that a Maintenance Bond that is required by the City of Pembroke Pines has not been provided.

The following paragraph must also be included:

"this instrument shall be renewed for successive periods of one (1) year each unless we provide written notices to the City Clerk and City Engineer via registered mail of our intent to terminate the credit herein extended, which notice must be provided at least thirty (30) days prior to the anniversary date of the original term hereof or any renewed one (1) year term, or unless the City of Pembroke Pines returns the original letter of credit together with notification that it may be terminated."

The form for the Letter of Credit must be approved by the City Attorney, Finance Director and the City Engineer.

BILL OF SALE ABSOLUTE

KNOW ALL MEN BY THESE PRESENTS, That _____

of the _____ of _____,

in the County of _____ and State of Florida, Party of the first part, for and in consideration of the sum of Ten Dollars, lawful money of the United States, to be paid by the CITY OF PEMBROKE PINES, a municipal corporation of the State of Florida, 10100 Pines Boulevard, Pembroke Pines, Florida, Party of the second part, the receipt whereof is hereby acknowledged, has granted, bargained, sold, transferred and delivered and by these presents does grant, bargain, sell, transfer and deliver unto the said Party of the second part, its successors and assigns, the following goods and chattels:

All of the Storm Drainage System Improvements; together with all appurtenances attached thereto, which lie within the Public Rights-of-Way or within easements provided for same, in the subdivision of

_____.

All of the above further described in "As-Built" Plans which are attached hereto as Exhibit "A" and quantities and costs breakdown which is attached hereto as Exhibit "B".

TO HAVE AND TO HOLD the same unto the said Party of the second part, its successors and assigns forever.

The Party of the First part does covenant to and with the Party of the second part, its successors and assigns, that it is the lawful owner of the said goods and chattels; that they are free from all encumbrances; that it has good right to sell the same aforesaid, and that it will warrant and defend the sale of the said property, goods and chattels hereby made, unto the said Party of the second Party's successors and assigns against the lawful claims and demands of all persons whomsoever.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this _____ day of

_____ 20__.

Signed, sealed and delivered in
presence of us:

(Seal)_____

(Seal)_____

STATE OF FLORIDA)
)SS:
COUNTY OF BROWARD)

I HEREBY CERTIFY that on this day, personally appeared before me, an officer duly authorized in the State and County aforesaid to take acknowledgments, personally appeared _____, to me known and known to me to be the person who executed the foregoing instrument, and acknowledged before me that executed the same.

WITNESS my hand and official seal in the State and County last aforesaid, this _____ day of _____ 20__.

NOTARY PUBLIC, STATE OF FLORIDA

My Commission Expires:

City of Pembroke Pines

EASEMENT DEDICATION

On this _____ day of _____, 20__,

_____.

having an address of _____,

(hereinafter "Grantor"), expressly grants an easement to the City of Pembroke Pines, a municipal corporation of the State of Florida, having an address at 10100 Pines Boulevard, Pembroke Pines, Florida 33026-3900, (hereinafter "Grantee"), subject to the following provisions and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable considerations paid by Grantee to Grantor, receipt of which is hereby acknowledged by both parties.

Grantor is the fee simple owner of that parcel of real property, a legal description of which is attached hereto as Exhibit "A", and incorporated by reference herein, (hereinafter "the servient estate").

Grantor hereby grants, bargains and sells to grantee, its successors and assigns, a perpetual easement under, over and upon a portion of the servient estate, a legal description of which is attached hereto as Exhibit "B" and incorporated by reference herein, (hereinafter "the easement area").

Grantee may use the easement area for _____

_____.

_____.

Grantee's right to utilize the easement area shall be exclusive to the extent that Grantor shall grant no easement or license, nor make any covenants, having the effect of permitting use of the easement area by one other than Grantee, except grantor may furnish an easement to other utilities that cross this easement at right angles.

Grantor may, for its own purposes, utilize the easement area and shall retain a right of free ingress and egress under, over and upon the easement area; provided that, in no event, shall any of the rights herein reserved to Grantor impede the easement herein granted or the exercise of the rights of use there under.

Grantor grants to Grantee, a perpetual non-exclusive easement upon the servient estate whereby Grantee shall have reasonable access necessary to fully exercise Grantee's rights within the easement area.

The provision of the easement shall be binding on the parties hereto and their respective successors and assigns as a covenant running with the binding upon the servient estate.

The easement shall not be released or amended without consent of the Grantee as evidenced by a document signed with the same formalities as this document.

Grantee shall record this document in the Public Records of Broward County, Florida.

This instrument contains the entire agreement between the parties relating to the rights granted and the obligations assumed pursuant to this instrument. Any oral representations or modifications concerning this instrument, shall be of no force and effect, excepting a subsequent modification reduced to writing, signed by the party to be charged therewith.

IN WITNESS WHEREOF, Grantor has hereunto set his hand and seal on the day and year first above written.

Signed, sealed and

delivered in the presence of: (GRANTOR)

Witness

Witness

STATE OF FLORIDA
COUNTY OF BROWARD

I HEREBY CERTIFY that on this day, before me, an Officer duly authorized in the State aforesaid and in the County aforesaid to take acknowledgements, personally appeared _____

to me known to be the person described in and who executed the foregoing instrument and acknowledged before me that _____ executed the same.

WITNESS my hand and official seal at Pembroke Pines, Broward County, Florida, this _____ day of _____, 20__.

Notary Public

My Commission Expires:

City of Pembroke Pines

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That _____

Address _____

As Principals, and _____

a corporation, existing under the laws of the State of _____, and having heretofore complied with all of the requirements of the laws of the State of Florida regulating the admission of such corporation to transact business in this State, as Surety, are held and firmly bound unto the City of Pembroke Pines of Broward County, a political subdivision of the State of Florida, in the full and just sum of _____

Dollars (\$_____), lawful money of the United States of America, for which sum well and truly to be paid to said City of Pembroke Pines, the said Principal and the said Surety do hereby bind themselves, their heirs, executors, administrators, successors or assigns respectively, as the case may be, jointly and severally, firmly by these presents.

WHEREAS, the Pembroke Pines City Code requires that a bond in the amount of twenty percent (20%) of the actual cost of the Subdivision Improvements be posted upon formal acceptance of said Subdivision Improvements by the City Commission and

WHEREAS, in compliance with said Maintenance Bond requirements, said Principal is required to furnish a good and sufficient bond in a surety company licensed to do business in the State of Florida conditioned upon the correction of all insufficiencies in design, workmanship and/or materials which are found within one year of the date of the formal acceptance of the Subdivision Improvements by the City Commission of the City of Pembroke Pines, Florida.

NOW, THEREFORE, the condition of this obligation is such that if the said Principal, its successors, legal representatives or assigns shall have made all corrections and shall have paid all claims for the cost of correcting all insufficiencies in design, workmanship and/or materials discovered within one year of the date of formal acceptance of the Subdivision Improvements by the City Commission of the City of Pembroke Pines, Florida then this obligation shall be void; else to continue in full force and effect.

Prior to the end of the calendar year following said City Commission's formal acceptance of the Subdivision Improvements warranted by this bond, the City Engineer shall inspect them for final release. If his investigation reveals any insufficiencies, then he shall notify the Principal, in writing, that the work is unacceptable.

The Principal and the Surety, jointly and severally, agree that said City of Pembroke Pines shall have the right to correct insufficiencies in design, workmanship and/or materials in the event the Principal should fail or refuse so to do within ninety (90) days after said written notice by the City Engineer, and, pursuant to public advertisement and receipt and acceptance of bids, cause said insufficiencies in design, workmanship and/or materials to be corrected. In such case, the Principal and Surety shall be jointly and severally liable hereunder to pay to and indemnify said City upon the correction of said insufficiencies in design, workmanship and/or materials, the final total cost thereof, including but not limited to, engineering, legal and contingent costs together with any damage, direct or consequential, which said City of Pembroke Pines may sustain on account of the failure of the Principal to comply with all of the requirements hereof.

Upon recommendation by the City Engineer for final acceptance and upon compliance by Principal with the applicable conditions as hereinabove stated, the City Engineer will then recommend to the City Commission the release of this reduced bond, by resolution.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument by affixing their corporate names and seals hereto and causing their authorized representatives to sign these presents, pursuant to the authority of their governing bodies on this _____ day of _____, A. D., 20_____.

SIGNED AND SEALED
IN THE PRESENCE OF:

(Title) for the President

(As to Principal)

Attested by

(Title)

(Title) for the Surety

(As to Surety)

Attested by

(Title)

NOTE: The respective corporate seals should be affixed.

Between

CITY OF PEMBROKE PINES, FLORIDA

and

RELATING TO

SUBDIVISION IMPROVEMENTS

for

This is an agreement ("Agreement") between: CITY OF PEMBROKE PINES, FLORIDA, a political subdivision of the State of Florida, its successors and assigns, hereinafter referred to as "CITY", through its Board of City Commissioners,

AND

its grantees, successors in interest, and assigns, hereinafter referred to as "OWNER".

WITNESSETH

WHEREAS, the plat/site plan known as _____ was approved by the CITY on _____, 20____; and

WHEREAS, the Water and Sewer Utility Plans/Paving and Drainage Plans for the above plat/site plan were approved by the CITY on _____, 20____; and

WHEREAS, the CITY requires that security to insure completion of the construction of the subdivision improvements relating to water, sewer, drainage, and road construction shall be provided to the CITY prior to the issuance of a permit for the installation of Subdivision Improvements.

WHEREAS, this Agreement intends to create a lien as security for the completion of Subdivision Improvements.

NOW, THEREFORE, in consideration of the mutual terms, conditions, promises and covenants hereinafter set forth, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, CITY and OWNER hereby agree as follows:

1. Improvements. The OWNER hereby agrees to construct the improvements (collectively: "Subdivision Improvements") defined in Exhibit "A" (Subdivision Improvements) prior to _____ ("Completion Date") in conformance with the CITY standards and subject to CITY inspections.

The Subdivision Improvements described in this paragraph shall be installed in accordance with applicable CITY and State of Florida standards and specifications. Construction shall be subject to inspection and approval by the CITY and other applicable governmental entities, if any.

2. Creation of Lien. This Agreement shall be recorded in the Official Records of Broward County, Florida, and hereby creates a lien in favor of the City of Pembroke Pines, Florida, against that real property described in Exhibit "B" attached hereto and made a part hereof ("Lien Parcel"), for the purpose of securing to the CITY the performance of the Subdivision Improvement obligations contained in Section 1 herein. Should the OWNER fail to complete construction of a Subdivision Improvement listed in Section 1 herein by the time specified therein or fail to pay any sums as specified therein, then, in that event, OWNER shall be deemed in default under this Agreement and the amount specified for the particular Subdivision Improvement and the amounts for all other Subdivision Improvements not then completed may be foreclosed or otherwise enforced by the CITY in the same manner as a foreclosure of a mortgage on real property; provided, however, that in the event of any such default by OWNER, CITY shall give written notice to OWNER and any mortgage holder of such default, and OWNER and/or mortgage holder shall have thirty (30) days from receipt of such written notice in which to cure, or commence to cure, such default, in which event CITY shall not foreclose or otherwise enforce the Lien for so long as OWNER and/or mortgage holder continues to diligently cure such default.

- (a) The lien of any mortgagee on the real property described in Exhibit "B" shall be subordinate to the rights of the CITY with respect to the Lien created by this Agreement. The OWNER shall cause this Agreement to be executed by the holder of any such mortgage(s) ("mortgagees") for the sole purpose of consenting to such subordination. CITY hereby acknowledges and agrees that The Mortgagees' execution of this Agreement shall not obligate them to any personal liability, nor shall they be obligated to perform any or all of the provisions of this Agreement.

- (b) When the OWNER'S Subdivision Improvement obligations created hereby have been fully constructed, the CITY shall promptly cause evidence of such completion and discharge of the Lien to be entered in the Official Records of Broward County. At the request of the OWNER, upon performance of all or part of the Subdivision Improvements, the CITY may grant the OWNER a partial release of the lien created hereby.
 - (c) The lien created herein shall be released in whole or in part upon the substitution of equal value collateral in the form of a Letter of Credit or by cash. In the event the OWNER shall request a partial release of the lien created herein, it shall substitute cash or Letter of Credit equal to the pro rata value of the subdivision improvements requested to be released.
3. Subdivision Improvement Contracts. OWNER agrees that any Subdivision construction contract(s) entered into by OWNER for construction of the Subdivision Improvements, located within dedicated rights-of-way, shall provide that the contractor:
- (a) Indemnify and save harmless the CITY, its agents and employees, from or on account of any injuries or damages received or sustained by any person or persons during or on account of any operations connected with the construction of the Subdivision Improvements; or by or in consequence of any negligence in connection with the same; or by use of any improper materials or by or on account of any act or omission of the said contractor, subcontractor, agents, servants or employees; and
 - (b) Maintain in full force at all times during the life of the construction public liability insurance in an amount not less than FIVE HUNDRED THOUSAND DOLLARS (\$500,000.00) for injuries, including willful death, to any one person and, subject to those same limits for each person, in any amount not less than ONE MILLION DOLLARS (\$1,000,000.00) for damages as a result of each occurrence and property damage insurance and in an amount not less than FIVE HUNDRED THOUSAND DOLLARS (\$500,000.00) for damages on any one occurrence. Such policy shall specifically protect the CITY.

4. Notices. The addresses to which any and all notices required or allowed by this Agreement shall be delivered, are as follows:

AS TO CITY:

City Manager
City of Pembroke Pines
10100 Pines Boulevard
Pembroke Pines, FL 33026-3900

COPY TO:

Samuel S. Goren, City Attorney
Josias & Goren, P.A.
3099 East Commercial Boulevard
Fort Lauderdale, FL 33308

AS TO OWNER:

COPY TO:

unless the address is changed by the party by like notice given to the other party. Notice shall be in writing, mailed certified mail, return receipt requested, postage prepaid and shall be deemed delivered upon mailing or upon hand delivery to the address indicated. Notwithstanding the foregoing, notice, requests or demands or other communications referred to in this Agreement may be sent by telegraph or federal express, but shall be deemed to have been given only when received.

5. Effective Date. The effective date ("Effective Date") of this Agreement shall mean the last day upon which it becomes fully executed by all parties hereto. This Agreement shall not become effective until fully executed.
6. Captions and Paragraph Headings. Captions and paragraph headings contained in this Agreement are for convenience and reference only and in no way define, describe, extend or limit the scope of intent of this Agreement nor the intent of any provisions hereof.
7. No Waiver. No waiver of any provision of this Agreement shall be effective unless it is in writing, signed by the party against whom it is asserted and any such written waiver shall only be applicable to the specific instance to which it relates and shall not be deemed to be a continuing or future waiver.

AGREEMENT BETWEEN CITY OF PEMBROKE PINES, FLORIDA AND _____
RELATING TO SUBDIVISION IMPROVEMENTS FOR _____

- 8. Exhibits. All Exhibits attached hereto contain additional terms of this Agreement and are incorporated herein by reference. Typewritten or handwritten provisions inserted in this Agreement or attached hereto shall control all printed provisions in conflict therewith.
- 9. Binding Effect. The benefits and obligations contained in this Agreement shall inure to the benefit of and by binding upon the respective successors and assigns of the parties hereto.
- 10. Modifications. No claimed modification of this Agreement shall be binding upon either of the parties unless in writing duly executed by the party sought to be charged therewith.
- 11. Further Assurances. The parties hereby agree to execute, acknowledge and deliver and cause to be done, executed, acknowledged and delivered all such further assignments, transfers and assurances and to perform such acts as shall reasonably be requested of them in order to carry out this Agreement.

IN WITNESS WHEREOF, the parties hereto have made and executed this Agreement on the respective dates under each signature: the City through its City Commissioners, signing by and through its Mayor, authorized to execute same by City Commission action on the ____ day of _____, 20____, and OWNER signing by and through its _____, duly authorized to execute same.

CITY

ATTEST:

CITY OF PEMBROKE PINES,
through its City Commission

City Clerk

, Mayor

____ day of _____, 20____

APPROVED AS TO FORM:

City Attorney

AGREEMENT BETWEEN CITY OF PEMBROKE PINES, FLORIDA AND _____
RELATING TO SUBDIVISION IMPROVEMENTS FOR _____

OWNER

By: _____

By: _____

CORPORATION/PARTNERSHIP

STATE OF FLORIDA)
) SS:
COUNTY OF _____)

BEFORE ME personally appeared _____,
as _____ of _____, known to me to be the person
described in and who executed the foregoing Agreement and acknowledged to and before me that he
executed same for the purposes expressed herein.

WITNESS my hand and official seal, this ___ day of _____, 20__.

Notary Public

My commission expires: _____

ROADS

§ 150.40 ADOPTION OF COUNTY SPECIFICATIONS.

The Broward County "General Specifications for Road and Bridge Construction and Minimum Engineering and Construction Standards for Water and Sewer Installations and the General Specifications for Construction Methods and Procedures for Installation of Gas, Water, and Sewer Lines," now on file in the office of the City Clerk in compliance with F.S. § 165.19, is adopted by reference, subject to any amendments or deletions contained in this code, and to any provisions of this code inconsistent therewith.

§ 150.41 SUBSTITUTION OF CERTAIN TERMS, PENALTY.

(A) Wherever the context permits in the specifications adopted by reference in §150.40, there shall be substituted for the officers, boards, departments, and commissions mentioned therein-comparable officers, boards, departments, and commissions of the city. Wherever the term "Broward County" is used therein, the term "City of Pembroke Pines" shall be substituted.

(B) Wherever a penalty is provided therein, there shall be substituted therefor the penalty as provided in § 10.99.

§ 150.42 BUILDING PERMIT, FEE PAYMENT REQUIRED.

No work or construction governed under the terms of this subchapter or for which a permit fee is assessed shall be commenced unless a permit for the same is obtained from the Building and Zoning Department of the city and a fee paid thereto in accordance with the schedule of fees in § 150.43.

§ 150.43 PERMIT FEE SCHEDULE.

The permit fees for public works construction in the city are available in the City Clerk's office.

§ 150.44 IMPOSITION OF FINE, PENALTY NOT TO EXCUSE VIOLATION.

The imposition of any fine or penalty for a violation of this subchapter shall not be construed as excusing or permitting the continuance of the violation.

§ 150.90 REMOVAL OF BUILDING MATERIALS, DEBRIS REQUIRED.

(A) Upon completion of the proposed development, building, or construction, all muck, organic matter, clay, rock, and all other unsuitable materials, including, but not limited to previously-demolished buildings, building foundations, pipes, septic tanks, appurtenances, timberbrush, stumps, roots, rubbish, debris, and all other obstruction

resting on or protruding through the surfaces of the existing grounds and excavated areas shall be completely removed by any developer, builder, or permit holder from all building pads and surrounding public rights-of-way, underground utility easements, drainage ponds, and storm water disposal and retention areas without positive drainage systems.

(B) Organic matter may be left when properly certified by a registered engineer attesting to compliance with the South Florida Building Code.

(C) It shall be the responsibility of the developer to construct or improve, or to post a bond guaranteeing improvement to, all roadways adjacent to and within the property being developed. There shall be no requirement to bond improvements for private roadways on private property. All improvements for private roadways must be 100% complete prior to the issuance of certificate of occupancy. No certificate of occupancy shall be issued unless all private roadways are completed, or uncompleted portions guaranteed by posting bond.

(D) The term **DEVELOPER** shall include any party, including natural persons, partnerships, firms, corporations, or business entity conducting as a business demucking, excavation, fill, grading, subgrading, basecoursing, asphalt and concrete paving, sidewalk, swale, landscaping, irrigation, curbing, gutter, drainage system installation, pavement marking, or traffic sign, road sign, traffic signal, guardrail, or street lighting installation.

(E) The term **ROADWAY** shall include all public and private roads, highways, alleys, driveways, and parking areas, and other asphalt or concrete pavements.

(F) The **IMPROVEMENTS** shall include, but not be limited to, demucking, excavation, fill, grading, subgrade, basecourse, asphalt and concrete paving, sidewalk, swale, landscaping, irrigation, curbing, gutter, drainage system, pavement marking, traffic sign, road sign, traffic signal, guardrail, and street lighting.

§ 154.15 PERFORMANCE BOND.

(A) No plat of lands shall be approved unless the person seeking the approval of the plat first furnishes the city with a good and sufficient performance bond, letter of credit, cash bond or subdivision improvement agreement, in a form approved by the City Commission after review by the City Attorney (hereinafter referred to collectively as the "Security"). If a bond is selected as the form of security to be provided to the city the bond shall be executed by the owner and a corporate surety company, satisfactory to the city. The amount of the security shall be in a sum equal to, or greater than, the estimated cost of the improvement, as a guarantee bond, plus 10%, conditional upon the construction and paving of streets, alleys, and other improvements and rights-of way shown on the plat, the installation and furnishing of street markers, necessary fill, drainage wells, culverts, gutters, sewers, and other necessary drainage facilities in

accordance with the specifications of the city and within such time as may be required by the City Commission.

§ 154.16 COST OF STREET MARKERS.

The party seeking approval of a plat shall pay the cost of necessary street markers and their installation. The street markers shall be required where two or more streets intersect and one street marker shall be required where the streets join in a "T".

§ 154.45 PERMIT, FEE REQUIRED.

The owner of the platted lands shall obtain a permit from the Building and Zoning Department before commencing construction and paving of streets, and shall pay a permit fee in accordance with the schedule in § 150.43.

§ 154.46 STREETS, ALLEYS, AND THE LIKE TO BE PAVED.

The streets, alleys, and rights-of-way, however designated, shown on the plat, shall be paved in accordance with the city's specifications contained in § 150.40.

PUBLIC ROADS

§ 150.90 (G) All improvements shall be done in accordance with the following basic criteria:

(1) Design criteria. As a minimum, all pavements shall be designed in accordance with the latest edition of "Manual of Minimum Standards for Design, Construction, and Maintenance for Streets and Highways" as published by the State of Florida, and the provisions of the Broward County Water Resources Management Division's "Grading and Drainage Regulations and Standards," except as modified herein, and the provisions of the city code of ordinances.

(2) Construction criteria. Construction materials and methods shall meet the requirements of the latest edition of the Florida Department of Transportation "Standard Specifications for Road and Bridge Construction" and supplements, except as modified herein, and the provisions of the city code of ordinances.

(3) Typical sections. Sketches of typical sections for various rights-of-way are attached to Ord. 792, which is on file in the office of the City Clerk and available for public inspection during the customary business hours.

(4) Subgrade. The entire width of the right-of-way shall be completely demucked before construction of the roadway begins. No material of classes A-5, A-7, or A-8 shall be allowed. All material supporting the roadway and shoulders shall be stabilized to have a minimum LBR of 40. Sub-grades shall be compacted to 95% of maximum density per AASHTO T-180.

(5) Basecourse. Limerock bases shall be 6 inches for driveways and parking areas, 8 inches for local subdivision public and private roads, and 12 inches (in two lifts) for arterial roads. Limerock of the Miami formation shall be used, and shall have a minimum carbonate content of 60% (70% for arterial roads), and a minimum LBR of 100. Base material shall be compacted to a density of not less than 98% of maximum density as determined by AASHTO T-180.

(6) Wearing (surface) courses.

(a) For all roads except arterial, the surface course is to be a minimum one and one-half (1½") inch asphaltic concrete FDOT type S-III (in two lifts).

(b) For arterial roads, surface courses are to be of asphaltic concrete construction in two lifts as follows:

1. Bottom course -minimum one and one-fourth (1 1/4") inch thick (D.O.T.) type S-1.

2. Top course -minimum three-quarter (3/4") inch thick (D.O.T.) type S-3. A tack coat shall be used between paving courses, and a prime coat shall be used on the finished rock base.

(7) Curb/gutter. All curb elements on arterial roads shall have a limerock foundation or "pad" of at least four-inch thickness, compacted to 98% of maximum density, per AASHTO T-180.

(8) Sidewalks. Sidewalks shall be of concrete with a minimum thickness of four inches, six-inch thickness required at driveways.

(9) Underground utilities. All underground utility mains and structures, for water, sewer, gas, drainage, telephone, power, cable TV, and others, must be installed, inspected, tested, and approved prior to any subgrade construction.

(10) Traffic engineering. The construction plans must include plans for traffic signs, street number signs, pavement markings, and street lighting.

(H) Detail plans must be reviewed and approved by the Engineering Division.

§ 154.32 DESIGN STANDARDS FOR STREETS AND ALLEYS.

(A) Conformity to trafficways plan. The location, direction, and width of all streets, roads, and highways shall conform to the official trafficways plan where such a plan is in existence and is applicable.

(B) Relation to existing street system. The arrangement of streets in new subdivisions shall make provisions for the proper extension of existing dedicated streets in existing subdivisions, where such extension is appropriate.

(C) Provisions for platting adjoining unplatted areas. The arrangement of streets in new subdivisions shall be such as to facilitate, and coordinate with, the desirable future platting of adjoining unplatted property of a similar character, and to provide for local circulation and convenient access to neighborhood facilities.

(D) Protection from through traffic. Minor and collector residential streets shall be laid out and arranged so as to discourage their use by through traffic. Residential streets shall not connect with industrial areas unless it is unavoidable.

(E) Arterial street frontage.

(1) Residential lots, zoned or intended to be zoned in an R-1A, R-1B, R-1C, R-1P, R-2P, R-2, R-2U, R-3, R-3A, or R-3U zoning district shall not be designed to front on an arterial street or trafficway. These lots shall be designed as reverse frontage lots with a planting strip at least ten feet in width on the rear end of the lots on the arterial

street or trafficway. The planting strip shall be restricted against use for vehicular access to the arterial street or trafficway.

(2) The regulations provided in division (E)(2) shall apply to all areas of the city, except for areas lying within county territory or other incorporated municipalities. Where a residential subdivision or residential property abuts an existing or proposed arterial street, the Board may require marginal access streets, reverse frontage with screen planting contained in a nonaccess reservation along the rear property line, deep lots with or without rear service alleys, or any other treatment that may be necessary for adequate protection of residential properties and to ensure separation of through and local traffic.

(F) Plats adjacent to railroad or expressway right-of-way. Where a subdivision borders on or contains a right-of-way for a railroad, expressway, drainage canal, or waterway, the Board may require a street or a fence approximately parallel to and on each side of the right-of-way, at a distance suitable for the appropriate use of the intervening land. The distances shall be determined with due regard for the requirements of approach grades for future grade separations. All alleys must be paved.

(G) Reserve strips. Reserve strips controlling access to streets shall be prohibited, except where their control is definitely placed in the city under conditions approved by the Board.

(I) Half streets. New half or partial streets shall not be permitted, except where essential to reasonable subdivision of a tract in conformance with these regulations or where satisfactory assurance for dedication of the remaining part of the street is provided. Wherever a tract to be subdivided borders on an existing half or partial street, the other part of the street shall be dedicated and paved within the tract.

(J) Future resubdivision. If lots resulting from original subdivision are large enough to permit or require resubdivision, or if a portion of a tract is not subdivided, adequate street rights-of-way to permit further subdivision shall be provided as necessary.

(K) Dead-end streets. Dead-end streets shall be prohibited, except where appropriate as stubs to permit future street extension into adjoining unsubdivided tracts, or when designed as cul-de-sacs.

(L) Cul-de-sac streets.

(1) Cul-de-sacs, permanently designed as such, shall not exceed 400 feet in length, except on finger islands.

(2) Cul-de-sacs shall be provided at the closed end with a circular dedicated area not less than 80 feet in diameter for turnaround purposes, except that on finger islands the diameter of a turnaround may be reduced to 70 feet.

(M) Street rights-of way.

(1) Unless otherwise indicated or required by the trafficways plan, or for sufficient reasons shown that exceptions should be made in specific cases, street rights-of-way shall not be less than the following.

Street Type	Right-of-Way Feet
Major arterial thoroughfare of through section- line road.	106
Secondary arterial thoroughfare or nonthrough section- line road. Collector.	80 60
Minor, for apartments, business, industrial.	60
Minor, for one- and two-family dwellings.	50
Marginal access.	40

(2) Additional right-of-way width may be required to promote public safety and convenience, or to ensure adequate access, circulation, and parking in high-density residential areas, commercial areas, and industrial areas.

(3) Where a subdivision abuts or contains an existing street of inadequate right-of-way width, additional right-of-way in conformance with the above standards may be required.

(N) Alleys.

(1) Alleys shall be provided to serve multiple-dwelling, business, commercial, and industrial areas. The Board may waive this requirement where some other definite and ensured provision is made for service access, off-street loading and unloading, and parking consistent with and adequate for the uses permissible on the property involved.

(2) The width of any alley shall be at least 20 feet.

(3) Changes in alignment of alleys shall be made on a center line radius of not less than 37 feet.

(4) Dead-end alleys shall be avoided where possible. However, if unavoidable dead-end alleys shall be provided with adequate turnaround facilities for service trucks at the dead end, but with the minimum external diameter of 94 feet, or as determined to be adequate by the Board.

(O) Easements.

(1) Easements across lots or centered on rear or side lot lines shall be provided for public utilities where necessary and shall be at least 15 feet in total width.

(2) Where the subdivision is traversed by a watercourse, drainageway, canal, or stream, there shall be provided a storm water easement or drainage right-of-way conforming substantially with the line of the watercourses, and such further width or construction, or both, as will be adequate, for the purpose. Parallel streets or parkways may be required in connection therewith where necessary for service or maintenance.

(3) Easements may be required for drainage purposes of such size and location as may be determined by the City Engineer.

(P) Street alignment.

(1) Curvilinear streets are recommended for residential, minor, and collector streets in order to discourage excessive vehicular speeds and to provide attractive vistas.

(2) Whenever a street changes direction, or connecting street lines deflect from each other, by more than ten degrees, there shall be a horizontal curve.

(3) To ensure adequate sight distance, minimum center line radii for horizontal curves shall be as follows.

Street Type	Feet
Minor streets	150
Collector streets	300
Secondary arterial streets and section-line roads	500
Major arterial thorough- fares.	750

(4) A tangent at least 100 feet long shall be provided between reverse curves on collector streets, and at least 250 feet long on major and secondary thoroughfares and section-line roads.

(Q) Street intersections.

(1) Streets shall be laid out to intersect as nearly as possible at right angles. No street shall intersect another at an angle of less than 60 degrees, except at a "Y" intersection of two minor streets.

(2) Multiple intersections involving the junction of more than two streets shall be prohibited, except where found to be unavoidable by the Board.

(3) "T" intersections of minor and collector streets are to be encouraged.

(4) As far as possible, intersections with arterial streets shall be located not less than 800 feet apart, measured from center line to center line.

(5) Streets entering opposite sides of another street shall be laid out directly opposite each other or with a minimum offset of 125 feet between their center lines.

(6) Property line radii at street intersections shall be 15 feet for minor streets. Where the angle of intersection is less than 60 degrees, a greater radii may be required by the Planning and Zoning Board.

(R) Excessive street widths. Streets shall not be platted to a width more than 150% of the minimum width specified in these regulations for the type of street involved. No street shall be platted for center island development, except where the center islands may be desirable or necessary for traffic.

(T) Minimum street grade and elevation. All roads in new subdivisions within the city shall have a minimum crown of road elevation of 6 feet M.S.L. The longitudinal slope criteria shall be 0.3% for valley-gutter sections and curb and gutter sections, and 0.5% for swale section. These minimum requirements shall also apply to nonplatted subdivisions which include private streets or ways.

(U) Review and approval of as-built road rock grades by the Engineering Division prior to paving shall be part of the inspection criteria.

PRIVATES ROADS

§ 154.32(H) Private roads in residential zoning districts shall be allowed in accordance with the following criteria:

(1) The term "roadway" shall include the driving lanes, curbing, landscaping strips, and sidewalks.

(2) Private roadway shall have a minimum width of 40 feet.

(3) The roadway width shall include minimum 24 feet of asphaltic pavement for vehicular traffic, curb and gutter along each edge of roadway pavement for drainage and four feet of concrete sidewalk along each side of roadway pavement for pedestrian traffic. Roadways, with a minimum width of 50 feet, shall not be required to have concrete curb and gutter for drainage. The City Commission may waive the requirements for sidewalks along one or both sides of a private road. Curb and gutter shall not be required when sidewalks are not required, or where sidewalks are located outside the 40 foot roadway width.

(4) The roadway pavement shall be constructed of minimum 12 inches stabilized subgrade (minimum 40 LBR) minimum eight inches compacted limerock basecourse and minimum 1½ inches asphaltic surface course (in two lifts). No muck or other organic material shall not be allowed in the roadway pavement.

(5) Where individual mail boxes are desirable, they shall be installed in a 2.5 foot wide grass strip to be provided between the curb and the sidewalk.

(6) All pavement markings and signage shall conform to "Broward County Traffic Engineering and "Manual of Uniform Traffic Control Devices" standards. All pavement markings shall be of thermoplastic material.

(7) No street names shall be allowed. Street number signs shall be provided at each intersection and other locations, and shall conform to Broward County Standards.

(8) Sod and irrigation shall be provided, as needed, in the 2½ foot strips in the 40-foot roadway. No trees shall be allowed.

(9) Street lighting shall be provided to deliver an illumination equal to that provided for public roads but not less than an average illumination of one-half footcandle within the roadway. The street light poles shall be made of concrete, fiberglass, or metal poles which meet the standards set forth below, and all cables and wires shall be underground. The poles and lines shall be located outside the roadway width.

(a) Standards for light poles. Light poles shall withstand wind loads as required by South Florida Building Code, latest edition. The pole shall be non-conductive, non-corrosive, and shall be able to carry a minimum weight of 100 pounds at its top. Installation shall be done by direct burial. The pole material shall meet the following ASTM standards: D635, A153, A356, A319, A307.

(b) Design and style standards for light poles. The design and style of decorative light poles shall be reviewed by the Planning and Zoning Board in the same fashion as site development plans are currently reviewed under § 155.395 of this code.

(10) Sketches entitled "Typical Section for Private Roads shall be available in the engineering department for inspection and may provide guidance to builders of private roads.

(11) The city will not accept the conveyance and/or the maintenance responsibility for any private road unless the private road has been inspected by the city and found to comply fully with the city's standards for public roads existing at the time of acceptance as set forth in § 154.32. discourage excessive vehicular speeds and to provide attractive vistas.

§ 154.38 ACCEPTANCE OF IMPROVEMENTS BY CITY; MAINTENANCE.

(A) Approval of improvements by the City Inspector shall not be deemed acceptance by the city. Acceptance shall be only by action of the City Commission, and shall be contingent upon a favorable inspection report. The subdivider shall remain responsible for all maintenance of any improvements for a period of not less than 12 months following completion of construction of the improvement. The guarantee bond, as required in § 154.15, shall provide for reimbursement to the city for any maintenance expense incurred by the city in correcting or curing any defects in the improvements installed or constructed by the subdivider or upon the failure of the subdivider or his contractors to perform the work after due notice. The subdivider shall be allowed no less than 15 days after notice to comply with the notice. An improvement shall not be accepted until all improvement and maintenance work is complete.

(B) Acceptance of an improvement for the city shall be solely by a resolution of the City Commission upon recommendation of the various departments that the improvements are in good repair and in accordance to city standards and specifications.

(C) Acceptance of an improvement by appropriate City Commission action shall constitute release of the performance bond.

PARKING AREAS

§ 154.35 DESIGN STANDARDS FOR PARKING AREAS.

(A) Parking lots for industrial, commercial and recreational, subdivisions and for residential subdivisions with multi-family units or single-family attached units shall be constructed in accordance with the following criteria:

(1) Parking area. The term "Parking Area" shall include the driving lanes, parking spaces, curbing, landscaping, lighting signs, pavement markings, guardrails and drainage.

(2) Sketches. The sketches entitled "Standard Parking Area Details" shall be a part of these minimum standards and shall be available in the Engineering Division for inspection.

(3) Pavement construction. The parking area pavement shall be constructed of 12 inches compacted and stabilized subgrade (minimum 40 LBR), minimum six 6 inches compacted limerock basecourse and minimum (1½ inches) compacted F.D.O.T. Type S-3 asphaltic surface course (in two lifts for residential subdivisions). No muck or other organic material shall be allowed under the pavement. The pavement shall have a cross slope of 2% and a longitudinal slope of 0.5% minimum for normal crown section. The pavement shall have a crown slope of 2.0% and a longitudinal slope of 1.0% minimum for inverted crown section on runs greater than 100 feet. The pavement shall have a crown slope of not less than 1.0% with an average slope of not less than 2.0% and a longitudinal slope of not less than 0.5% on runs less than 100 feet. The run is defined as the length of pavement between high and low elevation points. The lowest point in the pavement shall not be lower than an elevation of 6.0 feet M.S.L. All centerline turning radii must be minimum 50 feet.

(4) Curbing. All landscaped areas shall be provided with continuous concrete curbing around them. Extruded curbing, poured on top of the pavement shall be allowed provided that the pavement extends at least three inches behind the curb, the ends of the asphaltic surface course and limerock basecourse layers behind and underneath the curb are completely wrapped around by a heavy duty moisture barrier, material and installation to be approved by the City Engineer, and the curbing is anchored to the pavement with number four steel bars at ten foot intervals. Otherwise, F.D.O.T. Type D 6"x18" or 16"x12" curbing shall be provided.

(5) Driving lanes. Driving lanes shall have a minimum clear width of 24 feet for two-way traffic, 15 feet for one-way traffic and 12 feet for drive-thru/drop-off traffic. When parking spaces are provided at 60 degrees angle, the one-way driving lanes shall be minimum 18 feet clear. A 24 inches wide white stop bar, along with 25 feet of double yellow lines, shall be provided at the end of each driving lane.

(6) Parking spaces. Standard parking spaces shall be minimum ten feet wide and 20 feet long. Angle parking shall be designed to provide a clear 10 feet by 20 feet rectangle for each parking space. Handicapped parking space shall be 12 feet by 20 feet minimum. Parking spaces for parallel parking or for compact cars shall not be allowed. The overhang portion of the vehicle (three feet maximum) may be unpaved and sodded. Continuous concrete curbing or individual six feet long concrete car stops shall be installed for each space. Provide four inches wide white lines on either side of each space identifying the limits of the space. The number of parking spaces shall conform to § 155.251 of the City Code of Ordinances.

(7) Pavement markings and signs. All pavement markings and signs shall conform to "Broward County Traffic Engineering" and "Manual of Uniform Traffic Control Devices" standards. All pavement markings shall be of thermoplastic material, except the four-inch white lines on either side of a parking space.

(8) Landscaping. All landscaping shall conform to the requirements of Chapter 153 of the City Code of Ordinances. All landscaped areas shall be provided with automatic lawn irrigation systems.

(9) Lighting. Lighting shall be provided to deliver an average illumination of one-half footcandle at any point within the parking area, for residential subdivisions and an average illumination of two footcandles within the parking area for non-residential subdivisions. The light poles shall be made of concrete, metal or fiberglass and all wires and cables shall be underground. Wooden poles and overhead lines shall not be allowed.

(10) Drainage. All drainage lines and structures shall be installed in accordance with the "Grading and Drainage Regulations and Standards. Broward County Transportation Department. Water Management Divisions, latest edition. Surface water along inverted crown shall be allowed to travel only in straight lines. Catch basins shall be provided at each change of direction.

(11) Guardrails. F.D.O.T. type guardrails shall be provided where the edge of the parking area pavement is closer than 14 feet from the top of the bank of a lake, canal or other waterway. The guardrail shall be installed along the full length of such pavement, at a minimum clear distance of four feet.

(12) Enforcement. The city's Engineering Department shall be responsible to review plans, issue construction permits, conduct inspections and approve all parking areas in the city.

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(D) Minimum standards for private parking lots.

(1) All buildings and structures for private parking shall be maintained in a secure, safe, and attractive condition. Deteriorated or rusted metal covering on any such existing or subsequently constructed carport structure shall be repaired or replaced so as to render same in a safe and attractive condition that is neither physically nor visually a blighting influence.

(2) The off-street parking facilities shall be identified as to purpose and as to location when not clearly evident from a street or alley. Off-street parking facilities including access aisles and driveways shall be surfaced with Florida Department of Transportation Type S-3 asphaltic concrete course, and maintained in a smooth, well-graded condition without any potholes, pavement deterioration, surface irregularities, and any traffic/safety hazard, provided that driveways, access aisles, and parking spaces for churches and public and private schools and churches offering academic courses may be surfaced with grass or lawn.

(3) All off-street parking facilities for the use of public shall be drained so as not to cause any nuisance on adjacent or public property. All surface storm water shall be drained off the pavement for proper disposal to the designated areas or structures within a reasonable time, not to exceed six hours. All drainage lines and structures shall be maintained properly at all times to insure full efficiency.

(4) The lighting thereon shall be so arranged and designed as to prevent any glare or excessive light on adjacent property. Such facilities shall be arranged for convenient access and safety of pedestrians and vehicles. The lighting shall be maintained properly to deliver an average illumination of 2.0 foot candles at any point within the parking facility for non-residential subdivisions and an average illumination of one-half (1/2) foot-candle for residential subdivisions.

(5) All car stops, curbing and sidewalks shall be maintained properly to insure safe and convenient vehicle and pedestrian traffic at all times. Broken, damaged or loose car stops and curbing and sidewalks shall immediately be repaired/replaced.

(6) All pavement markings and signage shall be maintained properly at all times to conform to the standards of "Manual of Uniform Traffic Control Devices." All parking spaces, stop bars, directional arrows, centerlines, edge lines and other pavement markings shall be painted properly to be clearly visible and well defined at all times. Stop signs and all other signs shall be maintained properly at all times as to the size, height, material, design, location, visibility, clarity and other features to conform to the "Manual of Uniform Traffic Control Devices".

(7) The off-street parking facilities shall conform at all times to the site plan as approved by the city, including but not limited to the location and size of all regular and handicap parking spaces.

(8) All private commercial parking lots shall be inspected periodically at least once a year by the Engineering Department to insure proper maintenance and conformity to the approved site plan. The owner, tenant, manager, or their agent shall be notified in writing of any discrepancies and shall, within 30 calendar days from the time of notification, correct the discrepancy.

DRIVEWAYS, SIDEWALK AND SWALES

§ 52.01 SIDEWALK MAINTENANCE BY ABUTTING PROPERTY OWNER.

It shall be unlawful for any person to allow the sidewalks, driveways, or alleys abutting or lying adjacent or contiguous to a privately owned lot, plot, tract, or parcel of land, whether vacant, occupied, or built upon and used for business purposes or as a private residence, to remain in a condition which renders them unsafe or inconvenient to use for the purpose for which they were intended by the general public.

§ 52.02 TREE MAINTENANCE BY PROPERTY OWNER.

It shall be the responsibility of private property owners to maintain trees located upon their property or within swale areas immediately adjacent thereto so that trees located upon such areas do not interfere with or diminish street light illumination.

§ 52.03 OWNERSHIP.

The records in the office of the Tax Assessor of the county showing that the abutting property owner is the owner of the land on the day the owner is charged with a violation of this subchapter shall be prima facie proof of ownership and if the sidewalk, driveway, or alley is found to be maintained in violation of the provisions of this subchapter, such owner shall be subject to fine or imprisonment.

§ 52.04 VIOLATION NOTICE.

Whenever any sidewalk, driveway, or alley is maintained or operated in violation of the provisions of this subchapter, the Code Enforcement Department shall issue to the abutting property owner a notice of violation setting forth the nature of the violation and ordering its correction or removal within 15 days from the date of the servicing of the notice on the abutting property owner. Such notice shall further state that if the property owner does correct or remove the conditions which violate this subchapter within 15 days, the city shall do so and the cost shall be charged to the abutting property owner.

§ 52.05 LIEN.

A lien may be imposed on such abutting property of this owner and enforced and collected in accordance with the ordinances and Charter of the city and the laws of the state.

§ 52.20 DEFINITIONS - SWALES

For the purpose of this subchapter the following definitions shall apply unless the context clearly indicates or requires a different meaning.

SWALES or SWALE AREA.

The land area immediately adjacent to the paved road surface and lying between the edge of the road pavement and the front lot line of the paved sidewalk or the property line.

§ 52.21 APPLICATION OF REGULATIONS.

The terms and provisions of this subchapter shall apply and be enforced against all swales and swale conditions existing in the city. Median strips shall not be included in the effect of this subchapter.

§ 52.22 PURPOSE OF SWALES.

The swale area is intended to be utilized for draining surface waters from adjacent roadways and private property by percolation of the water through the soil. The swales lying within the city's boundaries, when properly constructed and maintained, effectively control the drainage of surface waters where there is an absence of other methods of drainage. The interference with the prescribed contours, the planting of trees or plants, and the use of materials which hinder the percolation of water through the swales seriously affect the drainage function of the swale areas, are a traffic hazard and health hazard, and cause damage to the road adjacent to the swales.

§ 52.23 ALTERATION, PAVING OF SWALE; PERMIT REQUIRED.

It shall be unlawful for any person to alter the existing contours of the swales, or pave the same as provided in § 52.24, without first obtaining a permit from the Engineering Division. The person or firm seeking such a permit shall first submit plans and specifications to the Engineering Division and shall comply with the conditions prescribed by the Engineering Division.

§ 52.24 CONSTRUCTION, MAINTENANCE REQUIREMENTS.

The following shall be minimum standards for construction and maintenance of swale areas:

(A) Paved swales are prohibited except in commercially or industrially zoned areas wherein the property owner may pave the swale area, provided that prior to paving, he obtains a permit from the Engineering Division and provided for subsurface drainage or other facilities to drain the adjacent land without runoff onto the lands of other property owners or onto the public right-of-way.

(B) The use and installation of any type of impervious paving, lime rock, or stabilizing material to the swale area is prohibited.

(C) Grass sodding or grass seeding of the swale area is permitted and encouraged. The planting of single-trunk trees shall be permitted in swale areas, with the exception of any casuarina trees (Australian pine trees), melaleuca trees, brazilian pepper, rubber trees, black olive, avocado, chinaberry, jambolin, mango, schefflera, tropical almond, bishop trees, citrus, java plum, or ficus tree, so long as the following conditions are complied with:

(1) Trees shall be planted not closer to the street pavement than one-half the distance between the sidewalk and the street paving, or in the event that a sidewalk does not exist, not closer than one-half the distance between the property line and the street pavement.

(2) Trees shall not be planted closer together than 25 feet and on corner lots shall be planted not less than 20 feet from the intersection of any street lines or street lines produced.

(3) No trees shall be permitted which are less than six feet in height at the time of planting.

(4) All trees shall be kept trimmed by the owner and shall have a clearance of at least eight feet above the sidewalk and ten feet above the street level so as to permit pedestrian and vehicular traffic beneath them without interference.

(5) If any trees, hedges, or other plant growth shall cause damage or destruction to any sidewalk, curb, gutter, street pavement, utility line, or other city-owned or publicly-owned property, the Director of Public Works shall notify the owner of the trees by notice in writing to cut down, destroy, or remove such trees within ten days from the date of receipt of the notice. In the event the owner shall fail or refuse to cut down, destroy, or remove the trees, within ten days, the Director of Public Works shall cause the trees to be removed or destroyed and shall charge the cost thereof against the owner. The amount of the cost to the city shall be constituted as a lien upon the property.

(6) Property owners shall be responsible for the trimming of any tree which is located on the property owner's front yard or in the swale area immediately adjacent thereto. The property owner shall be responsible for maintaining the trees such that they do not interfere with or diminish street light illumination.

(7) If any trees, hedges, or other plant growth shall interfere with or diminish street light illumination, the Director of Public Works shall notify the abutting property owner in writing to trim such trees within ten days from the date of receipt of the notice. In the event the abutting property owner fails or refuses to trim trees, the Director of Public Works shall cause the trees to be trimmed and shall charge the cost thereof against the abutting property owner. The amount of the cost to the city shall be constituted as a lien upon the abutting property owner's property.

(8) Trees shall not be planted closer than 20 feet from a street light pole, street number sign, traffic sign, traffic signal pole, or fire hydrant.

(D) Swales shall be constructed and maintained as shown in the sketch on file in the Engineering Division.

(E) Paved areas on private property shall not be permitted to drain on the public right-of-way.

(F) Dome-shaped decorative blocks or markers shall not constitute items which interfere with the drainage of the swale areas and shall specifically be permitted along street rights-of-way, drives, and public walks in the city. These dome-shaped decorative blocks or markers shall have rounded surface areas and no corners which make a right angle projection corner interface. In the event that dome-shaped decorative blocks or markers are placed in the swale area, which shall be expressly permitted, then they shall be painted white or with a white reflective material.

(G) Concrete catch basin aprons may be installed in the area surrounding the catch basin where, in the judgment of the City Engineer, such installation will not adversely affect the drainage or percolation of the swale in the vicinity. An authorization permit shall be issued by the City Engineer for each instance where a concrete catch basin apron has been requested by the property owner.

(H) Concrete valley gutters or curb, and gutters shall be required in the roadway swale areas where the longitudinal slopes for the roadway pavement is less than the 0.5% or where the clear width of the roadway swale between the edge of roadway pavement and the sidewalk is less than eight feet.

§ 52.25 MAINTENANCE BY ABUTTING PROPERTY OWNERS.

(A) The abutting property owners are required to maintain the swales which front on their property in accordance with the provisions of this chapter, except as provided in § 52.27 .

(B) The records in the office of the Tax Assessor of the county showing that the abutting property owner is the owner of the land on the day the owner is charged with a violation of this chapter shall be prima facie proof of ownership and on the finding of the county court judge that the swale in front of the abutting owner's property is maintained in violation of the provisions of this chapter, such owner shall be subject to fine or imprisonment.

§ 52.26 DRIVEWAYS ACROSS SWALE AREAS.

(A) Upon proper application, the Building and Zoning Department shall issue permits for the paving or repaving of driveway entrances over and across swale areas in accordance with the following dimensions, provided a 2-1/2 foot radius is utilized for the flange portion where the paved area joins the paved portion of the road right-of-way:

Lot size	Double Drive	Single Drive (Circular Drive Incl.)	
	Minimum	Maximum	Minimum
50 - 60	16	None	None
61 - 70	16	10	10
71 - 75	16	11	10
76 - 80	16	12	10
81 - 85	16	13	10
86 - 90	16	14	10
91 - 95	16	15	10
96 - 100	16	16	10
101 -105	16	17	10
106 -110	16	18	10

(B) Lot size shall be determined by adding the length of the rear lot line to the length of the front lot line and dividing such sum by two.

(C) In no instance shall the total width of all driveways exceed 40% of the lot width.

(D) Driveways constructed in the public right-of-way may be constructed of nonasphalt materials provided, however, the city shall not be responsible for replacing or repairing nonasphalt driveways unless the property owner pays the cost thereof to the city within 90 days after work by the city has commenced in the road right-of-way.

(E) Driveways in the swale area must be graded flat from the sidewalk straight to the roadway pavement without any dip.

§ 52.28 VIOLATIONS' NOTICE, ABATEMENT.

(A) Whenever any swale area is maintained, constructed, or operated in violation of the provisions of this subchapter, the Public Works Department shall issue to the abutting property owner a notice of violation setting forth the nature of the violation and ordering its correction or removal within 15 days from the date of the serving of the notice on the abutting property owner. Such notice shall further state that if the property owner does not correct or remove the conditions, which violate this subchapter within fifteen days, the city shall do so and the cost shall be charged to the abutting property owner.

(B) A lien may be imposed on such abutting property of this owner and enforced and collected in accordance with the ordinances and charter of the city and the laws of the state.

§ 52.99 PENALTY.

Any person, including agents, servants, and employees, found guilty of violating the provisions of this chapter shall be punished as provided in § 10.99. Each day that a violation is permitted to continue shall constitute a separate offense. The imposition of any fine or penalty shall not be construed as excusing or permitting the continuance of any violation of this chapter.

§ 154.32 (H) (3) CURB AND GUTTER

The roadway width shall include minimum 24 feet of asphaltic pavement for vehicular traffic, curb and gutter along each edge of roadway pavement for drainage and four feet of concrete sidewalk along each side of roadway pavement for pedestrian traffic. Roadways, with a minimum width of 50 feet, shall not be required to have concrete curb and gutter for drainage. The City Commission may waive the requirements for sidewalks along one or both sides of a private road. Curb and gutter shall not be required when sidewalks are not required, or where sidewalks are located outside the 40 foot roadway width.

§ 154.32(S) SIDEWALKS

Concrete sidewalks shall be required in all residential, multiple-family, and business areas, except as specifically exempted herein below, and along all arterial highways, and shall be constructed along that side of any lot which faces a street between the lot line of the side of the lot which faces the street and the swale area of right-of-way. Sidewalks shall be constructed in conformity with those ordinances, rules, and regulations of the city relating to the specifications for the construction of sidewalks.

(1) Sidewalks six feet in width shall be provided on all streets that meet the requirements of being classified as major arterial thoroughfares of through section-line roads and secondary arterial thoroughfares of nonthrough section-line roads. The streets shall meet the right-of-way requirements of subdivision (M)(1) above.

(2) Sidewalks five feet in width shall be provided on all streets that meet the requirements of being classified as collector and minor streets, and for apartment, business, and industrial areas. The streets shall meet the right-of-way requirements of subdivision (M)(1) above.

(3) Sidewalks four feet in width shall be provided on all streets that meet the requirements of being classified as minor streets, for one- and two-family

dwelling areas, and on marginal-access streets. The streets shall meet the right-of-way requirements of subdivision (M)(1) above.

(4) Sidewalk construction on internal streets in M-3, M-4 and M-5 zoning districts may be waived by the City Commission upon (a) recommendation from the Growth Management and Engineering Division taking into consideration pedestrian safety due to potential conflicts with motor vehicle, bicycle and other traffic, and (b) an applicant's petition wherein the applicant agrees to and actually contributes an amount equal to the estimated cost of the sidewalk improvements (as determined by the city) to fund sidewalk construction or maintenance by the city.

§ 154.34 REAR LOT SWALES.

(E) The minimum longitudinal slope criteria for side and rear lot swales shall be 0.5% where a complete rear yard positive drainage system is provided and shall be minimum one percent where such drainage system is not provided. The use of rear lot swales is discouraged.

(F) A lot grading plan shall be submitted for review and approval as part of the paving and drainage plan.

(G) The Engineering Division shall review and approve as-built lot grades prior to the issuance of a Certificate of Occupancy.

EXCAVATION AND WATERWAYS

§ 151.01 APPLICATION OF REGULATIONS.

Any party, including natural persons, partnerships, firms, corporations, or business entity conducting excavation, dredging, land fill activities, mining, or related functions, (which are generally classified as excavation activities), shall be subject to the provisions of this chapter.

§ 151.02 PERMIT, BOND.

(A) At the time of obtaining a permit for the activities described in § 151.01, the applicant shall make a good faith estimate of the amount of money required to effectuate the restoration activities necessary to create a safe and sanitary condition at the excavation site. Thereafter, the Engineering Division of the city shall determine the sufficiency of the estimate and shall determine the amount of money necessary to provide for the restoration activities.

(B) Upon the determination of the amount of money necessary to provide for the restoration activities described in division (A) above, the applicant may either post the sum in cash with the city or obtain a bond in that amount satisfactory in form to the city, to insure the restoration activities are completed in accordance with the requirements of this chapter.

§ 151.03 WATERWAY EXCAVATION.

(A) Excavation activities conducted in accordance with the requirements of this chapter and § 154.15(B) shall be subject to the provisions hereof.

(B) When waterway excavation and excavation activities are conducted in conjunction with subdivision development activities and platting, the party obtaining the permit for the activity shall be permitted to post letters of credit in lieu of bonds in an amount to be established by the City Commission for the purpose of insuring compliance with the needs of the city for restoration and re-development. These amounts shall be submitted and applied for to the City Commission by the party seeking the excavation activity permit.

(C) The bond or letter of credit posted shall be at the discretion of the City Commission and may be allowed to be extended to further activity in lieu of the posting of additional bonds or letters of credit.

(D) The City Engineer shall implement any further rules, and regulations, and procedures that are necessary to provide for excavation activities consistent herewith.

§ 151.04 RESTORATION OF LAND REQUIRED.

Those parties conducting excavations shall be fully responsible for the restoration of the land used to a safe and sanitary condition upon completion of the activities. Should the activities be conducted in conjunction with development and construction activities incident to subdivision improvements, then safe and sanitary conditions surrounding the excavation site, at the conclusion of those activities, shall be required. Notations to this effect should be made on the site plan or the subdivision plan at the time of its submittal to the city.

§ 151.05 INSPECTION OF LAND RESTORATION.

Upon application for return of the cash bond or excavation bond, the Engineering Division shall inspect the site and determine that the restoration activities have been satisfactorily completed. Thereupon, the Engineering Division shall certify to the City Clerk that the cash bond or excavation bond may be released to the applicant. In no way shall the city be liable for any conditions created as a result of the excavation activities or restoration activities described in this chapter.

§ 154.12 REQUIRED INFORMATION AS TO WATERWAYS EXCAVATIONS; WAIVER OF REGULATIONS BY CITY.

(A) Where a preliminary plat is presented to the Planning and Zoning Board showing that the developer proposes to excavate or create waterways in connection with the development concerned in the plat, the developer shall submit, along with the preliminary plat, the following data.

- (1) Locations and dimensions of the excavations or waterways.
- (2) Typical cross section showing the elevation of perimeter or banks, grade of slopes, water level at mean low water, depth of excavation, and bottom width.
- (3) A topographical survey of the subject property prepared by a registered land surveyor licensed to practice in the state.
- (4) An estimate of the amount of material to be excavated certified by a registered engineer licensed to practice in the state.

(B) The City Commission may waive or vary the strict requirements of the waterways regulations of this chapter by five affirmative votes when it deems it to be in the public interest or where unnecessary hardship would occur to the landowner because of the strict enforcement of these regulations.

§ 154.15 PERFORMANCE BOND, WATERWAYS EXCAVATION BOND.

(B) A bond executed by a surety company, letter of credit, cash bond or subdivision improvement agreement, in a form approved by the City Commission after review by the City Attorney (hereinafter referred to collectively as the "Security"), based on an estimate by the petitioner's engineers and the city Engineering Department shall be furnished by the subdivider in an amount equal to 110% of the cost of the waterway excavation. The security will be subject to the condition that the excavation will be completed within the time limit set by the City Commission for approval of the final plat and in accordance with other applicable city ordinances, including but not limited to hours of operation. In the event it is not completed, the city may proceed with the work and hold the owner and the security jointly responsible for the costs thereof. This security bond shall be in addition to the bond for improvements as set forth in division (A) above, shall be in a form approved by the City Commission after review by the City Attorney. If a bond is selected as the form of security to be provided to the city it shall be underwritten by a surety company satisfactory to the city

§ 154.30 WATERWAY EXCAVATIONS.

(A) Plats submitted for approval showing either the excavations are to be made on waterways existing or are to be created shall be accompanied with or have appearing on the final plat the following.

(1) A dedication or declaration of restrictions establishing the ownership; right to use; provisions for maintenance, including provisions for financial responsibility for maintenance; limitations; reversary rights if any; easements necessary for the maintenance of the waterway and access thereto from public ways; prohibitions against alteration of the shoreline contours without prior city approval; provisions for the control and subdual of aquatic growth and for the imposition of lines for the cost of such control by the city in the event the adjacent property owners or those receiving beneficial use of the waterway fail to perform the necessary work; and restrictions and limitations on the right of riparian owners to build and erect any improvement or structure on the waterway without prior consent of the city.

(2) Any other and further deed restrictions, covenants, limitations, easements, or conditions that shall be required by the city prior to its approval of the plat.

(B) The requirements of division (A) above shall be in recordable form and shall be worded so that it constitutes a covenant running with the land, which shall be binding and enforceable against the developers and their heirs, successors, and assigns.

§ 154.31 DESIGN STANDARDS FOR WATERWAYS.

(A) Clearing and grubbing. All timber, brush, roots, debris, junk, rubbish, or other objectionable material resulting from clearing or cleaning and grubbing operations

shall be disposed of outside of the city limits or as directed by the Engineering Division. Burning of combustible material may be permitted, subject to the approval of the Fire Department. No material shall be buried on the site or disposed of in the excavation.

(B) Cleanup and drainage. During and after completion of excavation operations, no water shall be permitted to stand in low areas or ponds on the site of the work. Any grading necessary to effect positive drainage shall be done. Drainage may be to the excavation or as directed by the City Engineer. On completion of the work no material shall be left in piles or windrows unless specifically permitted by the city.

(C) Use of explosives. Explosives shall be used only as permitted by the city, and their use shall be subject to such conditions as may be imposed by the city.

(D) Working hours. The city reserves the right to regulate the excavator's working hours and may, at its discretion, prohibit night work.

(E) Design standards for waterways and canals, and offsets and slopes. No excavation shall be permitted closer than 100 feet to an adjoining property line or closer than 50 feet to a dedicated street or road. For purposes of this section, CANALS shall be defined as water bodies of total right-of-way of 100 feet or less and which are used for the conveyance of stormwater and are not used for storage as detention/retention basins.

(1) The excavations for all waterways located within the city limits permitted after the effective date of Ordinance 886 shall have the following minimum slopes, and in no case shall the bank be steeper than these allowable slopes:

(a) From the top of the slope line (maximum six inches below finished floor elevation) to the top of the bank (elevation no less than plus 5.5 feet MSL), the slope shall not be steeper than ten horizontal to one vertical.

(b) From the top of the bank to minus 0.5 feet MSL, or to an elevation three feet below the design water table elevation, as established in the South Florida Water Management District's Permit, the slope of a waterway or canal shall not be steeper than four foot horizontal to one foot vertical, except in commercial, industrial and agricultural zoning districts of the city where canal bank slopes shall be permitted on a slope of two foot horizontal to one foot vertical only if a permanent six-foot chain line fence is erected at the maintenance easement line within 30 days of completion and acceptance by the City Commission, provided, however, if and when such land is thereafter rezoned to residential, then as a condition of the rezoning, the bank slopes shall be reconstructed so that the bank slopes shall not be steeper than four foot horizontal to one foot vertical.

(c) From minus 0.5 feet MSL, or from an elevation three feet below the design water table elevation to the minimum depth required by the South Florida Water Management District up to the maximum depth allowed by the appropriate

governing body, the slope shall not be steeper than two horizontal to one vertical or to the angle of repose of the material encountered.

(d) For the purposes of this section, all land lying between top of slopeline to the top of the bank shall be considered filled land as designated in § 155.058 of the City Zoning Code.

(e) The sketch entitled "Typical Waterway Bank Slopes", attached hereto as an Appendix is an example of the method by which waterway bank slopes shall be excavated and shall be available at the office of the City Engineer for review.

(2) The excavation for all waterways located within the city limits permitted prior to the effective date of Ordinance 886 shall be in accordance with previously approved plans, provided such plans have been designed in accordance with South Florida Water Management's criteria at the time of permitting.

(F) Depth of excavation. No excavation, when completed, shall have a minimum depth inside the limits of the deep cut line of less than minus twelve feet USC & GS, MSL datum.

(G) Storm drainage. Drainage of storm waters into the lake shall be permitted.

(H) Lake permit fee. Lake permits will be required, the minimum fee to be as established in § 150.43.

(I) Maintenance easement. An easement with a right-of-way 20 feet wide must be provided to permit entrance of equipment to the waterway for maintenance.

§ 155.340 DEFINITIONS.

For the purpose of this subchapter the following definitions shall apply unless the context clearly indicates or requires a different meaning.

EXCAVATION. The digging, stripping, or removal by any process of natural materials or deposits from their natural state and location. EXCAVATION as used herein shall not include digging for foundations, fences, structures, or incidental to construction work, wherein no materials are removed from the premises, except surplus not required for backfill or grading of the premises. EXCAVATION shall include but not be limited to, the creation of canals, waterways, and lakes incidental to real estate subdividing and development.

MATERIALS AND DEPOSITS. Includes rock, stone, minerals, shell, sand, marl, muck, and soil, but does not include sod.

§ 155.341 PERMIT REQUIRED; PERMIT RENEWAL.

(A) A permit for new excavation shall be obtained from the City Engineering Division.

(B) After an original permit for an excavation has been issued, the enforcing officer shall issue a renewal permit for the continuance of the excavation in accordance with the original permit and plans, where the work has been conducted in accordance with those plans and with these regulations.

(C) Within 30 days after this chapter is adopted, owners or operators of existing excavations shall submit to the enforcing officer a plat showing their presently owned property adjacent to and forming a continuous property with the existing excavation area. The plat shall also show future right-of-way lines and the final limits to which the owner or operator plans to carry excavations in that property. These plats are to be kept for record, and the excavations indicated thereon will be exempt from the requirements of these regulations, with the following exceptions:

(1) The owners or operators of excavations existing at the time this chapter is adopted shall apply for an excavation permit within 30 days after this subchapter is officially adopted.

(2) Sections 155.345 and 155.346 shall apply to excavations existing at the time this subchapter is officially adopted.

(D) Yearly renewals of the excavation permit shall be granted to the owners and operators of excavations existing at the time this subchapter is adopted, provided the applicable requirements are complied with.

(E) Any extension, beyond the excavation limits shown in each plat required by division (C) of this section to be filed with the Engineering Division, shall be treated as a new excavation; and shall, therefore, be subject to the full requirements of these regulations.

(F) Where excavation has been discontinued for a period of six months or more, or has been abandoned, any renewal or resumption of excavation shall be required to be subject to a permit for a new excavation, and the issuance of a permit therefor shall be subject to all the requirements of this subchapter for a new permit.

§ 155.342 APPLICATION FOR PERMIT; PLANS AND SURVEYS.

Applications for original permits shall be accompanied by the following:

(A) A plot plan to show the property owned or controlled by the applicant with reference to streets, highways, and contiguous platted areas.

(B) Cross-sections to show approximate elevation and grades at the final outside boundaries of excavation.

(C) A final grading plan to show the ground elevations of the land immediately adjacent to the side of the excavation and all of bounding streets or roads.

(D) Upon completion of the excavation, and when there is a question that the excavation is in accordance with the plans approved, a topographical survey may be required showing elevations and cross-sections of the final outside boundaries of each excavation at 100-foot intervals.

(E) The plans, maps, elevations, and cross-sections required by this section shall be made by a surveyor-engineer registered as such by the state.

§ 155.343 PERFORMANCE BOND.

The applicant for a permit for an excavation shall post a performance bond which, shall be \$100,000 for each waterway to be excavated conditioned upon complete compliance with the regulations of the city pertaining to the initiation, conduct, and completion of excavations in a manner conforming to this chapter, within a period of not more than one year after the excavation has been carried to the extent authorized by a valid permit, or after work on excavation has been abandoned or discontinued for a period of six months or more.

§ 155.344 ZONING LIMITATIONS.

(A) The use of heavy machinery for extraction and removal of natural material or deposits is permissible where the removal has been approved and authorized by permit.

(B) The land area exposed by the extraction and removal of natural materials or deposits shall be left suitable for future use and development purposes in accordance with the final grading plan and in accordance with any zoning regulations applicable thereto.

(C) New excavation shall be a permissible use only in a zoning district wherein that use is permissible under this chapter, subject to the provisions of this subchapter.

(D) An existing excavation for which a permit is issued pursuant to § 155.341 may be continued and extended pursuant to that permit and shall not be construed to be a nonconforming use.

§ 155.345 LOCATION.

(A) No excavation shall be allowed within 50 feet of the future right-of-way line for any street or highway, nor within 100 feet of any private property line.

(B) The excavation, and slope if required, may commence at the common property line in the case of private property if waivers are secured from the abutting property owners.

§ 155.346 POSTING OF WARNING SIGNS.

During the excavation operations, the premises shall be suitably posted with warning signs of such character and location as may be adequate to warn the public concerning possible hazards.

§ 155.347 CONDUCT OF EXCAVATION OPERATION.

(A) The grading, leveling, and sloping of the final banks shall be on a progressive basis as the project develops and the excavation progresses.

(B) If sand is encountered during excavation, the vertical cut at the final bank shall be modified in such a manner that the required perimeter slope of one vertical to five horizontal will be sustained and maintained.

(C) The property shall be staked along the property line and the top-slope line in the portion of the final perimeter to which the excavation extends during the period covered by the yearly permit in effect. Stakes shall be maintained in proper fashion during that period so that the limits of excavation slopes and grade levels in that portion of the final perimeter may be easily determined and verified.

(D) During the entire operation, dynamite shall not be used except in accordance with state regulations.

(E) The hours of operation shall be limited to the period between the hours of 7:00 a.m. and 10:00 p.m. Monday through Saturday.

(F) Every owner or operator of any excavation shall be insured to the extent of \$100,000 against liability arising from any activities or operations incidental to excavation carried on or conducted pursuant to any permit or approval given for that excavation by the city.

(G) All excavation access-roads shall be well sprinkled to minimize dust. This sprinkling shall not be required 500 feet or more from a public street or highway.

§ 155.348 CLEAN-UP AND REHABILITATION.

(A) Upon completion of the project, the property shall be dressed up so that it will be left in a presentable condition.

(B) The perimeter of the excavation shall be properly backfilled and graded. Slopes shall comply with § 154.31(E).

(C) Whenever excavation operations on any property shall have been completed, abandoned, or permanently discontinued, then all plants, buildings, structures (except fences), and equipment shall be entirely removed from that property; and all stockpiles, topsoil, refuse, or waste materials shall be removed, redistributed on the premises, or backfilled within the pit, within one year after the completion. However, the provisions of this division shall not apply to any plants, buildings, structures, equipment, or stockpiles whenever and so long as any rock, gravel, or other materials shall be available from other properties for processing by or through any such plants, buildings, structures, or equipment.

(D) These provisions shall not apply to any portion of an existing excavation which was in existence at the time of the passage of these regulations.

§ 155.349 FILLING OF EXCAVATIONS; PERMIT REQUIRED.

Excavations may be filled if a permit is obtained from the Engineering Division, subject to the following conditions:

(A) The applicant for permit and the owner of property shall comply with such terms and conditions as may be required to prevent objectionable odors; to prevent the operation from becoming detrimental to the health, safety, and general welfare of the adjacent neighborhood; and which will prevent promiscuous dumping by unauthorized persons.

(B) That a top-dressing, consisting of not less than one foot of clear fill, shall be provided so that the property shall be in a clean, presentable, and sanitary condition.

(C) That the owner of the property, and the operator, shall post a bond in such amount as may be determined by the enforcing officer as necessary to insure compliance with the terms and conditions as may be established for the filling permit.

(D) No permit shall be issued for, or excavation or other area filled with refuse, debris, junk, organic material or garbage, unless the use conforms to all applicable zoning resolutions and conforms to any applicable regulations of the appropriate health officials.

STREET LIGHTS AND UNDERGROUND UTILITIES

§ 154.17 STREET LIGHTS.

(A) The city shall provide street lights for all new subdivisions within the city. The developer shall pay to the city, at the time that his plat is approved by the City Commission, the sum of \$1,000 per pole for the street lights. In the case of nonplatted developments, the \$1,000 per pole shall be paid by the developer at the time the streets are dedicated to the city. For the purpose of this section, the term DEVELOPER shall be synonymous with the term SUBDIVIDER as provided in § 154.02.

(B) All subdivision plats submitted to the City Commission for approval shall provide the necessary easements for installation and maintenance of street lights within the subdivision.

(C) The street light poles shall be cement poles, with underground wiring. The design and spacing of the street lights shall conform to the remainder of the city's overhead street lighting system.

§ 154.32 (H) (9) ILLUMINATION STANDARDS FOR STREETS AND ALLEYS.

(H) Private roads: Private roads in residential zoning districts shall be allowed in accordance with the following criteria:

(9) Street lighting shall be provided to deliver an illumination equal to that provided for public roads but not less than an average illumination of one-half footcandle within the roadway. The street light poles shall be made of concrete, fiberglass, or metal poles which meet the standards set forth below, and all cables and wires shall be underground. The poles and lines shall be located outside the roadway width.

(a) Standards for light poles. Light poles shall withstand wind loads as required by South Florida Building Code, latest edition. The pole shall be non-conductive, non-corrosive, and shall be able to carry a minimum weight of 100 pounds at its top. Installation shall be done by direct burial. The pole material shall meet the following ASTM standards: D635, A153, A356, A319, A307.

(b) Design and style standards for light poles. The design and style of decorative light poles shall be reviewed by the Planning and Zoning Board in the same fashion as site development plans are currently reviewed under § 155.395 of this code.

§ 154.35 (A) (9) ILLUMINATION FOR PARKING AREAS.

(A) Parking lots for industrial, commercial and recreational, subdivisions and for residential subdivisions with multi-family units or single-family attached units shall be constructed in accordance with the following criteria:

(9) Lighting. Lighting shall be provided to deliver an average illumination of one-half footcandle at any point within the parking area, for residential subdivisions and an average illumination of two footcandles within the parking area for non-residential subdivisions. The light poles shall be made of concrete, metal or fiberglass and all wires and cables shall be underground. Wooden poles and overhead lines shall not be allowed.

§ 150.95 (D) PROPERTY MAINTENANCE CODE.

(4) The lighting thereon shall be so arranged and designed as to prevent any glare or excessive light on adjacent property. Such facilities shall be arranged for convenient access and safety of pedestrians and vehicles. The lighting shall be maintained properly to deliver an average illumination of 2.0 foot candles at any point within the parking facility.

§ 154.47 UNDERGROUND INSTALLATION OF PUBLIC UTILITIES; WAIVER OF REGULATIONS BY CITY.

(A) In new residential subdivisions and mobile home parks platted after the effective date of this section, all wires, cables, and equipment for the transmission of electrical impulses, sounds, voices, or communications shall be installed underground, except as provided herein.

(B) All facilities referred to in division (A) above shall be installed underground in such a manner so that they shall not constitute a hazard to public safety and shall not be visible from the land surface.

(1) Cost. The cost of installation shall be borne by the developer or the owner of the land being developed or subdivided, or by the utility company installing the facility or furnishing the utility service in keeping with standard utility company policies.

(2) Permits. No building permit shall be issued to an applicant until the Engineering Division has been furnished evidence that arrangements have been made for each of the utilities involved for the installment of underground utility services.

(C) The City Commission may waive the requirements of underground utility installation of all or part of any utility transmission facilities in such cases where the cost will be substantially in excess of above ground or conventional installation or where topographical or surface conditions may make such installation impossible or create a severe hardship on the subdivider or developer. The developer or utility seeking a waiver

of the requirement of underground utility installation or relief from the provisions of the requirements of this chapter may petition the City Commission for such relief. The petition shall set forth supporting engineering data, cost estimates, and any other information, which would substantiate the claim for relief. The petition shall be filed with the City Engineer who shall proceed to investigate the matter set forth in the petition and may request further information should he feel it to be necessary. The City Engineer, after examining the petition and making an independent determination of the situation shall submit his recommendation to the City Commission. The City Commission may then conduct hearings as it deems fit to determine whether it shall grant the relief requested or grant any other and further relief it may deem prudent under the circumstances.

§ 154.48 PRIMARY ELECTRICAL FEEDERS, CABLES, OR WIRES.

The primary feeders, cables, and wires carrying in excess of 7,000 volts single phase or 12,000 volts three phase may be suspended above the surface. These facilities, including the necessary poles, which shall be constructed of reinforced concrete shall be placed or installed in such a manner so as not to be unsightly. A currently existing wooden pole may be replaced by another wooden pole with the approval of the City Manager, his designee, or the City Commissioner. All other electrical transmission facilities, with the exception of appurtenances thereto such as transformer boxes, pedestal-mounted terminal boxes, meter cabinets, and street lighting poles and fixtures, shall be placed or installed under the surface of the land.

EXCAVATION IN PUBLIC RIGHTS-OF-WAY

§ 154.60 TITLE OF SUBCHAPTER.

This body of regulations shall be known as the "Minimum standards applicable to all excavation operations in all public rights-of-way and ingress/egress easements dedicated for the use of pedestrian and vehicular traffic within the corporate limits of the City of Pembroke Pines, Florida."

§ 154.61 INTENT OF STANDARDS.

(A) The intent of these standards is to provide for the safe and orderly use and development of public rights-of-way in the city, to the end that the needs and interests of the public are served as fully and efficiently as possible.

(B) The term RIGHT-OF-WAY shall include all rights-of-way dedicated for public use and all ingress/egress easements dedicated for the use of pedestrian and vehicular traffic.

(C) The regulations embodied herein have been made as broad as possible to serve as standards of quality to maintain the necessary uniformity in the utilization of the public traffic corridors.

§ 154.62 PERMITS REQUIRED.

(A) A permit is required for all excavation operations in public rights-of-way or ingress/egress easements dedicated for the use of pedestrian and vehicular traffic, such permits shall only be issued by the Engineering Division. The permit shall expire if permitted work is not commenced within 90 calendar days.

(B) No excavation shall be started until a permit for the proposed installation has been granted by the Engineering Division. Violation of this subchapter shall be punishable as provided in § 154.99.

(C) Permits will not be required for work inside of existing manholes.

§ 154.63 EMERGENCY WORK.

(A) None of the above permit procedures shall apply to emergency repair work. Emergency repair work is defined as work, which must be done immediately upon discovery, in order to safeguard the public from immediate danger to life or limb, to safeguard public health or welfare, or to restore interrupted utility services. In the event of an emergency as defined above, repair work may be started without a permit upon verbal notification being given to the Engineering Division. If the Engineering Division offices are closed, then notification must be given as early as possible on the next regular workday.

(B) After the emergency repair is completed and the right-of-way is restored, a record location/restoration drawing must be submitted to the Engineering Division. Work that can be scheduled ahead of time is not emergency work.

§ 154.64 PERMIT FEE.

Unless otherwise provided for by state law, permit fees shall be as follows:

(A) The permit fee to open cut road in dedicated public rights-of-way shall be \$100 per linear foot of the open cut of the pavement.

(B) Permit fee to dig trenches, pits, ditches and other excavation operations outside the roadway pavement to install or repair utility lines, or to install pipe underneath the roadway by bore and jack method shall be as follows:

Linear Feet	Cost
0 - 100	\$100
101 - 500	200
501 - 1000	250
over 1000	250 plus .10 per linear feet over 1000 linear feet

§ 154.65 AVAILABILITY OF APPROVED PLANS AND PERMIT.

A set of plans and city's permit for the project, bearing the Engineering Division approval stamp must be located on the job site whenever work is in progress.

§ 154.66 OWNERSHIP OF FACILITIES.

All facilities within public rights-of-way must be owned and maintained by a public service utility or franchisee or by a political entity competent to function within the state. Facilities shall remain the liability of the last operating entity until removed.

§ 154.67 UNDERGROUND FACILITIES.

All underground and in-ground facilities in public rights-of-way and ingress/egress easements dedicated for the use of pedestrian and vehicular traffic shall be designed and installed so as to safely sustain any vehicular loads that might be placed upon them.

§ 154.68 UTILITY CROSSINGS.

Each underground utility crossing of paved roads shall be made by the "bore and jack" method, as approved by the Engineering Division, unless an alternate method is

approved by the Engineering Division. Proposed open cuts shall be shown on the drawings submitted for approval.

§ 154.69 DRIVING PIPE UNDER EXISTING PAVEMENTS (BORE AND JACK METHOD).

When a pipe is driven through the earth under pavement, jetting, or the use of air or water forced into direct contact with the earth shall be prohibited. Pipe driving shall leave no voids in the underlying earth. This requirement does not prohibit the use of air hammers for driving.

§ 154.70 NOTICE REQUIRED.

Twenty-four hours minimum notice must be given to the Engineering Division prior to the start of excavation, and when scheduling any required tests and/or inspections.

§ 154.71 INSPECTIONS, TESTS AND CERTIFICATES.

(A) All inspections and tests necessary to insure construction in conformity with the plans and specifications as approved by the Engineering Division shall be made by or under the direct supervision of an Engineer of Record, his representative or an engineer registered in the state, unless exempt under state law.

(B) The Engineer of Record or his representative shall carefully observe and inspect all portions of the permitted installation sufficiently to determine that the contractor has substantially complied with all approved plans and specifications related thereto, and the Engineer of Record shall so certify at the completion of work.

§ 154.72 SUPERVISION OF CONSTRUCTION.

The permittee shall provide sufficient competent supervision while work is in progress to ensure that the work is being performed properly and in a safe and orderly manner.

§ 154.73 INTERRUPTION AND RESTORATION OF SERVICES.

Adequate provision shall be made for the safe, continuous operation of any utilities, drainage facilities or water courses encountered during construction, unless other approved arrangements have been made. The operators of all such services and all structures altered or damaged during construction shall be notified immediately, and all such services and structures shall be satisfactorily restored immediately.

§ 154.74 DISPOSAL OF WATER FROM EXCAVATION.

Adequate provision shall be made for the satisfactory disposal of water resulting from de-watering or pumping operation or from encounter with water in any manner. The method of handling or disposing of such water shall be in accordance with applicable regulations of all agencies having jurisdiction including, but not limited to, the State Health Department, State Department of Environmental Regulation, Broward County Water Resources Management Division and Broward County Department of Planning and Environmental Protection.

§ 154.75 MAINTENANCE OF TRAFFIC.

(A) When a plan is required for maintenance of traffic, the contractor shall adhere to such plan as approved, in strict accordance with the provisions of the Traffic Control Manual, throughout the construction period. Temporary measures must be taken, if necessary, to provide a minimum of one lane of traffic in each direction on each affected road at all times, unless specific permission is obtained from the Engineering Division to deviate from this requirement. Contractor must also provide for vehicular access to each home and place of business or assembly abutting the affected right-of-way.

(B) The right-of-way must be maintained by the contractor in safe and driveable condition until the permitted work is complete and the right-of-way is restored and accepted for maintenance by the Engineering Division.

§ 154.76 JOB SITE SAFETY.

All permitted work in rights-of-way must be done in strict accordance with the provisions of the Occupational Safety and Health Administration (OSHA) Regulations, and all other applicable codes.

§ 154.77 REMOVAL OF PAVEMENT, DRIVES, SIDEWALKS, CURBS, AND GUTTERS.

Edges of permanent type pavement shall be pre-cut straight, clean and square beyond any damaged base area including well point locations. Utility cuts in existing pavement shall be restored as indicated on City Standards R-26, R-27, R-28, R-29 and R-30 attached herewith. When the removal of sidewalks, curbs or gutters is necessary for construction, they shall be removed in full sections or a minimum of five feet in length, and all broken edges cut smooth by use of a suitable power saw or other appropriate means.

§ 154.78 DISPOSITION OF EXCAVATED MATERIALS.

Broken pavement and other debris shall be removed from the site as soon as practical, unless otherwise directed by the Engineering Division. Excavated materials shall not be stockpiled in the rights-of-way during construction without specific approval

of the Engineering Division. All excess material shall be removed from the work site and disposed of legally at the permittee's expense.

§ 154.79 BRACING AND SHORING.

Sheeting, bracing, and other approved materials shall be used as required to support the sides of the excavation. Sheeting, bracing and other approved materials shall be used to prevent movement which can in any way, alter the grade or disturb the facility being installed, diminish the width of excavation, delay the work, or otherwise endanger personnel, adjacent pavement or other structures. Safety procedures shall be followed and adequate protection shall be furnished to all personnel as required by OSHA. All sheeting or bracing which is not left in place shall be removed in a manner that will not endanger the work, personnel or adjacent structures.

§ 154.80 TRAFFIC AND UTILITY CONTROLS.

Excavation for pipe, structures or cable laying operations shall be conducted in a manner that will cause the least interruption to traffic. Fire hydrants, valve boxes, fire and police call boxes shall be left unobstructed and accessible during the construction period. When such obstruction is unavoidable, it must be held to the minimum, and the contractor shall give immediate notice to the city and all other affected parties.

§ 154.81 BACKFILLING AND COMPACTION IN ROADWAY.

Backfill material shall be placed in layers not to exceed eight inches in thickness, with each layer carefully compacted to 100% of maximum density, per American Association for State Highway and Testing Offices (AASHTO) T-99-C and each layer shall be tested, before placing succeeding layers. Swale area need only be compacted to 98% of maximum density, per AASHTO (T-99-C). Density tests shall be taken in each lane and shoulders at intervals of 200 feet or less, as approved by the Engineering Division.

§ 154.82 PITS AND TRENCHES IN ROADWAY.

In dry trenches, backfill materials shall be placed evenly and carefully around and over pipe in 12-inch maximum layers, each layer being thoroughly compacted, until one foot of cover exists above the crown of the pipe. The remaining trench portion up to the pavement base shall be back-filled in layers not exceeding eight inches with each layer being compacted to 100% and tested at intervals of 100 feet maximum before placing succeeding layers. Swale area shall be compacted to 98% of maximum. Testing shall be conducted by the City Inspector as necessary. All materials shall be able to pass through a six-inch ring. Laboratory testing for the optimum moisture and maximum soil density shall conform to the specifications of AASHTO T-99-C (Standard Proctor). Restoration of the roadway shall be in accordance with City Standards R-26, R-27, R-28, R-29 and R-20 attached herewith.

§ 154.83 NARROW TRENCHES IN ROADWAY.

Narrow trenches, not greater than six inches in width, containing not more than two three-inch cables or one four-inch pipe or conduit may be backfilled with clean sand to a point two inches above the cable or conduit. The remainder of the trench shall be filled to a point two to three inches below the finished roadway surface with a 1 to 10 mixture of portland cement and sand, placed wet and allowed to set for 12 hours. The top three inches of the trench shall be removed within 24 hours an permanent asphalt patch shall be placed and rolled in.

§ 154.84 RESTORATION OF RIGHT-OF-WAY.

(A) The entire work area utilized for the performance of permitted work shall be restored by the permittee to the condition that existed before work began, except as required by the nature of the permitted work and as shown on the approved plans.

(B) Paved sections shall conform in type, shape, elevation and texture with adjacent paved areas and shall be of at least equal quality. Design mixes for flexible pavements shall be subject to approval by the Engineering Division. All damaged or undermined areas of existing pavement, nor previously removed, shall be removed and restored in the specified manner. Where pavement is removed for installation, maintenance or removal of any underground facility, restoration shall be in accordance with City Standards R-26, R-27, R-28, R-29 and R-30, attached herewith. Equipment shall not travel over loose rock fragments or other hard material lying on sections of pavement which are not to be removed.

(C) Swale areas, medians, sidewalks, driveways, and similar structures shall be restored in kind to a condition equal to or better than that, which was disturbed.

(D) All benchmarks and permanent reference survey markers disturbed during the course of construction shall be replaced at an equal or better level of precision, at the permittee's expense, by a Professional Land Surveyor registered in the state.

§ 154.85 RECORD DRAWINGS.

(A) When applicable, upon completion of construction and prior to final inspection or commencement of any bonded maintenance period, the Engineer of Record shall furnish to the Engineering Division, two sets of "Record" drawings.

(B) The permit drawing may become the record drawing if the actual work performed conforms 100% to the permit drawing. In such case, a statement from the Engineer of Record must be declared on the drawing.

§ 154.86 ABANDONED FACILITIES.

All exposed facilities and such underground facilities as may be designated by the Engineering Division, that are abandoned within the public right-of-way, shall be removed by the owner of the facility unless other provision is approved by the Engineering Department. An abandoned facility allowed to remain in the right-of-way shall continue to be the responsibility of the owner or operator by whom last used. Such owner or operator shall be liable for all costs arising from the presence of the abandoned facility in the right-of-way. The section does not apply to facilities required to remain in place by the Engineering Division.

§ 154.87 PROCEDURE FOR RESTORATION OF FLEXIBLE PAVEMENT.

The procedure for backfill and pavement restoration shall be as follows:

Density test of compacted fill, backfill and/or base shall be taken at each six-inch lift, prior to placement of the succeeding lift of material according to the following schedule.

(A) For any road crossing in which the road is cut and restored one lane at a time, one density test shall be taken in each lane at each six-inch lift.

(B) For any road crossing in which the road is cut and restored two lanes at a time, densities shall be tested in one lane per lift, alternating lanes with each lift.

(C) For any road crossing in which the road is cut and restored three lanes at a time, densities shall be tested in two locations per six-inch lift, staggering locations with each successive lift.

(D) Cuts across roads shall not be left open overnight unless absolutely necessary. Trenches shall be backfilled and a temporary asphalt applied to make a smooth level patch. The trenches shall then be excavated the next day and permanent backfill and pavement installed in accordance with these standards. The only exception will be when the installed facility must be tested before the road is restored. In these cases, the permanent restoration must be performed on the day of testing or the next day.

(E) When the installation parallels the roadway and damages the pavement, the density tests shall be made every 100 l.f. at six-inch layers, with test locations staggered 25 inches each lift. A copy of all Proctor and Field Density Tests shall be furnished to the Engineering Division.

(F) Roadway base material shall be compacted to a minimum of 98% of maximum dry density, as determined by AASHTO T-180 (Modified Proctor Test). Subgrade material under paved areas shall be compacted to a minimum of 100% of maximum dry density. Shoulder area and swale area beyond shoulders shall be

compacted to a minimum of 98% of maximum dry density, as determined by AASHTO T-99-C (Standard Proctor Test).

(G) Restoration of striping, signing and signalization devices shall be accomplished immediately after pavement restoration is completed.

§ 154.99 PENALTY.

(A) Any person, including agents, servants, and employees, found guilty of violating the provisions of this chapter shall be guilty of a misdemeanor and punished as provided in § 10.99. Each day that a violation is permitted to continue shall constitute a separate offense. The imposition of any fine or penalty shall not be construed as excusing or permitting the continuance of any violation of this chapter.

(B) A person who sells, rents, or leases his property in violation of § 154.49 shall be punishable by a fine of not more than \$500 or by imprisonment for a period not exceeding 90 days, or both.

LOWEST FLOOR ELEVATION

§ 152.41 (C) MINIMUM LOWEST ELEVATION.

(C) Minimum lowest floor elevation. The minimum lowest floor elevation of any residential, nonresidential, commercial, or industrial structure shall be the highest of the following:

- (1) 8.0 feet M.S.L.
- (2) Minimum floor elevation as set forth in the South Florida Water Management Districts' Surface Water Management Permit.
- (3) The elevation shown on the 100-year Flood Elevation Map, Latest Revision, prepared by the Broward County Transportation Department.
- (4) Eighteen inches above the highest point of the paved roadway/drive-lane nearest to the building.
- (5) Two feet above the base flood elevation.

§ 154.14 FLOOD DAMAGE.

No plat of lands subject to periodic or frequent flooding or standing water shall be approved, unless a suitable agreement is entered into with the city by the person seeking approval of a plat of the lands, that adequate provisions will be made to prevent any periodic or frequent flooding or standing water thereon. The City Commission may require the party seeking approval of a plat to raise and fill the lands to prescribed heights and contours and to provide drainage canals or watercourses, culverts, gutters, sewers, and other drainage facilities necessary to adequately drain the platted lands.

NOISE CONTROL REGULATIONS

§ 96.10 AMBIENT NOISE LEVELS.

(A) For purposes of this chapter, the AMBIENT NOISE LEVEL shall be presumed to be as herein set forth:

Area	Day (7:00 a.m.- 10:00 p.m.)	Night (10:00 p.m.- 7:00 a.m.)
(1) Wildlife refuge and open spaces	40 dBa	40 dBa
(2) Residential: zoned single- family or duplex	45 dBa	40 dBa
(3) Residential: zoned multiple-family (triplex or higher density)	55 dBa	50 dBa
(4) Business and commercial	60 dBa	60 dBa
(5) Industrial and other	65 dBa	65 dBa

(B) The burden shall be on any person contesting the presumed ambient noise levels above set forth to establish the actual ambient noise level by clear and convincing evidence.

§ 96.11 UNLAWFUL NOISE.

It shall be unlawful in the city for any person to commit any of the following acts:

(A) Create any noise on any street, sidewalk, or public place adjacent to any school, institution of learning, or place of religious worship while the same is in use, or adjacent to any hospital, which noise exceeds the dBA set forth in division (G) of this section; as long as conspicuous signs are displayed in such streets, sidewalk, or public place indicating the presence of a school, place of religious worship, or hospital.

(B) Use or operate within any residential zone any radio receiving set, musical instrument, phonograph, television set, or other machine or device for the producing or reproducing of sound between the hours of 10:00 p.m. of one day and 7:00 a.m. of the following day, in excess of the dBA set forth in division (G) of this section.

(C) Keep or maintain, or permit the keeping of, on any premises owned, occupied, or controlled by such person, any animal or fowl otherwise permitted to be kept which, by sound, cry, or behavior, shall exceed the dBA set forth in division (G) of this section.

(D) Operate any machinery, equipment, pump, fan, air-conditioning apparatus, or similar mechanical device in any manner so as to create any noise in excess of the dBA set forth in division (G) of this section. This section shall not apply to the operation of certain power equipment during daylight hours which is commonly used in the community and for which no satisfactory noise reduction equipment, or procedure is available. This exemption shall apply to common lawn and garden equipment, construction tools, emergency engines, generators, and other equipment necessary to maintain or restore public utility service or other public services. However, the operation of any such equipment shall not create or emit any noise in excess of 80 dBA when measured at the property line of the property on which such equipment is being used.

(E) No person shall make any loud, unnecessary, or unusual noise, as defined in division (G) below, which annoys, disturbs, injures, or endangers the comfort, repose, health, peace, or safety of others. The enforcement officials may use the comparative scale of noise to be prepared by the County Board of Noise Control as evidence in court, provided such official has sufficient training in the use of such a comparative scale to qualify as a witness in the judgment of the court.

(F) Use any building or premises, permit the use of the same, or rent the same to be used for any business, employment, residential use, or for any purpose of pleasure or recreation, if such use shall, by its boisterous nature, exceed the dBA set forth in division (G) of this section.

(G) Any noise exceeding the ambient at the property line of the property on which the noise source is located by more than ten dBA, is declared to be a violation of this section. However, construction sites shall be regulated by § 96.12 of this chapter.

§ 96.12 BUILDING CONSTRUCTION OR REPAIR WORK.

(A) It shall be unlawful between the hours of 6:00 p.m. of one day and 7:30 a.m. of the next day for any person to perform any construction or repair work on buildings, structures, or projects, at a noise level of more than ten dBA in excess of the ambient noise level, when measured at the property line of such project, except to perform emergency work.

(B) This section shall not apply in cases of urgent necessity in the interest of the public health and safety, if a permit is granted by the Director of the Building and Zoning Department. Such a permit may be granted for a period not to exceed three days or less while the emergency continues, and may be renewed for periods of three days or less while the emergency continues; however, dewatering pumps and other equipment which is required to be operated 24 hours per day may be granted a permit to operate for a period of time in excess of three days if the operation of such equipment does not create a noise in excess of 80 dBA when measured at the property line.

(C) This section shall not apply to work on public improvements, including regulated public utilities.

(D) In the case of emergency, construction activities directly connected with the abatement of the emergency may be undertaken without a permit as herein provided for a period of not to exceed 12 normal working hours from the commencement of such construction, during which time application for a variance hereunder shall be made.

WATER & SEWER

§ 50.02 REQUIRED CONNECTIONS TO CITY UTILITIES; POLICY.

It shall be the policy of the city that if a city utility service is available to any facility requiring that type of service, then the city utility system shall be extended to a service connection and the plumbing of the facility shall be connected to the service connection. Availability shall be determined as follows:

(A) Facility in Existence as of Time This Chapter Adopted. The city shall issue written notice whenever the utility does become available. Within 45 days of the date of notification, the property owner shall have entered into a contract with the city for connection to the utility.

(B) Developments Authorized Subsequent To Adoption Of This Chapter.

(1) If a utility main exists in any right-of-way abutting the property, then that utility shall be considered available. Prior to receipt of a permit for any construction, the developer shall have entered into a contract with the city for the connection.

(2) Zoning, platting and development ordinances and regulations of the city and county establish criteria as to what public facilities and services must be available before a new development can be constructed. If those criteria require availability of either a public water system or a public sewer system, then approval of the development by the city will be contingent upon mutual agreement between the developer and the city as to how and when the city utility system will be extended to the development.

(3) If a new development is approved without a utility being available, then the provisions of § 50.02(A) shall apply to future connection of that utility.

§ 50.03 EXTENSION OF CITY SYSTEMS.

Requirements related to extensions of utility systems vary depending upon whether the extension: includes only service laterals and/or service connections, or includes new mains located between one or more service laterals and a portion of the system depicted in the master plan, or includes a portion of the system depicted in the master plan.

(A) Service Laterals and Service Connections.

(1) If a main already exists in a right-of-way abutting a property line, but there is no service lateral, or a replacement lateral is necessary, then the city shall construct the service lateral and service connection, and the developer or property owner shall pay a meter charge (water only) and a tapping charge. If only a new or replacement water service connection is required, then the city shall do the work and a meter charge shall be paid.

(2) If a new main also is required, then both the main and the service lateral shall be constructed at the same time as the new main. A water service connection may, at the discretion of the city, be constructed either at the same time as the lateral or subsequently. If either one is constructed by the developer, title to the completed product shall be transferred to the city. In that event, payment of the tapping and/or meter charge corresponding to the transferred work shall not be required and this fact shall be stated in the connection contract. The relationship between actual costs incurred by the developer and standard tapping and/or meter charges shall be immaterial, and no credits for any differences shall accrue to either the city or the developer. If either the lateral or the water service connection is constructed by the city, then the corresponding charge shall be paid.

(B) New Mains Not in Master Plan.

(1) In general, any new facilities between those depicted in a master plan and the service laterals for a development shall be constructed by the developer, at his own expense. Drawings and specifications shall be submitted to the City Utility Director for review. Assisted as he sees fit by recommendations of the engineer, the director either shall approve them or return them for revision and resubmittal. If the director determines that any portion of the work must be an oversized facility, then the developer shall obtain two cost estimates for the portion designated to be oversized - one if built oversized and one if built to the size required to serve only the development, where both sizes are as approved by the utility director. The director also shall obtain two such estimates. The developer and the director then shall negotiate both a contract for the utility connection, which will indicate whether the oversized facility is to be built by the developer or by the city, and a developer's agreement, which will indicate: the amount of reimbursement from future construction charges to which the developer will be entitled because of the oversizing, the specific properties that are considered to be the future beneficiaries of the oversizing, and the specific formula to be used in calculating the construction charges to be paid to the city by the owners when those properties are connected to the system. If the city is to construct the oversized facilities, the developer shall be required to fully reimburse the city for all costs actually incurred, including any costs for engineering services during design and construction. That full reimbursement shall be due and payable at the same time as payment of the required connection charge. Any reimbursements back to the developer for oversizing shall not be made until the city has received construction charges from future beneficiaries of the oversizing, as stipulated in the developer's agreement.

(2) If mutually agreeable, the contract for the connection might stipulate that the city shall construct not only the oversized facility but also all other new facilities needed to serve the development. In this case, the developer shall reimburse the city for all costs for design and construction of all work done by the city, but he shall not receive any subsequent reimbursement from future users for the portions not considered to be oversized.

(C) Master Plan Facilities. In general, all facilities depicted in a master plan are to be built by the city, using funds already available to the city and without immediate one-for-one reimbursement from a specific developer. However, it is intended that connection charges shall reimburse the city for those costs. It shall be the policy of the city that the costs of master plan facilities needed for future developments shall be borne primarily by reimbursements to the city from those developments, and that connection charges paid by those developments shall serve as an equitable means of accomplishing the reimbursements. Accordingly, at a frequency of every two to three years the city will review projected future developments, connection charges to be paid by those developments, and projected costs of existing and new master plan facilities needed to serve those developments. After each such review, the required connection charges will be adjusted in an attempt to ensure:

(1) Approximate equality between the then current projected total connection charges to be received from future developments and the then current projected costs of master plan facilities constructed to serve those developments.

(2) The ratio of any one connection charge to projected total connection charges from new developments approximately equal to the ratio of the utility services that development is expected to receive from new master plan facilities and the total services to be provided by those facilities.

(3) (a) It may occur that some of the facilities shown in a master plan will be needed to serve a proposed development, but the then current city construction program will not ensure that those facilities will be available at the time the developer desires to start his construction. In such a case, the developer may, if he wishes, request that he be allowed to assist in accelerating the construction of those master plan facilities needed to serve his development. Upon receipt of such a request, the city will attempt to negotiate mutually agreeable terms concerning: whether the needed master plan facilities will be built by the developer or by the city; who shall pay the costs of the construction; and how much, if any, of the master plan costs paid by the developer will be returned to him in the future. The amount of any such reimbursement will be negotiated on a case-by-case basis, and shall be determined in a manner similar to that described for reimbursement of costs for "Oversized" non-master plan facilities, in § 50.03(B).

(b) Regardless of the size of the agreed upon reimbursement for a developer's payment of the costs of master plan facilities, that reimbursement shall be made from future connection charges. The reimbursement initially shall serve as a direct credit against the connection charges which the developer will be required to pay, as established in this chapter. In the event the agreed upon reimbursement exceeds his own connection charges, then the remainder of the reimbursement will be made from future connection charges, as they are received by the city from other developments.

(c) Details of the reimbursement shall be stipulated in a negotiated developer's agreement, which will indicate: the amount of the reimbursement

the developer is to receive, the period of reimbursement, whether reimbursement shall be from all connection charges collected in that period or only from those collected from specified geographical locations, and whether all or only a specified fraction of each eligible connection charge shall be used for reimbursement.

§ 50.04 PROCEDURES.

(A) Prior to preparing any detailed plans for either water or sewer facilities to serve a new development, the developer shall submit to the City Utility Director written notification of intention to connect to a city utility. Included with the notification should be a preliminary layout of the proposed development, including general location and proposed size of all proposed utility mains, both interior to the development and those necessary to connect to the existing system. He also should submit data as to projected water requirements, both for daily use and fire flow, and projected sewer requirements, both flow rates and type sewage. Unless otherwise indicated, it will be assumed that the developer intends to perform construction of all indicated new mains, without regard to location but subject to any future reimbursement to which he might be entitled.

(B) After allowing two weeks for review of his submittal by the city and the engineer, the developer shall make telephone contact with the engineer to schedule a meeting with the Utility Director and the engineer. The purpose of the meeting will be to reach tentative agreement as to design criteria, who will be performing the work, and if there will be a need for any oversizing and/or special construction of any master plan facilities. At the same time, the developer should request information as to whether his development will be subject to any construction charges because of any previous oversizing that had been considered as beneficial to his development.

(C) Subsequently, the developer will submit to the Utility Director a formal application for connection to the city utility, using forms furnished by the Utility Department. Included with the application will be final construction drawings and specifications, signed and sealed by a Professional Engineer registered in Florida, for all public facilities to be constructed by the developer and the required plan review charge. Upon review and approval of the application, the connection contract and developer's agreement, if required, will be executed.

(D) If it has been agreed that the city is to perform any of the work, then prior to the city beginning to prepare the design and construction documents for that work, the developer will make a deposit cash or check with the city equal to 5% of the estimated total costs to be incurred by the city. The deposit shall be made at the same time as submittal of the application for connection to the city system. As soon as the city receives bids for its construction work, the developer shall deposit with the city an amount which, when added to the previous deposit, equals 110% of the total city costs, as then estimated. This deposit shall be in the form of cash, a check, or a letter of credit. Upon completion of the work, a final accounting shall be made, with the developer making a formal payment to the city equal to actual final total costs incurred, and any unused deposit being returned to the developer.

(E) Any connection charges, construction charges, sewer reserve capacity charges, tapping charges, or meter charges which are due on each structure in a development shall be due and payable no later than issuance of a certificate of occupancy for the structure, and evidence of full payment of those charges shall be a prerequisite of issuance of the certificate of occupancy.

(F) In addition to the above requirements, the developer shall be responsible for accomplishing the following prior to receipt of a certificate of occupancy:

(1) Designing and constructing all water and sewer plumbing on the property owner's side of each service connection. Application for permits, and payment of associated permit fees, for construction of this work shall be in accordance with ordinances and regulations for building permits and certificates of occupancy, as administered by the City Building Department. However, in addition to any review done by the Building Department, the portions of plumbing between buildings and service connections also shall be reviewed by the Utility Department. Therefore, whenever application is made to the Building Department for a permit which includes plumbing to a service connection, a copy shall be submitted to the Utility Department by the developer. It shall be the responsibility of the Utility and Building Departments to ensure that review and comment by the Utility Department are taken into consideration by the Building Department.

(2) Obtaining all permits required by the Building Department and the City Engineer for any work to be done by the developer in city rights-of-ways or easements. Application and payment of fees shall be as required in ordinances and regulations administered by those departments.

(3) Obtaining all permits required by county and state regulatory authorities for any mains to be constructed by the developer. Application and payment of fees shall be as required by those agencies.

(4) Submitting to the utility director the following for any service connections, service laterals, mains, or other portions of the city's utility systems that have been constructed by the developer.

(a) A reproducible mylar and three prints of "as-built" drawings, as reviewed and approved by both the developer's engineer of record and the engineer.

(b) A legal document providing transfer of title to the city for all such property, using forms and/or samples as prepared or approved by the City Attorney.

(c) A one-year maintenance guarantee bond in the amount of 20% of the construction costs. For one year subsequent to approval of the work by the City Utility Director, any repairs or replacements required by the work either shall be

performed by the developer, or the bond shall be used to reimburse the city for costs incurred by the city in correcting the work.

(d) Opening an active account for payment of monthly service charges, including payment of required security deposits and fees for opening the account.

§ 50.05 GUARANTEE OF DEVELOPER AGREEMENT REIMBURSEMENTS.

(A) § 50.03(B) and (C) describe conditions under which a developer shall be entitled to reimbursement for certain portions of his contribution to construction of extensions of city utility systems. Those divisions also stipulate that the money for said reimbursement shall be obtained by the city from construction and/or connection charges to be paid by future developers. It shall be the policy of the city that a developer is entitled to receive at least 50% of the agreed reimbursement by no later than five years after the agreement, and the full amount of the agreed reimbursement by no later than ten years. During the first five years, the city will make payments to the developer only when charges from future developers are received by the city in accordance with the formulas established in the developer's agreement. At the end of the first five years, if the total payments made to the developer up to then are less than 50% of the total agreed reimbursement, the city shall use other available city funds to make a payment to the developer in an amount to bring the total to 50%. In the second five years, payments from received construction and/or connection charges again will be made as received, until the total payments to the developer, including adjustments by the city, reach 100% of the agreed reimbursement. Any construction and/or connection charges received by the city subsequent to payment of 100% of the agreed reimbursement shall be retained by the city.

(B) Total to-date payments also will be reviewed annually at the end of the sixth through tenth years. If totals are less than 60% through 100%, respectively, the city again will use other funds to make a payment in an amount needed to bring the total up to the applicable percentage of the agreed reimbursement.

§ 50.06 PUBLIC UTILITIES TO BE IN PUBLIC RIGHTS-OF-WAY EASEMENTS.

It shall be the policy of the city that subsequent to adoption of this chapter all new city utility facilities shall be located either in a public right-of-way or in an easement formally dedicated to public use. Easements shall be used only if specifically approved by the city, and approval shall be made only if it is demonstrated the restriction to locations in rights-of-way will result in undue hardship upon the developer. When used, easements shall be a minimum of 15 feet wide, with all utilities located at least five feet inside the easement.

§ 50.10 CITY COMMISSION APPROVAL FOR CONNECTION TO A CITY UTILITY.

(A) Within City Limits. All new and existing developments located within the city limits, either as established at the time of adoption of this chapter or as amended in the future, shall be required to connect to the city's utility systems when they are available. Such connections shall be made without any action by the City Commission, except as follows:

(1) If a developer's agreement is required, then the developer's agreement shall be accepted by resolution of the City Commission, prior to execution of the connection contract between the developer and the city.

(2) The city utility systems are designed and constructed primarily for use by residential and commercial customers. No industrial customer shall connect to a city utility system unless the connection is specifically authorized in advance by the City Commission.

(3) The City Commission has determined that as of the adoption of this chapter, no existing or presently proposed user of the city's sewer system is an "EPA Industrial User," as defined herein. Further, it has been determined that existing zoning regulations make it highly unlikely that a prospective user shall be an EPA Industrial User. However, it shall be the policy of the city that an EPA Industrial User shall not be permitted to connect to the city's sewer system unless, and until, the city shall have amended this Code so as to incorporate an EPA approvable "Industrial Cost Recovery System," as defined in Federal Regulations 40 CFR 35.

(B) Outside City Limits. With one exception, property located outside the city limits shall not be allowed to connect to a city utility system unless the connection is authorized by the City Commission. The one exception is that Commission approval shall not be required for any connection in that area covered by the developer's agreements identified in Exhibit "H", Agreement for Sale and Purchase, September 27, 1962, between the city and the West Hollywood Water Company and the West Hollywood Utility Company.

§ 50.12 TAMPERING WITH CITY UTILITY FACILITIES.

Whosoever shall, without consent of the city, operate the valves or controls of, deface, injure, destroy, remove, or otherwise tamper with or tap any pipe, main meter, valve or other facility of the utility systems of the city shall make restitution to the city for any costs incurred by the city resulting from the tampering. In addition, the tampering shall be punishable by a fine of not to exceed \$150, or by imprisonment not exceeding three months, or by both.

§ 50.13 UNAUTHORIZED USE OF CITY UTILITY SYSTEMS.

Whosoever shall, without the permission of the city, take or use water from the city water system, or introduce any liquid or solid substance into the city sewer system, or make a connection to any utility system shall be punished by a fine not exceeding \$250, or imprisonment not to exceed 30 days, or both.

§ 50.14 MODIFICATION OF SERVICE CONNECTIONS AND/OR LATERALS.

If the capacity of an existing service lateral or an existing service connection is inadequate to provide the quantity of service needed by a customer, the modification will be performed by the city, and the property owner shall reimburse the city for all costs actually incurred by the city. At the same time, all security deposits and schedules of charges for the customer shall be adjusted to correspond to the changed capacities.

§ 50.35 USE OF WATER FOR IRRIGATION.

It shall be unlawful for anyone to utilize water from the city water system for lawn sprinkling or any other type of irrigation, domestic or commercial, unless specifically approved by the Utility Director.

§ 50.37 ADEQUACY OF WATER QUANTITIES AND PRESSURES.

(A) The city shall attempt to provide in each area of the city the water quantities and pressures normally required for the daily uses and fire flows usually associated with buildings of up to three stories in height which are constructed and utilized in accordance with the zoning applicable to each area. All extensions to the city water system constructed by a developer also shall be designed and constructed to provide at least that capability in every area that may be served by the extension. However, nothing in this code shall be construed as a guarantee, expressed or implied, that either the city or a developer shall provide any specific quantity or pressure of water.

(B) It shall be the responsibility of each property owner to ascertain the quantity and pressure actually available to the property. In the event the property owner believes the quantity or pressure is not adequate for his purposes, then the property owner shall construct, operate and maintain on his own property such auxiliary pumping and storage facilities as he deems appropriate for his needs. This provision shall be particularly applicable to any structure having a height of more than three stories.

§ 50.38 SEPARATE FIRE SERVICE CONNECTIONS.

(A) Any customer operating structures which have a required fire flow greater than 1,000 gallons per minute may request that he have one or more separate fire service connections. If provided, the customer shall provide two separate plumbing systems on his property, one for normal water uses connected to his standard service connection, and a second system connected to the fire service connection. With the exception of monthly

service charges, all provisions and charges of this chapter applicable to standard service connections shall apply individually to each fire service connection. Fire monthly service charges shall be as specified in § 50.34(E).

(B) A fire service connection and the plumbing attached to it shall be reserved exclusively for fire fighting. The fire service connection shall include a backflow preventer, and there shall be no connection of any kind between the owner's fire plumbing and any plumbing connected to the standard service connection. The fire service connection shall include a weighted check valve fitted with a by-pass having a detector meter. No water shall be drawn from a fire service connection except for fire fighting purposes and periodic tests of the fire systems. A city representative shall be present for all tests, and city representatives shall be allowed unlimited access to inspect any and all portions of the fire system.

§ 50.55 PROHIBITED DISCHARGES INTO CITY SEWER SYSTEM.

It shall be unlawful for any person knowingly to discharge into the city sewer system any of the following substances, under any circumstances.

(A) Cooling water or condensate from air-conditioning or refrigeration equipment.

(B) Overflow or drain water from a swimming pool or water storage tank.

(C) Discharge from roof drains or any other storm drainage system.

(D) Gasoline, benzene, naptha, fuel oil, or other flammable or explosive liquid, gas or solid.

(E) Petroleum products used in vehicles, industrial processes, or paving of surfaces.

(F) Mineral or vegetable distillates, synthetic compounds, vehicles, or pigments from the manufacture or use of paints.

(G) Any improperly shredded wastes from the preparation, cooking or dispensing of food. Such wastes are properly shredded only if all particles can be freely transported under flow conditions normally prevailing in public sewers, with no particle having any one dimension greater than one-half inch.

(H) Any wastes containing at any one time more than 100 ppm of any grease, oil, or oily substance; or a daily average concentration of said substances at over 25 ppm.

(I) Any waters or wastes containing any toxic or poisonous or corrosive substance in sufficient quantities as either to constitute a hazard to humans or animals, either during transportation or treatment of the sewage or in the receiving waters of the

sewage treatment plant discharge, or to interfere with proper operation and maintenance of the sewage transportation and treatment facilities. This prohibition includes, but is not limited to, prohibiting any of the following substances in concentrations greater than the maximums shown:

Substances	Maximum Concentration (ppm)
Cyanides	0.01
Copper, total	0.5
Chromium, hexavalent	0.5
Chromium, total	1.0
Cadmium	0.5
Zinc, total	1.0
Phenols	0.005

(J) Wastes generated from the cleaning or emptying of any grease trap, pretreatment process, or septic tank.

§ 50.56 REQUIRED USE OF GREASE TRAPS.

Any facility engaged in operations producing greasy wastes, including but not limited to preparation or serving of food for consumption by more than one family, shall install and operate grease traps sufficient to ensure compliance with § 50.01.55(H). Grease traps shall be inspected and cleaned on a schedule that assures continued proper functioning.

§ 50.57 PERMITS REQUIRED FOR SOME COMMERCIAL SEWER CUSTOMERS AND ALL INDUSTRIAL SEWER CUSTOMERS.

The city sewer system is designed and constructed primarily for collection and transmission of sanitary sewage. Therefore, it is the policy of the city that any customer engaged in any business that generates liquid wastes which can be expected to have, prior to any pretreatment, one or more characteristics exceeding the limits listed in the § 50.01 definition of sanitary sewage shall:

(A) Include pretreatment process and/or facilities into the design and operation of his business. Unless issued a specific permit to do otherwise, the pretreatment shall ensure that sewage discharged into the city sewer system meets or exceeds the criteria defined in this section for sanitary sewage.

(B) At the time of application for connection to the sewer system, also apply for a permit to operate the pretreatment processes. The application shall include a description of the waste characteristics prior to pretreatment, a description of the proposed pretreatment to be applied, and a description of the sewage characteristics proposed for discharge into the sewer system. The permit will be issued only if:

(1) The discharge will meet or exceed the criteria for sanitary sewage.

(2) Or, meeting those criteria is not economically feasible, the proposed characteristics are as close to sanitary sewage as is economically feasible, and the proposed characteristics will not produce an unacceptable potential hazard to public health and safety, or potential adverse impact upon the sewer system or treatment processes.

(C) Upon receipt of the permit, pay a permit fee of \$50.

(D) The permit shall stipulate the specific conditions which the operation shall satisfy, and the period for which the permit shall be effective. In general, if the permit allows discharges exceeding the sanitary sewage criteria, then the permit shall stipulate a one year period of effectiveness, and require that the property owner construct and maintain facilities suitable for monitoring and metering the sewage prior to discharge into the sewer system. Prior to the end of the effective period, the property owner shall apply for a new permit. That application shall include analyses of actual characteristics of the wastes before and after pretreatment, performed within ten days of the date of application. Each new permit shall require payment of a new \$50 permit fee.

(E) If the permit is for discharges meeting the sanitary sewage criteria, then no special monitoring facilities shall be required. However, the owner shall submit annual analyses of his sewage before and after pretreatment, and the city shall randomly require submittal of unscheduled analyses. The permit shall have an indefinite effective period. However, it shall be canceled at any time that the owner fails to take timely action to correct any violations of the terms of the permit.

(F) If, at any time in the future, the City Commission authorizes connection to the city's sewer system by an "EPA Contributing Industry", as defined herein, then a permit issued to that customer shall require compliance with "Pretreatment Standards for Incompatible Pollutants" as described in Federal Regulations 40 CFR 128.133, and any other regulations as shall be established from time to time by appropriate governmental regulating agencies.

§ 50.58 CONTROL OF INFILTRATION AND INFLOW INTO SEWER SYSTEM.

The intentional introduction into the sewer system of groundwater infiltration or surface inflow of storm waters shall not be allowed. However, it is realized that it can not be totally prevented. Plumbing to connect to the city sewer system shall be designed, constructed and maintained in such a manner as to minimize such occurrences. If analysis by the city indicates that excessive infiltration or inflow is entering the system through privately owned plumbing, the customer shall be requested to repair or modify his plumbing so as to reduce the infiltration/inflow to acceptable limits. Failure to comply shall result in a surcharge being added to the customer's monthly service charge. The surcharge shall be equal to the then existing rate per thousand gallons times the city's

estimate of thousands of gallons of infiltrationinflow entering the system through the customer's plumbing.

§ 50.59 CLOSE OUT OF SEPTIC TANKS.

Whenever a property being served by a septic tank is connected to the city sewer system, the septic tank shall be completely emptied. The contents of the tank shall be pumped out and disposed of by a contractor licensed for such disposal. In particular, the contents shall not be drained into the adjoining ground, nor discharged into the sewer system. After the tank has been emptied, a hole shall be punched in the bottom of the tank, and the tank shall be filled with sand.

LANDSCAPING

§ 153.10 EXEMPTIONS.

The following shall be exempted from the provisions of this chapter.

(A) Parking areas located under or within buildings are exempted from all landscaping and screening requirements.

(B) Single-family platted lots exceeding 10,000 square feet may plug, sprig, or seed the rear yard area.

§ 153.11 INSTALLATION.

(A) All landscaping shall be installed in a sound workmanship-like manner and according to accepted good planting procedures and with the quality of plant materials described in § 153.12. All elements of landscaping, exclusive of plant material except hedges, shall be installed so as to meet all other applicable ordinances and code requirements. Landscaped areas shall require protection from vehicular encroachment.

(B) A qualified representative of the Public Services Department charged with the issuance of landscape permits shall inspect all landscaping. No permanent certificates of occupancy or similar authorization will be issued unless the landscaping meets the requirements provided in this chapter.

§ 153.12 PLANT MATERIAL.

(A) Plant materials used in conformance with the provisions of this chapter shall conform to the Standards for Florida No. 1 or better, as given in the latest edition of "Grades and Standards for Nursery Plants" published by the State Department of Agriculture. Grass sod shall be clean and reasonably free of weeds and noxious pests or diseases. Grass seed shall be delivered to the job site in bags with Florida Department of Agriculture tags attached, indicating the seed grower's compliance with the State Department's quality-control program.

(B) Trees shall be species having an average mature spread of crown greater than 30 feet and having trunk(s) which can be maintained in a clean condition over five feet of clear wood. Trees having an average mature spread of crown less than 30 feet may be substituted by grouping of them so as to create the equivalent of a 30-foot crown spread. However, the minimum size shall be 10'-12' in height with a spread of 5'-6', and a 2 ½" caliper.

(1) Palms shall be considered trees in accordance with standards set forth in the current official "SFWMD Plant Guide" available at Engineering Division. The minimum height of a palm at planting shall be ten feet. This minimum height shall

be measured from the base of the palm to the bud of the palm. Three (3) palms minimum ten feet planted in close proximity to each other will be considered one (1) tree.

(2) Trees of species whose roots are known to cause damage to public roadways or other utilities works shall not be planted closer than 12 feet to such utilities, unless the tree root system is completely contained within a barrier for which the minimum interior containing dimensions shall be five feet square and five feet deep, and for which the construction requirements shall be four-inch thick concrete, reinforced with No. 10 road mesh (6 x 6) or equivalent. A list of such tree species shall be named in the official current plant lists. Except as otherwise provided herein, all trees shall conform to the minimum standards as set forth in this section.

(C) Shrubs and hedges shall be a minimum of two feet in height when measured immediately after planting, except as otherwise specified. Hedges, where required, shall be planted and maintained so as to form a continuous, unbroken, solid, visual screen within a maximum of one year after time of planting. Material used for hedges shall be full to the base and shall be planted so that the branch tips are touching at the time of installation.

(D) Vines shall be a minimum of 30 inches in height immediately after planting and may be used in conjunction with fences, screens, or walls to meet physical barrier requirements as specified.

(E) Ground covers used in lieu of grass in whole or in part shall be planted in a manner so as to present a finished appearance and a reasonably complete coverage within three months after planting.

(F) Grass areas shall be planted in species normally grown as permanent lawns in the county. Grass areas may be sodded, plugged, sprigged, or seeded. However, solid sod shall be used in swales or other areas subject to erosion. In areas where other than solid sod or grass is used, grass seed shall be sown for immediate effect and protection until coverage is otherwise achieved.

(G) In instances where healthy plant material exists on a site prior to its development, the Engineering Division, with the issuance of landscape permits, may adjust the application of standards to allow credit for the plant material if, in the City's opinion, an adjustment is in keeping with and will preserve the intent of this chapter.

(H) Landscape; xeriscape required. In order to promote and advance the conservation of water in the city, notwithstanding anything to the contrary in this chapter, all property required to be landscaped in the city shall use native and drought resistant plant material for a minimum of 50% of the vegetation installed. The city hereby adopts the South Florida Water Management District (SFWMD) Plant Guide as the source of acceptable plant materials. All installation and selection of plant materials required by this chapter shall be in accordance with the SFWMD Plant Guide. All existing references to the approved plant list shall be deemed to refer to the SFWMD Plant Guide. The city

further agrees to maintain a minimum of three copies of the SFWMD Plant Guide in the Office of the City Clerk. Any violation of this section shall result in the general penalty set forth in § 10.99 of the code, or as otherwise provided by law.

§ 153.13 GRASS OR GROUND COVER.

All property other than the required landscaped strip lying between the right-of-way and off-street parking area or other vehicular use area shall be landscaped with at least grass or ground cover.

§ 153.14 LANDSCAPING ADJACENT TO PUBLIC RIGHTS-OF-WAY.

On the site of a building, structure, or open-lot use providing an off-street parking area or other vehicular use area, where the area will not be entirely screened visually by an intervening building or structure from any abutting right-of-way, excluding dedicated alleys, the following landscaping adjacent to the right-of-way shall be provided.

(A) A strip of land at least ten feet in depth located adjacent to the right-of-way and the off-street parking area or other vehicular use area which is exposed to an abutting right-of-way shall be landscaped. The landscaping shall include one tree for each 40 lineal feet or fraction thereof. The trees shall be located between the abutting right-of-way and off-street parking area or other vehicular use area, excluding any utility easement areas, and shall be planted in a planting area of at least 100 square feet with a dimension of at least nine feet. In addition, a hedge, wall, or other durable landscape barrier of at least two feet in height shall be placed along the perimeter of the landscaped strip. If the durable barrier is of nonliving material, for each ten feet thereof, one shrub or vine shall be planted abutting the barrier but need not be spaced ten feet apart. The shrubs or vines shall be planted along the street side of the barrier unless they are of sufficient height at the time of planting to be readily visible over the top of the barrier. The remainder of the required landscaped areas shall be landscaped with grass, ground cover, or other landscape treatment, except paving.

(B) All property other than the required landscaped strip lying between the right-of-way and off-street parking area or other vehicular use area shall be landscaped with grass or other acceptable cover.

(C) Necessary accessways from the public right-of-way through all such landscaping shall be permitted to service the parking or other vehicular use areas. The accessways may be subtracted from the lineal dimensions used to determine the number of trees required.

§ 153.15 SIGHT DISTANCE FOR LANDSCAPING ADJACENT TO PUBLIC RIGHTS-OF-WAY TO POINTS OF ACCESS.

(A) When an accessway intersects a public right-of-way or when the subject property abuts the intersection of two or more public rights-of-way, all landscaping within the triangular areas shall conform to Florida Department of Transportation (FDOT) Roadway and Traffic Design Standards for Design Construction, Maintenance and Utility Operations on the State Highway System, Standard Index 546, and Engineering Division details R13, R14, and R15, as amended and updated from time to time.

§ 153.16 PERIMETER LANDSCAPING.

(A) On the site of a building, structure, or open-lot use providing an off-street parking area or other vehicular use area, where the area will not be entirely screened visually by an intervening building or structure from abutting property, screening shall be required as provided in this section. That portion of the area not screened shall be provided with a wall, hedge, or other durable landscape barrier at least three feet in height, with spacing as provided in the SFWMD Plant Guide, to form a buffer between the off-street parking area or other vehicular use area and the abutting property. This landscape buffer shall be located between the common lot line and the off-street parking area or other vehicular use area exposed to the abutting property, provided the purpose of screening the off-street parking area or other vehicular use area is accomplished, and shall comply with the yard requirements as provided in Chapter 155 of the code for all applicable districts.

(B) In addition, one tree shall be provided for each 50 lineal feet or fractional part thereof. Trees shall be located between the common lot line and the off-street parking area or other vehicular use area. Each tree shall be planted in at least 100 square feet of planting area with a minimum dimension of at least nine feet. Each planting area shall be landscaped with grass, ground cover, or other landscape material, excluding paving, in addition to the required tree.

(C) Where multiple building are designed on a site the Planning and Zoning Board may waive or modify the buffer requirements to be located on the common property line between parcels provided the intent of this Chapter 153 is met.

§ 153.17 PARKING AREA INTERIOR LANDSCAPING.

(A) Off-street parking area requirements shall be calculated as follows: (1) one tree for each three parking spaces and at least ten square feet of interior landscaping for each parking space. In addition, other vehicular use areas shall have one square foot of landscape area for each 100 square feet or fraction thereof, of paved area up to the first 50,000 square feet of paved area, plus one square foot of landscaped area for each 200 square feet or fraction thereof, of paved area for all paved area over 50,000 square feet. However, in industrial zoned areas, requirements shall be reduced by 50%.

(B) Where the property contains both parking areas and other vehicular use areas, the two types of areas may be separated for the purposes of determining the other vehicular use area by first multiplying the total number of parking spaces by 400 and subtracting the resulting figure from the total square footage of the paved area. Each separate landscaped area shall contain a minimum of 100 square feet, shall have a minimum dimension of at least nine feet, and shall include at least one tree having a clear trunk of at least five feet, with the remaining area adequately landscaped with shrubs, ground cover, or other authorized landscaping material not to exceed three feet in height. The total number of trees shall not be less than one for each 100 square feet or fraction thereof, of required interior landscaped area. The landscaped areas shall be located in such a manner as to divide and break up the expanse of paving.

(C) In other vehicular use areas where the strict application of this section will seriously limit the function of the area, the required landscaping may be located near the perimeter of the paved area, including those perimeters that may be adjacent to a building on the site. The required interior landscaping which is relocated as provided herein shall be in addition to the perimeter landscaping requirements.

(D) Landscaping of interior islands should be a mixture of ground cover, hedge material trees, palms and sod; however no more than 50% of the total island area is to be sodded. Vehicles can only encroach into sodded islands, islands that are fully landscaped must be protected by wheel stops in the parking island. Where the islands are sodded the three foot encroachment into the island may be used as part of the required 19 feet. The intent is to create a fully landscaped parking lot without disrupting continuous parking stalls. Landscaping will be located to direct traffic while providing masses of shade.

§ 153.18 SINGLE-FAMILY RESIDENTIAL.

(A) All single family developments will have one street tree per 40 lineal feet, or fraction thereof. These trees will be located in the swale (green) area in between the roads edge and the sidewalk. Trees that are located in swales that are (6) six to (8) eight foot in width will require the use of a root barrier to protect the sidewalk from root damage. The root barrier will be installed per the manufacturer's recommendations. In right-of-ways with less than a (6) six-foot swale area the street trees will be located in the front yard (5) five feet from the sidewalk and a root barrier will be used along the sidewalk adjacent to the tree.

(B) Tree, shrub, accent plants and ground cover quantities will be calculated as follows:

One (1) tree for every 1,500 square feet or fraction thereof, of which at least (1) tree must be a flowering tree. A minimum of three trees per unit and the maximum of 10 trees per lot shall be required.

Two (2) accent plants per unit.

Thirty (30) shrubs per unit.

Thirty (30) ground cover per unit.

(C) Common areas. All common areas, excluding totally enclosed privacy areas, for attached and detached single-family units shall be landscaped, irrigated, and sodded. At the time of site plan approval, a landscape plan depicting the common areas shall be reviewed and approved by the Planning and Zoning Board of the city. The planting requirements shall be calculated for the common area as one tree for every 1,000 square feet, or fraction thereof.

§ 153.19 MULTIPLE FAMILY RESIDENTIAL.

(A) The complete site area shall be landscaped in accordance with an approved site plan. The grass areas shall be sodded. The planting requirement shall be based on the requirement of 25 shrubs per unit on the first floor, and five shrubs per unit for all units on the second and third floors, and no shrubs for units in excess of three stories. For each multiple unit or apartment, trees shall be provided at a rate of one and one-half trees per each first floor unit, one tree per unit for all units on the second floor, and thereafter at the rate of one-half tree per unit for every unit including the third floor and above.

(B) For all residential developments of three stories, the following landscape standards will apply.

(1) Sixty percent of the required trees shall meet the minimum requirements of the landscape code as identified in § 153.12(B).

(2) Twenty percent of the required trees shall be 12 feet to 14 feet in height.

(3) Twenty percent of the required trees shall be 14 feet to 16 feet in height.

(C) For residential developments of four stories, the following landscape standards shall apply.

(1) Forty percent of the required trees shall meet the minimum requirements of the landscape code as identified in § 153.12(B).

(2) Thirty percent of the required trees shall be 12 feet to 14 feet in height.

(3) Thirty percent of the required trees shall be 14 feet to 16 feet in height.

(D) For residential developments of five or more stories, the following landscape standards shall apply.

(1) Twenty-five percent of the required trees shall meet the minimum requirements of the landscape code as identified in § 153.12(B).

(2) Twenty-five percent of the required trees shall be 12 feet to 14 feet in height.

(3) Fifty percent of the required trees shall be 14 feet to 16 feet in height.

§ 153.20 NON RESIDENTIAL.

(A) For non residential properties under 20,000 square feet, complete site area shall be landscaped in accordance with the approved site plan. The grass area shall be sodded. The planting requirement shall be calculated on the following basis.

(1) That required due to off-street parking plus;

(2) That which is calculated on a basis of one tree for every 2,500 square feet of gross area plus;

(3) That which is calculated on a basis of ten shrubs for every 5,000 square feet of gross area.

(B) For non residential properties over 20,000 square feet, the complete site area shall be landscaped in accordance with the approved site plan. The grass area shall be sodded. Where grass area exceeds 10,000 square yards in area, the area in excess may be plugged, sprigged, or seeded. The planting requirement shall be calculated on the following basis.

(1) That required for off-street parking plus;

(2) That which is calculated on a basis of one tree for every 5,000 square feet of gross area or fraction thereof.

(3) That which is calculated on a basis of 40 shrubs for the first 20,000 square feet of gross area plus five shrubs for each additional 5,000 square feet or fraction thereof, of gross area.

(C) For all non residential developments of three stories, the following landscape standards shall apply.

(1) Sixty percent of the required trees shall meet the minimum requirements of the landscape code as identified in § 153.12(B).

(2) Twenty percent of the required trees shall be 12 feet to 14 feet in height.

(3) Twenty percent of the required trees shall be 14 feet to 16 feet in height.

(D) For non residential developments of four stories, the following landscape standards shall apply.

(1) Forty percent of the required trees shall meet the minimum requirements of the landscape code as identified in § 153.12(B).

(2) Thirty percent of the required trees shall be 12 feet to 14 feet in height.

(3) Thirty percent of the required trees shall be 14 feet to 16 feet in height.

(E) For non residential developments of five or more stories, the following landscape standards shall apply.

(1) Twenty-five percent of the required trees shall meet the minimum requirements of the landscape code as identified in § 153.12(B).

(2) Twenty-five percent of the required trees shall be 12 feet to 14 feet in height.

(3) Fifty percent of the required trees shall be 14 feet to 16 feet in height.

(F) The entire site will be irrigated with water from a non potable source.

(G) Where the total area of a site plan exceeds 1,000,000 gross square feet, the site plan will be landscaped to meet the intent of the landscape ordinance and subject to approval by the Planning and Zoning Board.

§ 153.24 BOULEVARD STRIPS.

(A) Boulevard strips abutting single-and multiple-family residential units.

(1) The boulevard strip shall be sodded. Where the area is bordered by a sidewalk and curbing, it shall be contoured to insure satisfactory surface run-off. Planting will be considered in this area provided that the stock is of type as specified in

the approved list for boulevard planting and that the planting does not encroach beyond the center line closest to the public right- of-way.

(2) Where the area is not curbed, the block drainage pattern is of utmost consideration and must be respected. Planting shall not take place in the center line of the swale. Planting, however, will be considered on the residential side of the slope provided that the stock is of type as specified in the approved list for boulevard planting and that the planting does not take place closer than two feet from the center line of the swale.

(3) All planting on city property must be per an approved site plan. A major consideration on approval of any site plan will be the location of underground services and utilities.

(B) Boulevard strips abutting commercial and institutional property.

(1) The boulevard strip shall be sodded. Where the area is bordered by a sidewalk and curbing, it shall be contoured to insure satisfactory surface run-off. Planting will be considered in this area provided that the stock is of type as specified in the approved list for boulevard planting and that the planting does not encroach beyond the center line closest to the public right-of-way.

(2) Where the area is not curbed, the block drainage pattern is of utmost consideration and must be respected. Planting shall not take place in the center line of the swale. Planting, however, will be considered on the residential side of the slope providing that the stock is of type as specified in the approved list for boulevard planting and that the planting does not take place closer than two feet from the center line of the swale.

(3) All planting on city property must be as per an approved site plan. A major consideration on approval of any site plan will be the location of underground services and utilities.

§ 153.21 AMENITIES.

All medians, recreational buildings, and non-residential structures within or bordering a development shall be landscaped and irrigated by the developer as per an approved site development plan. Grass areas shall be sodded. Planting stock is to be of a type in the approved plant list.

§ 153.22 WATERWAYS.

All waterways or waterway maintenance easements shall be landscaped to the water's edge in accordance with an approved site development plan and according to South Broward Drainage District standards. Where a waterway directly abuts public rights- of-way and where the ingress and egress from commercial property is over the

waterway, then the responsibility for landscape development and maintenance of the nonpaved portion fronting on the property shall be the responsibility of the owner.

§ 153.23 IRRIGATION SYSTEMS; PERMITTED HOURS OF WATERING.

(A) All automatic irrigation systems installed after June 1, 1992 in the city boundaries, shall be equipped with a rain sensor or switch that will override the irrigation cycle of the sprinkler system when adequate rainfall has occurred. Any person who purchases and/or installs an automatic sprinkler system in the city after June 1, 1992 shall be responsible for compliance with this section.

(B) Furthermore, all irrigation systems and all watering of landscaping within the municipal boundaries of the city shall occur only between the hours of 4:00 p.m. and 10:00 a.m.

(C) A violation of any of the provisions of this section shall result in the general penalty set forth in § 10.99 of the code, or as otherwise provided by law.

§ 153.24 DISTRICT BOUNDARY YARDS.

(A) All yards required under § 155.056 shall be completely landscaped in accordance with an approved site plan. The grass area shall be sodded and irrigated with a non potable water source.

(B) Where residential and non-residential uses are separated by a right-of-way 106 feet or more, the yard shall be landscaped as per right-of-way perimeter landscaping requirements, where separated by a street less than 106 feet, trees shall be placed per 35 feet or fraction thereof. Where business and residential areas abut, trees shall be one per 25 feet or fraction thereof, and 12 feet high at the time of planting with an eight foot spread and three inches of caliper.

(C) There shall be a continuous hedge planted along the district boundary except where a masonry wall is required by the Zoning Code. Plants shall be a minimum height of thirty inches at planting.

§ 153.25 GARBAGE AND REFUSE STORAGE AREAS.

In all districts, landscape treatment of garbage and refuse storage areas shall be to the extent that the areas are not visible at a height of six feet from abutting properties.

§ 153.26 ACCESSORY FACILITIES.

Recreational facilities, either commercial or private, shall be substantially landscaped. Landscaping for the facilities cannot be utilized in fulfilling or contributing to the minimum requirements for any residential landscaping.

§ 153.27 MAINTENANCE OF LANDSCAPING BY OWNER.

The owner shall be responsible for the maintenance of all landscaping, which shall be maintained in good condition so as to present a healthy, neat, and orderly appearance and shall be kept free from refuge and debris. All landscaped areas shall be provided with a readily available water supply or appropriate approved irrigation system. Procedure for enforcement of maintenance shall be as outlined in § 153.40.

§ 153.28 ACCESSWAYS.

(A) Necessary accessways from the public right-of-way through all landscaped areas shall be permitted to service the parking or other vehicular use area.

(B) No more than one two-way accessway shall be permitted for any street frontage up to 100 lineal feet, or no more than two one-way accessways shall be permitted for any street frontage up to 100 lineal feet. These standards shall be applicable to any property under one ownership. Where single ownership involves over 100 feet of street frontage, one additional two-way or two additional one-way drives may be permitted for each additional 100 feet of frontage or major fraction thereof. The balance of the street frontage not involved with accessways shall be landscaped in accordance with the provisions of this chapter.

ADMINISTRATION AND ENFORCEMENT

§ 153.40 REVIEW AND INSPECTIONS; NOTICE OF VIOLATIONS.

(A) All site development plans shall be reviewed by the appropriate city staff for conformance to landscaping and screening requirements, prior to issuance of a building permit. All landscaping shall be inspected in the field by a representative of the city. A final landscape inspection must be approved for each site in conjunction with all other discipline finals prior to a certificate of occupancy being issued.

(B) Landscaping shall be inspected periodically by the city to insure proper maintenance. The owner shall be notified by the city, in writing, of any areas which are not being maintained as provided in this chapter, and shall, within 30 days from the time of notification, restore the landscaping to a healthy condition.

§153.41 APPLICATION FOR MODIFICATION OF LANDSCAPING REQUIREMENTS.

(A) The Planning and Zoning Board, upon receipt of an application for a modification of landscaping requirements provided in this chapter, which is filed on a form prescribed by the city and executed and sworn to by the owner of the property concerned or by authorized agents as evidenced by written power of attorney, and accompanied by the applicable fee, shall have the authority and duty to consider and act upon the application. The applicant shall, in the application, clearly and in detail state what modification of requirements is being requested and the reasons the modification is warranted, and shall accompany the application with supplementary data, such as sketches, surveys, and statistical information that is deemed necessary to substantiate the modification.

(B) The Planning and Zoning Board may approve, change, or deny the requested modification. The Board shall approve or change only if it determines that approval or change of any modification would not be contrary to the public interest, would be in keeping with and would preserve the intent of this chapter, and that literal enforcement of the standards of this chapter would be impracticable and would result in unreasonable and unnecessary hardship.

§ 153.42 APPEALS TO BOARD OF ADJUSTMENT.

(A) Within ten days after posting of the decision as provided in § 153.41, but not thereafter, any decision of the Planning and Zoning Board may be appealed by the applicant to the Board of Adjustment; otherwise the decision shall become final. The applicant will pay the applicable fee.

(B) The appeal shall be on a form prescribed by the city and shall be filed with the appropriate city office. The petitioner shall be notified of the time and place the appeal will be heard by the Board of Adjustment. The appeal shall state in brief, concise

language, the grounds and reasons for the ruling made by the Planning and Zoning Board. The Board of Adjustment may affirm, modify, or reverse the ruling of the Planning and Zoning Board.

§ 153.99 PENALTY.

Violations of this chapter shall be punishable as provided by § 10.99.

GENERAL SPECIFICATIONS

I. APPLICABLE CODES:

A. GENERAL:

All construction and materials shall conform to the Standards and Specifications of the City of Pembroke Pines Engineering Division, Broward County Department of Planning and Environmental Protection (BCDPEP), Broward County Health Department (BCHD), South Broward Drainage District (SBDD), South Florida Water Management District (SFWMD), and all other local and national codes where applicable.

B. CONSTRUCTION SAFETY:

All construction shall be done in a safe manner, specifically, the rules and regulations of the Occupational Safety and Health Administration (OSHA) and the Manual of Uniform Traffic Control Devices (MUTCD) shall be strictly observed.

C. TRENCH SAFETY ACT

1. Contractor shall be solely responsible for compliance with the State of Florida Trench Safety Act.
2. Where excavations to a depth in excess of five feet (5') are required, the Contractor shall include the following information in the bid:
 - a. A reference to the trench safety standards that will be in effect during the period of construction of the project.
 - b. Written assurances by the contractor performing the trench excavation that such Contractor will comply with the applicable trench safety standards.
 - c. A separate item identifying the cost of compliance with the applicable trench safety standards.
3. Where a bid is not submitted, the Contractor shall submit the information listed in Item 2, to the Engineer prior to starting work.

D. SURVEY DATA:

All elevations on the plans or referenced in the specifications are based on National Geodetic Vertical Datum of 1929 (NGVD).

II. PRECONSTRUCTION RESPONSIBILITIES:

- A. Upon receipt of Notice of Award, the Contractor shall arrange a Preconstruction Conference to include the City of Pembroke Pines Engineering Division, the Owner, the Engineer and himself after obtaining a construction permit from the Engineering Division.
- B. The Contractor shall obtain a SUNSHINE Certification number at least 48 hours prior to beginning any excavation.
- C. Prior to beginning construction, the Contractor shall verify the size, location, elevation, and material of all existing utilities within the area of construction.
- D. The Contractor shall be responsible for damage to any existing utilities for which he fails to request a Sunshine Certification Number. He is responsible as well for damage to any existing utilities, which have been properly located.
- E. If upon excavation, an existing utility is found to be in conflict with the proposed construction or to be of a size or material different from that shown on the plans, the Contractor shall immediately notify the Engineer, who will in turn notify the City of Pembroke Pines Engineering Division.

III. INSPECTIONS:

- A. The Contractor shall notify the City of Pembroke Pines Engineering Division (435-6511), SBDD (680-3337), Florida Department of Transportation (Pines Boulevard and Flamingo Road right-of-way (776-4300) and the Engineer of Record at least 24 hours prior to beginning construction and prior to the inspection of the following items:
 - 1. storm drainage
 - 2. sanitary sewer
 - 3. water system
 - 4. subgrade – Submit and have approved densities prior to placement of rock.
 - 5. limerock base – Submit and have approved densities and as-builts prior to the placement of any asphalt.
 - 6. asphaltic concrete
 - 7. final
- B. All inspections will be made by the City of Pembroke Pines, SBDD, and FDOT. The Engineer of Record will provide construction observation service.

IV. SHOP DRAWINGS:

- A. Prior to issuance of construction permit, a Materials Review List shall be submitted to and reviewed by the Engineer of Record and the City of Pembroke Pines Engineering Division for fire hydrants, valves, piping, lift stations and other accessories.
- B. Any product that is not on this list must be approved in advance by the Engineer of Record and the City of Pembroke Pines Engineering Division. Such approval requires the submission of a shop drawing (six copies) for each product. Shop drawings will also be required for all non-standard items.
- C. Individual shop drawings for all precast structures are required and shall be submitted to and reviewed by the Engineer of Record and the City of Pembroke Pines Engineering Division Prior to issuance of a construction permit.

V. TEMPORARY FACILITIES:

A. TEMPORARY UTILITIES:

- 1. It shall be the Contractor's responsibility to arrange for or supply temporary water service, sanitary facilities and electricity to his employees and subcontractors for their use during construction.
- 2. It shall be the Contractor's responsibility to obtain a construction meter for all water used on job. The cost of all water used for cleaning, testing, etc. will be the Contractor's responsibility. If water cannot be metered then it will be calculated.

B. TRAFFIC REGULATION:

- 1. Maintenance of traffic in the public right-of-way shall be in accordance with the MUTCD and BCTED.
- 2. All open trenches and holes adjacent to roadways or walkways shall be properly marked and barricaded to assure the safety of both vehicular and pedestrian traffic.
- 3. No trenches or holes near walkways or in roadways or their shoulders are to be left open during nighttime hours without express permission of the City of Pembroke Pines Engineering Division.

VI. PROJECT CLOSEOUT:

A. CLEANING UP:

1. During construction, the project site and all adjacent areas shall be maintained in a neat and clean manner. Upon final clean up, the project site shall be left clear of all surplus material or trash. The paved areas shall be swept broom clean.
2. The Contractor shall restore or replace, when and as directed by the Engineering Division of the City of Pembroke Pines, any public or private property damaged by his work, equipment, employees or those of his subcontractors to a condition at least equal to that existing immediately prior to the beginning of operations. To this end, the Contractor shall do as required, all necessary highway or driveway, sidewalk and landscaping work. Suitable materials and methods shall be used for such restoration.
3. Where material or debris has washed or flowed into or been placed in water courses, gravity sewer, ditches, drains, catch basins, or elsewhere as a result of the Contractor's operations, such material or debris shall be removed and satisfactorily disposed of during progress of the work, and the area kept in a clean and neat condition.
4. When working in and around existing drainage canals, appropriate silt barriers shall be installed as required by the South Broward Drainage District.

B. PROJECT RECORD DOCUMENTS:

1. The Contractor shall maintain accurate and complete records of work items completed.
2. All "as-built" information submitted to the Engineer shall be sufficiently accurate, clear and legible to satisfy the Engineer that the information provides a true representation of the improvements constructed.
3. Upon completion of construction, the Contractor shall submit to the Engineer of Record one complete set of "as-built" construction drawings. These drawings shall be marked to show "as-built" construction changes and dimensioned locations and elevations of all improvements and shall be signed by the Contractor.
4. All "as-built" information on elevations, stationing offsets and ties of the water, sanitary sewer, paving and drainage shall be certified by a registered land surveyor.
5. As-built information on the water & sewer system shall include, but not limited to, locations of all valves, fittings, fire hydrants, water and sewer services, manholes and top-of-pipe elevations at 100-foot intervals as a minimum.

6. Prior to a final inspection by the City of Pembroke Pines Engineering Division, the Engineer shall submit two (2) sets of blueprints of "As-Built" construction drawings.
7. Upon a final inspection by the City of Pembroke Pines Engineering Division, the Engineer shall submit to the City one (1) complete set of reproducible mylars, three (3) sets of blue prints of "as-built" construction drawings that have been certified by a registered land surveyor and the Engineer of Record and computer files of "as-built" construction drawings on 3 1/2" floppy disks in AutoCADD release 14 format or latest revision.
8. Prior to the placement of any asphalt or concrete pavement, the Contractor shall submit to the Engineer "as-built" plans showing limerock base grades, and all drainage, water and sewer improvements. Paving operations shall not commence until the Engineer and the City of Pembroke Pines has reviewed and approved the "as-builts".
9. All required density and LBR test results for subgrade shall be provided to and approved by the Engineer and the City of Pembroke Pines prior to placing limerock base material.
10. All required density and LBR test results for limerock shall be provided to and approved by the Engineer and the City of Pembroke Pines prior to placing asphalt.

VII. WATER DISTRIBUTION AND/OR SEWAGE FORCE MAIN SYSTEM:

A. GENERAL

1. The Contractor shall notify the City of Pembroke Pines Engineering Division and the Engineer of Record no later than 24 hours prior to making connections to existing systems. A City of Pembroke Pines Engineering Division representative and the Engineer of record must be present.
2. Separation of Water and Sewer Mains:
 - a. Parallel water and sewer mains shall have a minimum 10' horizontal separation. Where this is not possible, the sewer main shall be in a separate trench and be at least 18" below the water main and both mains shall be ductile iron per pressure pipe specifications.
 - b. The sewer main shall cross below all water mains with a minimum of 18" vertical clearance. Where the clearance is less than 18", the sewer main and the water main shall be ductile iron pipe, with a minimum 12" clearance for 20' centered on the point of crossing. All joints on the water main within 20 feet of the crossing shall be mechanically restrained.

- c. If a sewer main must cross above a water main, regardless of vertical clearance, the precaution in item (b) above shall be taken.
3. No connections to the existing lines shall be made until pressure tests, for the water mains and sewer force mains, and bacteriological tests have been performed and the system is acceptable to the City of Pembroke Pines and the Broward County Health Department.
4. Cleaning of newly installed piping systems shall be accomplished using pipe pigging methods. Open flushing shall not be allowed without prior approval of the City of Pembroke Pines Engineering Division. All water will be accounted for.
5. All efforts shall be made so that water and force mains cross above drainage lines with adequate cover and separation. If this is not possible, it shall be indicated on the plans.
6. A three (3) foot lateral separation shall be maintained between water/sewer lines and obstructions (ie., catch basins, concrete poles, etc.) five (5) foot from trees.
7. The maximum depth to the bottom of pressure mains shall be installed as not exceed six (6) feet unless otherwise approved by the City of Pembroke Pines Engineering Division.
8. Restrained joints shall be used, in lieu of concrete thrust blocks, at all changes in direction of water mains, sewage force mains and elsewhere as indicated on the drawings. Restrain all pipe joints within the distances on each side of fittings as required to properly restrain and support bends, tees, valves, dead ends and other such fittings with the exception of fire hydrants.

B. MATERIALS:

1. Pipe:

The water main and/or sewage force main shall be either polyvinyl chloride (PVC) or Ductile Iron Pipe (D.I.P.) and shall be designed for a minimum working pressure of 150 psi.

- a. PVC pipe shall be pressure pipe with iron O.D., Class 150 (DR 18), conforming to ANSI/AWWA C900-97 or C905-97 or latest revision and shall have push on rubber gasket joints.
- b. D.I.P. shall be Class 350 wall thickness (up to 12"), Class 300 (14"-18"), Class 250 (20" or greater) with interior cement lining conforming to ANSI/AWWA C151/A21.51-96, or latest revision. Sewage pipe shall be either double cement conforming to ANSI/AWWA C104/A21.4-95 or latest revision, or polyethylene lined conforming to ANSI/AWWA C105/A21.5-93 or latest revision, or approved equal. The pipe shall withstand a working

pressure of 350 psi. The joints shall be bell and spigot push on type, mechanical joint or flanged. Flanged pipe shall conform with the physical and chemical requirements as set forth in the Handbook of Ductile Iron Pipe of the Cast Iron Pipe Research Association.

2. Fittings:

Fittings shall be ductile iron compact mechanical joint type and shall be class 350 through 24" conforming to ANSI/AWWA C153/A21.53-94, or latest revision, and class 250 in sizes 24" and larger, conforming to ANSI/AWWA C110/A21.10-93, or latest revision, complete with glands, gaskets, bolts and nuts. All fittings shall be cement lined and seal coated with the same as pipe.

3. Valves:

a. Valves shall be gate valves for water (4"-12" in size), butterfly valves for water (16" and up in size), or plug valves for sewer (all sizes).

i. Gate valves shall be iron body, fully resilient seat, bronze mounted non-rising stem, double disc, rated at 200 psi and conforming to ANSI/AWWA C509-94 or latest revision. Exposed valves shall be outside screw and yoke type.

ii. Butterfly valves and operators shall conform to ANSI/AWWA C504-94 or latest revision standard for rubber-seated butterfly valves and shall be class 150 A or B.

iii. Plug valves shall be semi-steel body, non-lubricated, eccentric type, with resilient faced plugs, and capable of drip-tight shut off at the rated pressure if applied at either port. Valves are to be equipped with actuating nuts, cast iron handwheels or chain operators, with galvanized steel chains, as appropriate for the installation and type of operator.

b. Air Release Valves

i. Sewer Force Main Air Release Valves - System shall be a combination of one sewage air release valve and one sewage air/vacuum valve with dual isolation plug valves. Both valve bodies and covers shall be of cast iron construction, ASTM A126-B. All internal parts shall be of stainless steel, ASTM A240 - Type 304 and ASTM A276 - Type 303. The venting orifice shall be 5/16" in diameter with stainless steel seat. The inlet openings shall be a minimum of 2" NPT screwed connection for both valves. The valves shall be fully capable of operation in sewage

force main. Both valves shall include a back-flushing feature for periodic cleaning of the internal mechanism. The overall height shall not exceed 22 1/2 inches.

ii. Water Main Air Release Valves - Valve body and cover shall be of cast iron construction, ASTM A126-B. All internal parts shall be of stainless steel, ASTM A240 - Type 304 for the float and ASTM A296 - Type 316 for the linkage. The venting orifice shall be 3/16" in diameter with brass seat. The inlet opening shall be a 2" NPT screwed connection. The overall height shall not exceed 13 inches.

c. A reflective pavement marker shall be installed in the center of the nearest lane of road pavement adjacent to all valve locations outside the road pavement. Water markers shall be white, sewer markers shall be green.

4. Fire Hydrants:

a. Fire hydrants shall have a minimum 5 1/4" valve opening and shall open against the pressure and closing with the flow. Hydrants shall meet or exceed ANSI/AWWA C502-94, C503-97 or latest revision, and shall comply with Factory Mutual Research Corporation and Underwriters Laboratories UL246 Standard.

b. A blue reflective pavement marker shall be provided in the center of the nearest lanes of road pavement adjacent to all fire hydrant locations.

5. Detector Tape:

Detector tape shall be 3" wide blue tape for water main and brown tape for force main with a metallized foil core laminated between 2 layers of plastic film. The words "CAUTION WATER LINE BURIED BELOW" or "CAUTION FORCE MAIN BURIED BELOW" shall be printed at 30" intervals along the tape. Tape shall be placed 18" below grade above all PVC mains and services or as recommended by manufacturer. Non-metallic tape shall be used above ductile iron pipe.

6. Service Connections:

a. Service saddles shall be Ductile Iron epoxy or nylon coated with double STAINLESS steel straps or single wide strap. Saddles shall conform to ANSI/AWWA C111/21.11-95 and ASTM A 588 or latest revision.

b. Service lines shall be polyethylene (PE) tubing as described in ANSI/AWWA C901-96, or latest revision with a working pressure of 200 psi (DR 9). Pipe joints shall be of the compression type totally confined grip seal and coupling nut. Polyethylene shall be extruded from PE 3408 high molecular weight materials and must conform to ASTM D2737.

- c. Corporation stops shall be manufactured of brass alloy in accordance with ASTM B62 with threaded ends.
- d. Meter stops shall be the 90 degree lockwing type and shall be of bronze construction in accordance with ASTM B62. Meter stops shall be closed button design and resilient "O" ring sealed against external leakage at the top. Stops shall be equipped with a meter coupling nut on the outlet sides.
- e. Meter and meter boxes two inches or less are supplied and installed by the City of Pembroke Pines at the owner's expense.

7. Tapping Sleeves:

Tapping sleeves shall be ductile iron meeting ASTM Grade 65-45-12, mechanical joint.

8. Valve Boxes:

- a. Valve boxes for water mains and sewer force mains shall be adjustable screw type with 5 ¼ inch shaft, 18 to 24 inch extension, Cast Iron ASTM-A48 Class 30 marked "Water" or "Sewer".
- b. Valve boxes for blow-off assembly shall be Cast Iron ASTM-A48 Class 30 marked "W".

9. Retainer Glands:

Retainer glands shall conform to ANSI/AWWA C111/A21.11-95 or latest revision. All glands shall be manufactured from ductile iron as listed by Underwriters Laboratories for 250 psi minimum water pressure rating.

10. Double check valve backflow prevention assembly:

The assembly shall conform to ANSI/AWWA C510-97 or latest revision and be capable of withstanding a working pressure of at least 150 psi without damage to working parts or impairment of function. It shall consist of two internally loaded, independently operating check valves, located between two tightly closing resilient-seated shut off valves, with four properly placed resilient-seated test cocks.

C. INSTALLATION:

1. General:

Connection of all new systems to existing mains shall be done using one of the three following methods:

- a. Method A per Broward County Public Health Department Standards, which involves a reduced size temporary connection between the existing main and the new main.
 - b. Method B per Broward County Public Health Department Standards, which involves a direct connection between the new and existing mains using two gate valves separated by a sleeve with a vent pipe.
 - c. Method C approved by the Broward County Public Department Unit, which involves a tap with one gate valve requiring disinfection of the new system prior to conducting the pressure test.
2. Bedding:
- Bedding and initial backfill (12 inches above pipe) for all pipe shall be sand with no rock larger than 1" in diameter. Pearlock or 3/4" washed rock will be used in water or where unsuitable bedding exists at the discretion of the City of Pembroke Pines. All other fill shall not have rock larger than 6" in diameter.
3. PVC Pipe:
- a. PVC pipe shall be installed in accordance with the Uni-Bell Plastic Pipe Association's Guide for Installation of PVC Pressure Pipe for Municipal Water Distribution Systems.
 - b. PVC pipe shall be installed with a minimum of 36" cover.
 - c. Detector tape shall be installed the full length of all PVC mains approximately 18" below grade, color side up.
4. Ductile Pipe:
- a. D.I.P. shall be installed in accordance with ANSI/AWWA C600-93 or latest revision.
 - b. D.I.P. shall be installed with a minimum of 30" cover.
 - c. Identification tape shall be installed the full length of all D.I.P. mains approximately 18" above the main, color side up.
5. Valves:
- a. All valves shall be installed with adjustable cast iron valve boxes with the word "WATER" or "SEWER" cast in the cover.
 - b. Main valves shall be located on an extension of the right-of-way line unless dimensioned otherwise.

- c. Main valves shall be installed away from parking areas. If this is unavoidable, proper measures shall be taken to avoid the parking of vehicles over the valves. Hydrant valves shall be installed as close to the main as possible. Valves located in non-paved areas or in parking stalls require a reflective pavement marker on the center of the nearest lane of road pavement. White reflectors for water main valves, green reflectors for force main valves.
 - d. The distance from the top of the valve actuator nut to final grade shall be a minimum of 12 inches and a maximum of 18 inches.
6. Service:
- a. Cover over service lines shall be 18" minimum, 24" maximum below finished grade and 24" under pavement.
 - b. Polyethylene shall be bedded in backfill of sand with no rock greater than 1" in diameter.
 - c. Meter stops shall have 8" to 10" cover or as required for proper meter/box installation.
 - d. Water services under pavement shall be encased in a Schedule 80 PVC sleeve for the full length of the pavement and for 2' beyond the edge.
 - e. The end of each service connection shall be marked with a 2"x4" treated stake, painted blue, extending 18" (minimum) above grade unless indicated otherwise.

D. TESTING:

- 1. The physical connection of the new system to the existing system shall be done in accordance with Section C.1. above which will dictate the order of the pressure testing and disinfection.
- 2. The complete water system shall be pressure tested and disinfected. The pressure test shall be for two hours at 150 psi minimum test pressure in accordance with ANSI/AWWA C600-93 or latest revision. The pressure test shall not vary more than ± 5 psi during the test. Leakage allowances will not be made for fittings or valves.
- 3. Allowable leakage shall not exceed the formula of:

$$L \text{ (gallons per hour)} = \frac{SD(P)^{0.5}}{133,200}$$

L = allowable leakage in gals/hr (no allowable leakage for valves)

S = length of pipe tested in feet
D = nominal diameter of pipe in inches
P = average test pressure during test in lbs/sq. in.

4. The pressure test shall be witnessed by a representative of the City of Pembroke Pines Engineering Division and the Engineer of Record.
5. Sampling points shall be provided at the locations shown on the plans or as directed by the Broward County Health Department. If not specified, sampling points shall be provided at intervals of 1500' maximum for lines greater than 1500' in length. Provide a minimum of two sampling points for all other test segments.
6. Before acceptance for operation, the water system shall be disinfected in accordance with ANSI/AWWA C651-92 or latest revision with approved bacteriological samples and proper documentation by the Broward County Health Department. Collection of samples is the Contractor's responsibility and will be witnessed by a City of Pembroke Pines Engineering Division representative.

VIII. GRAVITY SEWAGE COLLECTION SYSTEM:

A. MATERIALS:

1. Sewer Pipe and Fittings:
 - a. PVC sewer pipe and fittings shall be non-pressure polyvinyl chloride pipe conforming to ASTM D3034, SDR 35, with push-on rubber gasket joints unless otherwise noted.
 - b. Ductile Iron Pipe (D.I.P.) shall be double cement conforming to ANSI/AWWA C104/A21.4-95 or latest revision, or polyethylene lined inside conforming to ANSI/AWWA C105/A21.5-93 or latest revision, or approved equal and shall have a Coal Tar Epoxy coating, manufactured in accordance with ANSI/AWWA C151/A21.51-96 or latest revision, minimum wall thickness Class 350 (unless otherwise specified).
 - c. All fittings and accessories shall be as manufactured or supplied by the pipe manufacturer.
2. Manholes:
 - a. Manholes shall be precast per ASTM C478 type II with 4000 psi concrete and grade 40 steel. Monolithically poured bases only.
 - b. Manhole openings are to be sealed with anti-hydro cement or approved equal. No molding plaster will be allowed.

- c. Manhole joints shall be sealed with "Ramnex" gaskets or approved equal and with anti-hydro cement on the inside and outside.

B. INSTALLATION

1. Pipe and Fittings:

- a. Sewer pipe shall be installed in accordance with ASTM D2321, and the Uni-Bell Plastic Pipe Association's "Recommended Practice for the Installation of PVC Sewer Pipe".
- b. D.I.P. shall be installed in accordance with ANSI/AWWA C600-93 or latest revision.
- c. Bedding and initial backfill (12 inches) over sewer mains and services shall be sand with no rock larger than 1" in diameter. Pearrock or 3/4" washed rock will be used in water or where unsuitable bedding exists at the discretion of the City of Pembroke Pines. All other fill shall not have rock larger than 6" in diameter.
- d. Pipe connection into manhole wall shall be ductile iron pipe grouted in-place or cast-in neoprene rubber boot, or equal as approved by the City of Pembroke Pines.
- e. Gravity sewer mains installed deeper than twelve (12) feet shall be D.I.P. and shall be installed in accordance with ANSI/AWWA C600-93 or latest revision.

2. Manholes:

- a. Manholes shall be set plumb to line and grade on firm clean subgrade providing uniform bearing under the base.
- b. All openings and joints shall be sealed water-tight.
- c. The entire inside of the manholes shall be painted with two coats (8 mils each, dry) of Kopper's 300-M Bitumastic coating or approved equal; first coat red, second coat black. The outside of each manhole requires only one coat (8 mils, dry) of the same type of coating.
- d. Manholes shall be installed away from parking areas on the centerline of the roadway. If this is unavoidable, proper measures shall be taken to prohibit the parking of vehicles over manholes.
- e. Orange reflective pavement markers shall be provided on the center of the nearest lane of road pavement adjacent to all manhole locations outside the road pavement.

- f. All lids shall be provided with a polyethylene watertight manhole insert. The cover body shall be manufactured to the dimensions as shown on the contract drawings to allow easy installation in the manhole frame. The insert shall be provided with a lift strap attached to the cover body.
3. Service:
- a. Minimum slope of all service lines shall be as indicated in the South Florida Building Code - Broward County Edition.
 - b. Service laterals shall terminate at a depth 30" below finished grade.
 - c. Each service connection shall be plugged watertight with an approved plug.
 - d. The end of each service connection shall be marked with a 2"x4" treated stake painted red, extending 18" (min.) above grade.
 - e. Contractor shall rough in riser to 1 foot above finished grade and plug. At project completion, cut back to finished grade.
 - f. Connection of services to building's plumbing shall be coordinated with the City's Building and Zoning Department, Plumbing Section.

C. TESTING:

- 1. After construction of the sewer system, the entire system shall be lamped. Sewer lamping shall be witnessed by the Engineer of Record and a representative from the City of Pembroke Pines Engineering Division.
- 2. After construction of the sewer system, the City of Pembroke Pines or the Engineer of Record may require a visual infiltration and/or exfiltration test to be performed on the entire system or any part thereof.
- 3. An air test may be substituted for the water exfiltration test, upon approval of the City of Pembroke Pines.
- 4. Manhole exfiltration leakage shall not exceed 4 gallons per day per unit.
- 5. Sewer pipe exfiltration leakage shall not exceed 10 gallons per day per inch diameter per mile in a two-hour test period for any section tested.
- 6. Visible manhole and sewer pipe infiltration leakage shall not be permitted.
- 7. Sanitary sewer shall be televised, at Developer's expense, prior to final approval of construction. Videotape and report shall be examined by the City of Pembroke Pines Engineering Division. Owner/Contractor shall be responsible for correcting any deficiencies prior to the City's certification of completion to any agency.

IX. WET WELL MOUNTED WASTEWATER PUMPING STATION

A. GENERAL

1. Scope of Work

Furnish all labor, materials, equipment and incidentals required and install, place in operation, and field test a telemetry controlled wet well mounted wastewater pumping station and a emergency generator or bypass pump to provide emergency service to the pump station. The station shall be complete with pumps, motors, piping, valves, telemetry, electrical work (including motor controls), structures or connection and appurtenances, tested and ready for service. The generator or pump shall be trailer mounted, diesel powered sized to maintain the pump station flow. Refer to plans for other site features.

2. Description of System

- a. The Contractor shall furnish and install one factory built, automatic pumping station as manufactured by Smith & Loveless, Inc., Lenexa, Kansas. The station shall be complete with all needed equipment, factory-installed on a welded steel base with fiberglass cover.
- b. The principal items of equipment shall include two vertical, close-coupled, motor driven, vacuum primed, non-clog sewage pumps; valves; internal piping; central control panel with circuit breakers; motor starters and automatic pumping level controls; heater, ventilating blower; priming pumps and appurtenances; and all internal wiring.
- c. Refer to plans for a complete list of operating conditions.
- d. The pumping station shall pump raw, unscreened, domestic wastewater into a force main, which is pumped to a local manhole, or transmission system.
- e. The remote telemetry unit shall include an enclosure with power supply, central processing unit, analog and digital outputs, radio, directional antenna and appurtenances and all wiring.
- f. The Contractor shall furnish, at the City of Pembroke Pines discretion, either an emergency generator or emergency bypass pump. The generator shall be sized to meet the starting amperage of both pumps simultaneously. The bypass pump shall be a minimum six (6) inch self-priming pump. Either shall be diesel powered , trailer mounted with necessary towing equipment including, lights and hitch. The generator shall be supplied with necessary plug and cable for supplying power to the pump station control panel. The bypass pump shall be supplied with the necessary hoses and connections to provide bypassing of the pump station.

3. Qualifications

To assure unity of responsibility, the motors and control system shall be furnished and coordinated by the local pump manufacturer representative. The Contractor and pump manufacturer shall assume responsibility for the satisfactory installation and operation of the entire pumping system including pumps, motors, controls, generator or bypass pump as specified.

4. Submittals

- a. Copies of all materials required establishing compliance with the specifications should be submitted in accordance with the provisions of the general conditions. Submittals shall include at least the following:
 - i. Shop erection drawings showing all-important details of construction, dimensions and anchor bolt locations.
 - ii. Descriptive literature, bulletins and catalogs of the equipment.
 - iii. Data on the characteristics and performance of each station pump, generator, data shall include a certified performance test, based on actual shop tests of the sale units, which show that they meet the specified requirements for head, capacity, efficiency, and horsepower. Curves shall be submitted on 8 1/2 inch by 11 inch sheets at as large a scale as practical. Curves shall be plotted from no flow at shut off head to pump capacity at minimum specified total dynamic head. Catalog sheets showing a family of curves will not be acceptable.
 - iv. Complete master wiring diagrams, telemetry or control schematics, including coordination with other electrical control devices operating in conjunction with the pump control system and suitable outline drawings shall be furnished for approval before proceeding with manufacturer, standard pre-printed sheets or drawings simply marked to indicate applicability to this contract will not be acceptable.
 - v. A drawing showing the layout of the pump control panel shall be furnished, the layout shall indicate every device mounted on the door with complete identification.
 - vi. The total weight of the equipment including the weight of the single largest item.
 - vii. A complete total bill of materials of all equipment.
 - viii. A list of the manufacturer's recommended spare parts to be supplied in addition to those specified in paragraph 6.a. with the

manufacturer's current price for each item. Include gaskets, seals, etc. on the list. List bearing by the bearing manufacturer's numbers only.

ix. All submittal dates required by the general conditions.

x. Complete motor data.

b. In the event that it is impossible to conform to certain details of the specifications due to different manufacturing techniques, describe completely all non-conforming aspects.

c. Upon receipt of approval of submitted material, provide five prints.

5. Operating Instructions

a. Operating and maintenance manuals shall be furnished which will include parts lists of components and complete service procedures and troubleshooting guide. The manuals shall be prepared specifically for the installation and shall include all required cuts, drawings, equipment lists, description, etc. that are required to instruct operating and maintenance personnel unfamiliar with such equipment.

b. A factory trained representative of all major component manufacturers, who has complete knowledge of proper operation and maintenance, shall be provided for one (1) day at the station, to instruct representatives of the City and the Engineer on proper operation and maintenance and to perform initial start-up of the pump station. With permission of the City, this work may be conducted in conjunction with the inspection of the installation and test run. If there are difficulties in operation of the equipment due to the manufacturer's design or fabrication, additional service shall be provided at no cost to the Owner.

6. Spare Parts

a. A complete replacement pump shaft seal assembly shall be furnished with each pump station. The spare seal shall be packed in a suitable container and shall include complete installation instructions. In addition, a spare seal gasket shall be provided.

b. Spare parts shall be properly bound and labeled for each identification without opening the packaging and suitably protected for long term storage.

7. Guarantee

a. The manufacturer of the lift station shall guarantee the structure and all equipment to be free from defects in materials and workmanship for a period

of up to one year from date of start-up, not to exceed 18 months from the date of shipment.

- b. Warranties and guarantees by the suppliers of various components in lieu of single-source responsibility by the station manufacturer will not be accepted. The station manufacturer shall be solely responsible for the guarantee of the station and all its components.
- c. The repair or replacement of those items normally consumed in service, such as seals, grease, light bulbs, etc., shall be considered as part of routine maintenance and upkeep.

B. EXECUTION

1. Installation

- a. Installation shall be in strict accordance with the manufacturer's instructions and recommendations in the locations shown on the drawings. Installation shall include furnishing the required oil and grease for initial operation. The grades of oil and grease shall be in accordance with the manufacturer's recommendations. Anchor bolts shall be set in accordance with the manufacturer's recommendations.
- b. The Contractor shall submit a certificate from the equipment manufacturer stating that the installation of the equipment is satisfactory, that the equipment is ready for operation, and that the operating personnel have been suitably instructed in the operation, lubrication and care of each unit.
- c. Installation of the pump chamber shall be done in accordance with the written instructions provided by the manufacturer.

2. Shop Painting

- a. Before exposure to weather and prior to shop painting, all surfaces shall be thoroughly cleaned, dry and free from all mill-scale, rust, grease, dirt and other foreign matter.
- b. All pumps and motors shall be shop coated, with manufacturer's standard coating.
- c. All nameplates shall be properly protected during painting.
- d. Gears, bearing surfaces and other similar surfaces obviously not to be painted shall be given a heavy shop coat of grease or other suitable rust-resistant coating. This coating shall be maintained as necessary to prevent corrosion during periods of storage and erection and shall be satisfactory to the engineer up to the time of the final acceptance test.

3. Inspection and Testing

a. General

- i. The engineer shall have the right to inspect, test or witness test of all materials or equipment to be furnished under these specifications, prior to their shipment from the point of manufacture.
- ii. The engineer shall be notified in writing prior to initial shipment, in ample time so that arrangements can be made for inspection by the engineer.
- iii. The engineer or his representative shall be furnished all facilities, including labor, and shall be allowed proper time inspection and testing of material and equipment.
- iv. Materials and equipment shall be tested or inspected as required by the engineer, and the cost of such work shall be included in the cost of the equipment. The Contractor shall anticipate that delays may be caused because of the necessity of inspection, testing and accepting materials and equipment before their use is approved.
- v. The services of a factory representative shall be furnished for one (1) day, for the station, and shall have complete knowledge of proper operation and maintenance to inspect the final installation and supervise the test run of the equipment.
- vi. Field tests shall not be conducted until such time that the entire installation is complete and ready for testing, including permanent electrical power and telemetry control.
- vii. All components of the pump station shall be given an operational test at the pump station manufacturer's facility to check for excessive vibration, for leaks in the pumping or seals and correct operation of the automatic control and vacuum priming systems and all auxiliary equipment. Installed pumps shall take suction from a deep wet well, simulating actual service conditions. The control panel shall undergo both a dry logic test and a full operational test with all systems operating.
- viii. Factory test instrumentation must include flow measuring with indicator; compound suction gauge; bourdon tube type discharge pressure gauge; electrical meters to measure amperes, volts, kilowatts and power factor; speed indicator and a vibrometer capable of measuring both amplitude and frequency.

- b. Pumps
 - i. After all pumps have been completely installed, and working under the direction of the manufacturer, conduct in the presence of the engineer and a City of Pembroke Pines representative, such tests as are necessary to indicate that pumps conform to the specifications. Field tests shall include all pumps included under this section. Supply all electrical power, water or wastewater labor, equipment and incidentals required to complete the field tests.
 - ii. If the pump performance does not meet the specifications, corrective measures shall be taken or pumps shall be removed and replaced with pumps which satisfy the conditions specified.
- c. Motors
 - i. The Contractor shall check all motors for correct clearance and alignment and for correct lubrication in accordance with manufacturer's instructions. The Contractor shall check direction of rotation of all motors and reverse connections if necessary.
- d. Telemetry
 - i. The contractor shall demonstrate that the telemetry system is functional and has communication with the base unit.
- e. Generator
 - i. The Contractor shall provide for a load test equal to the start up amperage of both pumps.
- f. Bypass Pump
 - i. The Contractor shall demonstrate that the bypass pump is capable of meeting actual service conditions.

X. EARTHWORK

A. GENERAL

1. None of the existing material is to be incorporated in the limerock base.
2. All subgrade under paved areas shall have a minimum LBR value of 40 and shall be compacted to 98% of the maximum density as determined by AASHTO T-180.
3. All fill material in areas not to be paved shall be compacted to 95% of the maximum density as determined by AASHTO T-180.

4. A 2" blanket of top soil shall be placed over all areas to be sodded.
5. Sod shall be St. Augustine, Bitter Blue or Floratam and shall be placed on the graded topsoil and watered to insure satisfactory condition upon final acceptance of the Project.
6. When working in and around existing drainage canals or lakes, appropriate silt barriers shall be installed.

B. ON-SITE

1. All organic and other unsuitable material within the right-of-way shall be removed.
2. Suitable backfill shall be minimum LBR 40 material compacted to 98% of the maximum density as determined by AASHTO T-180 for three (3) feet beyond the perimeter of the paving.

XI. STORM DRAINAGE

A. Contractor may utilize one of the following materials.

1. ALUMINUM

- a. Pipe shall be aluminum, manufactured in conformance with ASTM B 209.
- b. Pipe shall be spiral rib drainage pipe with $\frac{3}{4}$ " x $\frac{3}{4}$ " ribs, approximately 7 1/2" on center. Gauge thickness shall meet FDOT Standard 945-1.
- c. Pipe coupling bands shall be 12" wide standard split bands of the same alloy as the pipe and may be one gauge lighter than the pipe.
- d. Polyurethane or other sealant shall be used with coupling bands on all non-perforated pipe.

2. REINFORCED CONCRETE (RCP)

Concrete pipe for storm sewers shall conform to ASTM L70-79, Table III, Wall B, or latest revision. All pipe shall have modified tongue and groove joints, and have rubber gaskets, unless otherwise specified.

3. MISCELLANEOUS

- a. Bedding and initial backfill over drainage pipe shall be sand with no rock larger than 1" diameter.
- b. Backfill material under areas paved areas shall be compacted to 98% of the maximum density as determined by AASHTO T-180.
- c. Backfill material under areas not to be paved shall be compacted to 95% of the maximum density as determined by AASHTO T-180.
- d. Catch basins shall be precast with 3000 psi concrete and grade 40 reinforced steel.

4. INSTALLATION

- a. Pipe shall be placed on stable granular material free of formation, Other foreign formations and constructed to uniform grade and line.
- b. Backfill material shall be well graded granular material well tampered In layers not to exceed six inches (6").
- c. Provide a minimum protective cover of 18 inches over storm sewer and avoid unnecessary crossing by heavy construction vehicles during construction.
- d. The contractor shall notify the local water control district at least 24 hours prior to the start of the construction and inspection.

XII. STORM DRAINAGE PRE-TREATMENT/EXFILTRATION SYSTEM

- A. Any conflict with existing or proposed utilities shall immediately be brought to the attention of the engineer. Any impermeable material encountered in the Excavation for the drain field shall be removed as directed by the engineer.
- B. The trench liner shall be tyvar spun bonded polypropylene filter fabric as manufactured by the Dupont company, or approved equal. It shall be used on the sides, and top of the drain field ditch. The top section of the material shall be lapped a minimum of 24 inches and the contractor shall take extreme care in backfilling to avoid bunching the material.
- C. Perforated pipe within the drain field shall have 3/8 inch perforations 360 degrees around the pipe with approximately 120 perforations per foot of pipe.
- D. Perforated pipe shall terminate five feet (5') from the drainage structure. The remaining five feet (5') of shall be non-perforated pipe.
- E. Pipes shall terminate two feet (2') from the end of the trench or connect to additional catch basins.

XIII. PAVING

A. General

1. All underground utilities shall be completed prior to the construction of the limerock base and prior to the placement of the pavement.
2. All existing pavement cuts or damage due to construction shall be properly restored at the contractor's expense.
3. Where proposed pavement is to be connected to existing pavement, the existing edge of pavement shall be sawcut.
4. All street corner pavement radii shall be 25 feet unless otherwise noted on the plans.
5. Upon completion of drainage improvements and limerock base construction (and before placing asphalt pavement) the contractor shall furnish the engineer of record and the City of Pembroke Pines "as-built" plans for these improvements, showing the locations and the pertinent grades of all drainage installations and the finished rock grades of the road crown and edge of pavement at 50-foot intervals. These as-builts shall be approved by the City prior to the placement of asphalt.

B. Material:

1. Base course shall be crushed limerock Miami Oolite with a minimum of 70% carbonates of calcium and magnesium (60% for local streets and parking areas) and a minimum limerock bearing ratio of 100.
2. Prime coat and tack coat shall meet F.D.O.T. standards and specifications.
3. Surface course shall be equal to F.D.O.T. type S-3 Asphalt.
4. Reinforced concrete slabs shall be constructed of Class 1 concrete with a minimum strength of 3000 PSI and shall be reinforced with a 6" x 6" No. 6 gauge wire mesh.

C. INSTALLATION

1. Limerock base material shall be 8 inches thick and shall be compacted to 98% of the maximum density as determined by AASHTO T-180C.
2. Limerock base material shall be placed in maximum 6" lifts. Bases greater than 6" shall be placed in two or more equal lifts.

3. Asphaltic concrete shall be a minimum of 1-1/2 inches thick and shall be placed in 2 –3/4” lifts. Note the second lift is to be placed after a minimum of 80% of the houses are complete or as directed by the City Engineer.
4. Prime coat shall be placed on all limerock bases in accordance with F.D.O.T. standards.
5. Tack coat shall be placed as required in accordance with F.D.O.T. standards.

D. TESTING

All subgrade, limerock and asphalt tests required shall be taken at the direction of the engineer and/or the City of Pembroke Pines.

1. The finished surface of the base course and that of the wearing surface shall not vary more than 1/4” from the template. Any irregularities exceeding this limit shall be corrected.
2. Density tests shall be taken by an independent testing laboratory, certified by the State of Florida, and taken as directed by the engineer and the City of Pembroke Pines.
3. All testing costs (paving) shall be paid for by the owner except those tests failing to meet the specified requirements, which are to be paid by the contractor.

XIV. SIGNING AND MARKING

- A. All pavement markings shall be hot applied thermoplastic manufactured and applied in accordance with FDOT Standard Specification’s Section 711.
- B. All signs shall be manufactured and installed in accordance with Broward County Traffic Engineering Division Standards and Manual on Uniform Traffic Control Devices.
- C. Reflective pavement markers shall be Class B Markers manufactured in accordance with FDOT Standard Specification 706 and installed in accordance with the manufacturer’s recommended procedures.

DIVISION IV: STANDARD DETAILS

STANDARD ROAD DETAILS

NO. STATUS	DESCRIPTION
R-1	40' PRIVATE ROAD - INVERTED CROWN
R-2	40' PRIVATE ROAD - NORMAL CROWN
R-3	50' PUBLIC ROAD - 2 LANES
R-4	60' PUBLIC ROAD - 2 LANES
R-5	80' PUBLIC ROAD - 2 LANES
R-6	80' PUBLIC ROAD - 4 LANES
R-7	110' PUBLIC ROAD - 4 LANES (INTERIM) - ARTERIAL
R-8	110' PUBLIC ROAD - 6 LANES - ARTERIAL
R-9	CUL-DE-SAC (50' R/W) RESIDENTIAL
R-10	CUL-DE-SAC (60' R/W) COMMERCIAL & INDUSTRIAL
R-11	CUL-DE-SAC GRADING DETAIL
R-12	FIRE LANES AND MIN. TURNAROUND REQ'D AT DEAD-ENDS
R-13	INTERSECTION SIGHT DISTANCE (LOCAL ROADS)
R-14	SIGHT RESTRICTIONS FOR ACCESS TO ARTERIAL ROAD
R-15	LOCATION OF PLANTING WITHIN PUBLIC R/W
R-16	LOCATION OF RESIDENTIAL ROADWAY MARKERS IN PUBLIC R/W
R-17	MINIMUM CLEARANCE BETWEEN ROAD & WATERWAY
R-18	RESIDENTIAL DRIVEWAY SPACING & DIMENSIONS
R-19	ASPHALT DRIVEWAY RESIDENTIAL
R-20	COMMERCIAL & INDUSTRIAL DRIVEWAY SPACING
R-21	ASPHALT DRIVEWAY COMMERCIAL & INDUSTRIAL
R-22	TYPICAL PARKING AREA REQUIREMENTS
R-23	PRIVATE PARKING AREA - INVERTED CROWN SECTION
R-24	PRIVATE PARKING AREA - NORMAL CROWN SECTION
R-25	ASPHALTIC BICYCLE PATH
R-26	CURB AND GUTTER DETAILS
R-27	CURB AND GUTTER DETAILS
R-28	SIDEWALK CONSTRUCTION
R-29	TYPICAL SIGNING FOR BEGINNING AND ENDING OF BICYCLE PATH
R-30	STREET SIGN AND POST DETAIL
R-31	STREET SIGN LOCATION - D-3 (2) TYPICAL
R-32	SPECIAL SIGN DETAILS (HANDICAPPED SIGN)
R-33	PROCEDURE FOR RESTORATION OF FLEXIBLE PAVEMENT
R-34	FLEXIBLE PAVEMENT RESTORATION - PERPENDICULAR UTILITY INSTALLATION

NO.
STATUS

DESCRIPTION

- R-35 FLEXIBLE PAVEMENT RESTORATION - PARALLEL UTILITY
INSTALLATION
- R-36 FLEXIBLE PAVEMENT RESTORATION - DIRECT BURIAL CABLE OR
CONDUIT
- R-37 FLEXIBLE PAVEMENT RESTORATION MULTIPLE PIPE OR DUCTS
(4" DIAMETER OR SMALLER)
- R-38 PAVEMENT RESTORATION LOCAL ROADS - WATER MAIN

STANDARD DRAINAGE DETAILS

- D-1 LAKE/CANAL/WATERWAY BANK SLOPE REQUIREMENTS
- D-2 TYPE P STRUCTURE BOTTOMS
- D-3 TYPE J STRUCTURE BOTTOM (ALTERNATE A)
- D-4 TYPE J STRUCTURE BOTTOM (ALTERNATE B)
- D-5 TYPE "C" CATCH BASIN (MODIFIED)
- D-6 CURB INLET TOPS TYPE 5 AND 6
- D-7 CATCH BASIN APRON
- D-8 EXFILTRATION TRENCH
- D-9 TYPICAL SINGLE FAMILY LOT GRADING DETAIL
- D-10 PRB DETAIL
- D-11 TYPICAL HEADWALL AND OUTFALL DETAIL

GENERAL WATER AND SEWER DETAILS

- G-1 TRENCH DETAIL
- G-2 RESTRAINED JOINT DETAIL
- G-3 VALVE AND BOX DETAIL
- G-4 UTILITY CROSSING REQUIREMENTS
- G-5 UTILITY CROSSING DEFLECTION TYPE
- G-6 UTILITY CROSSING FITTING TYPE

NO.	STATUS	DESCRIPTION
SEWER DETAILS		
S-1		CONCENTRIC PRECAST MANHOLE (6' AND UNDER)
S-2		ECCENTRIC PRECAST MANHOLE (6' AND OVER)
S-3		PRECAST OUTSIDE DROP MANHOLE
S-4		INSIDE DROP MANHOLE
S-5		MANHOLE COUPLING DETAIL
S-6		MANHOLE FLOW CHANNELS
S-7		SHALLOW SERVICE LATERAL
S-8		DEEP SERVICE LATERAL
S-9		MANHOLE FRAME AND COVER
S-10		CLEAN-OUT
S-11		STANDARD LIFT STATION PLAN
S-12		STANDARD LIFT STATION SECTION
S-13		LIFT STATION EMERGENCY BY-PASS
S-14		LIFT STATION ELECTRICAL PANEL
S-15		MANHOLE AIR RELEASE VALVE
S-16		SERVICE PANEL WALL AND CONTINUOUS FOOTER DETAIL

WATER DETAILS

W-1	FIRE HYDRANT DETAIL
W-2	FILLING AND FLUSHING CONNECTION
W-3	TYPICAL SAMPLE POINTS
W-4	TYPICAL SINGLE AND DOUBLE SERVICE CONNECTION
W-5	2" TERMINAL BLOW OFF
W-6	DOUBLE DETECTOR CHECK VALVE FOR FIRE LANE
W-7	WATER AIR RELEASE VALVE

STANDARD LANDSCAPE DETAILS

L-1	TREE PLANTING SPECIFICATIONS
L-2	IRRIGATION SPECIFICATIONS
L-3	TRENCHING DETAIL

CITY MAPS

M-1	MAJOR CITY ROADS
M-2	FACILITIES MAP
M-3	OPEN SPACES
M-4	FLOOD ZONES

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